A day in the life of a carbon credit for reduced deforestation

There is broad domestic and international support to include the policy approach called Reducing Emissions from Deforestation and Forest Degradation (REDD) in climate policy. Allowing credit for deforestation reductions within climate legislation can significantly reduce the costs of a U.S. climate program. It is also a powerful way to get major emitting developing countries to make their own emissions reduction commitments.

The debate is now focused on how we can best implement this idea to the advantage of both U.S. companies and the global environment. This means the United States must build the systems and networks to ensure activities address the true drivers of deforestation, and that credits are only issued for real emissions reductions.

Below we lay out how REDD credits can be produced and transferred to U.S. companies to use for compliance with a domestic climate law.

First we describe how Brazil, a country facing significant deforestation problems, is poised to produce REDD credits based on actions it has already taken to reduce its greenhouse gas emissions.

Then we describe step-by-step how a future Brazilian REDD program could supply U.S. companies with REDD credits for domestic compliance in the near future.

What has Brazil done already to position itself to be ready to provide REDD credits?

Brazil's federal space agency, *INPE*, has accurately measured deforestation since the 1980s using high-resolution satellite sensors. INPE is able to measure precisely and in real time how much forest is cleared or degraded every year, and has been making this data publicly available for free for several years. Scientists worldwide use data from these satellite images and measurements of forest carbon sample plots to measure deforestation and convert that to carbon emissions. The surveying methods cover the entire nation, so forest carbon accounting accurately includes any local increases or decreases in national carbon stocks. By comparing its actual emissions to its deforestation targets, Brazil can compute how much it has reduced its deforestation emissions, and these results can be independently verified.

We are already seeing this work. Since 2006, Brazil has reduced deforestation below national historical levels by massively expanding the number and sizes of parks and reserves and clamping down on illegal loggers and others who unlawfully clear the land. The government's Amazon Fund is developing criteria to certify deforestation reduction projects. This has built confidence and allowed Brazil to become more ambitious in its forest protection efforts. Last year, Brazil publically committed to further reduce its rates of national deforestation 80% below its average historical deforestation rate by 2020. Several Amazon states (whose individual deforestation emissions are larger than the total emissions of many other rainforest countries) are designing their own REDD programs at the regional and local levels, which will work in concert with the national initiative to reduce deforestation.

How would REDD crediting work? A hypothetical step-by-step illustration.

Let's imagine *American Electrical Energy (AEE),* a fictional major U.S. electric utility, is being regulated under a domestic emissions cap. AEE is looking for low-cost ways to acquire emissions allowances, and can satisfy a portion of its compliance obligation using REDD credits. After reviewing Brazil's REDD project portfolio, AEE chooses to invest in the Tapuia Indigenous Land REDD project in the Brazillian Amazon.

The Tapuia, a fictional indigenous group based on a real tribe, lives on a legally protected reserve the size of Delaware. The group's avoided deforestation project involves building the community's capacity to monitor and control the borders of their territory, through GIS mapping, overflights, regular border patrols, and using these capabilities to prevent illegal logging and land clearing. Based on their share of the Amazon's carbon stocks, the Tapuia have rights to REDD credits for up to 100,000 tons of CO_2 per year, depending both on how successful they are at keeping their reserve intact and on Brazil's overall performance in curbing deforestation. After their project is certified by the Amazon Fund, the Space Research Agency monitors changes in land cover on Tapuia lands on behalf of the tribe.

AEE can now invest in the Tapuia project to earn a portion of the REDD credits, and the Tapuia get the resources they need to prevent deforestation on their land. A National Carbon Insurance Reserve agrees to help insure AEE's investment and the long-term environmental performance of the project.

What a future REDD project might look like (based on a real project in Brazil): *On a day in May 2012, men from the Tapuia tribe patrolling the borders of their reserve find the tracks of a logger's truck. This sort of illegal logging often leads to clearcutting – and, ultimately, agricultural conversion. Using their legal authority to control their reserve, the Tapuia radio the GPS coordinates of the logger's trail to government agents who arrest the loggers, confiscate their equipment, and close the mill that had been processing the illegally harvested wood. The pick-up truck, fuel, GPS, and radio used by the Tapuia tribesmen are all paid for by the Tapuia REDD project, which is certified under the Amazon Fund REDD program, and paid for by investors such as AEE. The REDD project also brings in enough money to support sustainable economic alternatives to logging and land clearing in the Tapuia village – beekeeping, handicrafts and collection of valuable hardwood seeds. The project is successful because the economic benefits of protecting the forests flow directly to the local people, and gives them a stake in ensuring the effort is successful, which in turn avoids further deforestation.*

As the project progresses, third-party verifiers review the publicly available satellite data; compute Brazil's deforestation rate; and visit the Tapuia reserve to verify that the group's forest is intact. As the quantity of Tapuia REDD credit tons earned by the project are verified, each ton is individually listed in Brazil's National Forest Carbon Registry, so they can be tracked to ensure they are only used once. U.S. EPA has included the National Registry on its list of approved carbon registries, because the Registry is independently audited by accredited third parties to confirm the projects meet domestic and international quality standards. Verifiers also make certain that a Carbon Reserve has been set up to insure against reversals, and they also review transparency, local participation and informed consent.

Once AEE takes possession of the Tapuia REDD project credits, it presents EPA with certificates for the listed tons. After EPA confims that the Amazon Fund program and Tapuia project meet U.S. offset quality criteria, the Tapuia project REDD credits are retired from Brazil's National Registry and EPA issues to AEE an equivalent number of offset credits for use within the U.S. emissions cap.

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