

Project Brief

Mitigating Climate Change Through Tropical Forests: An Analysis of Bilateral U.S. REDD+ Finance



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Background

Since 2007, the 194 countries participating in the United Nations Framework Convention on Climate Change have agreed that increasing forest cover and combatting deforestation will be essential to effectively mitigate climate change. To meet this end, developed nations, including the United States, have collectively provided billions in aid to developing countries for REDD+, reducing emissions from deforestation and forest degradation. Through REDD+, tropical countries are financially compensated for measured and verified decreases in carbon emissions or increases in forest cover that result from conservation, afforestation, reforestation, and sustainable management of forest carbon stocks.

These initial investments for REDD+ made by the U.S. and other developing countries are meant to provide the basic infrastructure for the mechanism by helping countries put forward “ambitious REDD+ plans” for national orchestration (USAID, 2010). At this point, countries have varying abilities to effectively execute REDD+ projects; each may lack the necessary level of governance, established land tenure rights, satellite data for monitoring and establishing baselines for forest carbon stocks, legal institutions, or support of indigenous or other local peoples. All of these activities make up the first phase of the REDD+ framework, “Readiness.” Readiness activities build capacity for pay-for-performance “Demonstration” activities, where national or subnational projects receive payment only after an increase in forest cover and decrease in emissions has been demonstrated with satellite data. After the Readiness phase, funding for the framework and individual projects comes not only from donor governments but from linkages with either carbon markets (should a global carbon cap and trade program arise) or a global agreement similar to the Kyoto Protocol come into force.

As donor countries increasingly allocate money to REDD+, examinations of early initiatives will be key to ensure that the mechanism is on track to accomplish its goals of sequestering carbon and slowing deforestation.

Objectives

- 1. What does the U.S. portfolio of REDD+ investments look like, and what factors have been associated with these investment decisions?**
- 2. What other approaches are needed to complement the U.S.’ REDD+ investments and ensure the mechanism’s long-term viability?**

Approach

Our primary source of data was the **U.S. REDD Finance Database** created by the Tropical Forest Group¹ that aims to capture every instance in which the U.S. government has relayed information to the public about its bilateral expenditures for REDD+ and other sustainable tropical forestry projects. We also utilized technical capacity gap data by Romijn et al., 2012 and governance indicators by the World Bank and created our own “REDD+ Engagement Level” metric based on country involvement in multilateral REDD+ organizations. After compiling U.S. financing data for each country, we ran linear regressions against several variables to determine if any correlated with higher finance. To determine any patterns or relationships in reported impacts, we compiled all the reported impacts for each country and categorized them according to how they fit the U.S. REDD+ strategy and our own set of categories.

¹ Available publicly online at <www.usreddfinance.org>

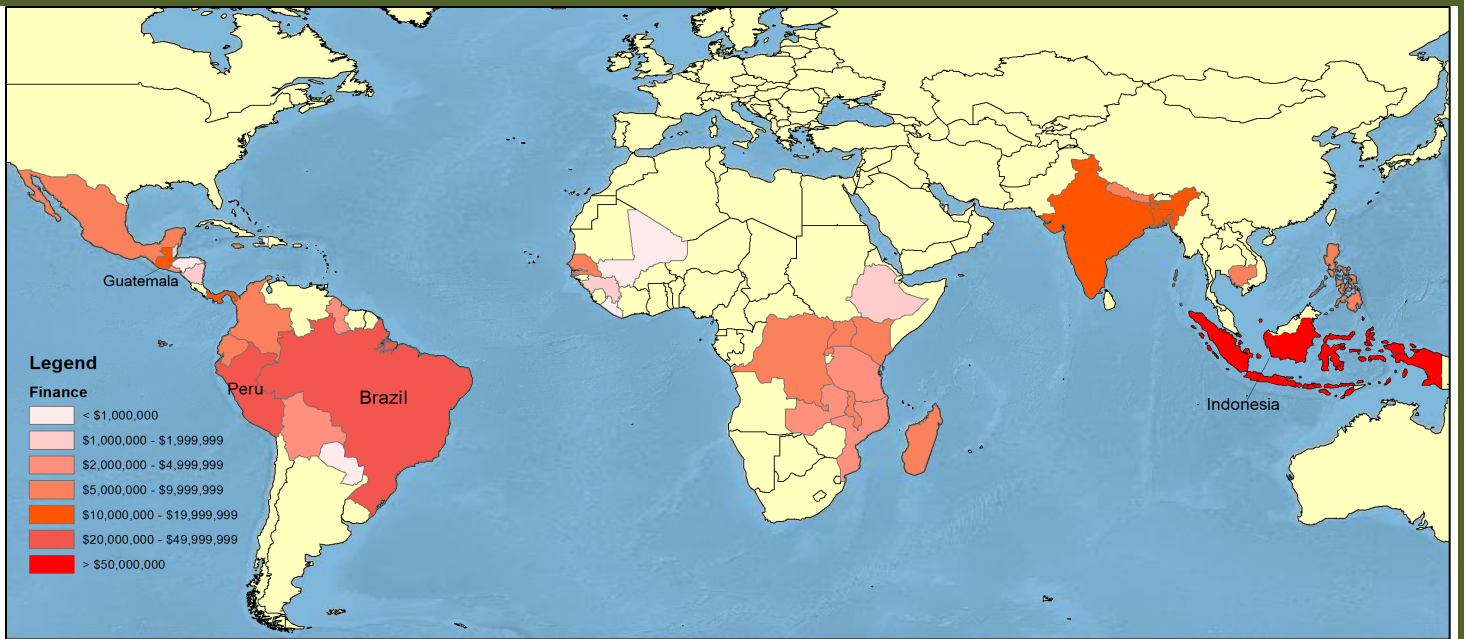


Figure 1: Map showing distribution of finance across the 36 countries studied. Color intensity represents amount funding each country receives from the U.S. for REDD+ projects.

What does the U.S. REDD+ portfolio look like?

Investments:

An analysis of United States bilateral REDD+ investments between 2008 and 2011 to 36 tropical countries revealed that roughly 37% was given to three countries: Indonesia, Peru, and Brazil. While these countries have differing deforestation rates and drivers, they all contain large swaths of biologically diverse rainforests (Table 1).

Table 1: Country profiles

	Indonesia	Peru	Brazil
Bilateral Finance (FY 2008-2011)	\$52.3 million	\$32.9 million	\$25.4 million
Total Forested Area (ha)	181,157,000	128,522,000	108,376,383
Annual deforestation rate (2000-2005)	-1.91%	-0.14%	-0.63%
Major Deforestation Drivers	Palm oil	Illegal logging	Soybeans

Resulting Impacts:

In examining impacts resulting from finance dispersed during these years, we interpreted that the majority of reported impacts (57%) facilitated “Readiness” for REDD+ (Figure 2). Readiness activities build capacity for a performance-based system ideally supported by carbon markets and requiring that countries demonstrate emissions reductions before receiving payment. Even at this early stage, some countries possess greater capacities to execute REDD+ projects and plan and receive finance to pursue “Demonstration” (40% of

reported impacts), which unlike Readiness activities produce quantifiable impacts. “Architecture” is geared towards creating and supporting a global framework to integrate national REDD+ programs. Bilateral funding for Architecture may be low because multilateral funds are likely more appropriate means to meet this end.

To gain further insight about the usage of Readiness funds since FY 2008, we examined each of the 260 impacts from FY 2008 to FY 2011 in the database associated with Readiness. We then broke down the funding into seven different categories based on the range of impact descriptions (Figure 2):

1. Improve forest management
2. General capacity building
3. Strengthen environmental regulation compliance or prosecution
4. Strengthen partnerships and participation (between local government, forest communities, national government, and/or private sector)
5. Strengthen forest governance
6. Agroforestry
7. Technologies for forest carbon monitoring and mapping

By evaluating the number of times an intended or realized impact fell into each category, we were better able to identify trends and make inferences about the status of REDD+-related activities.

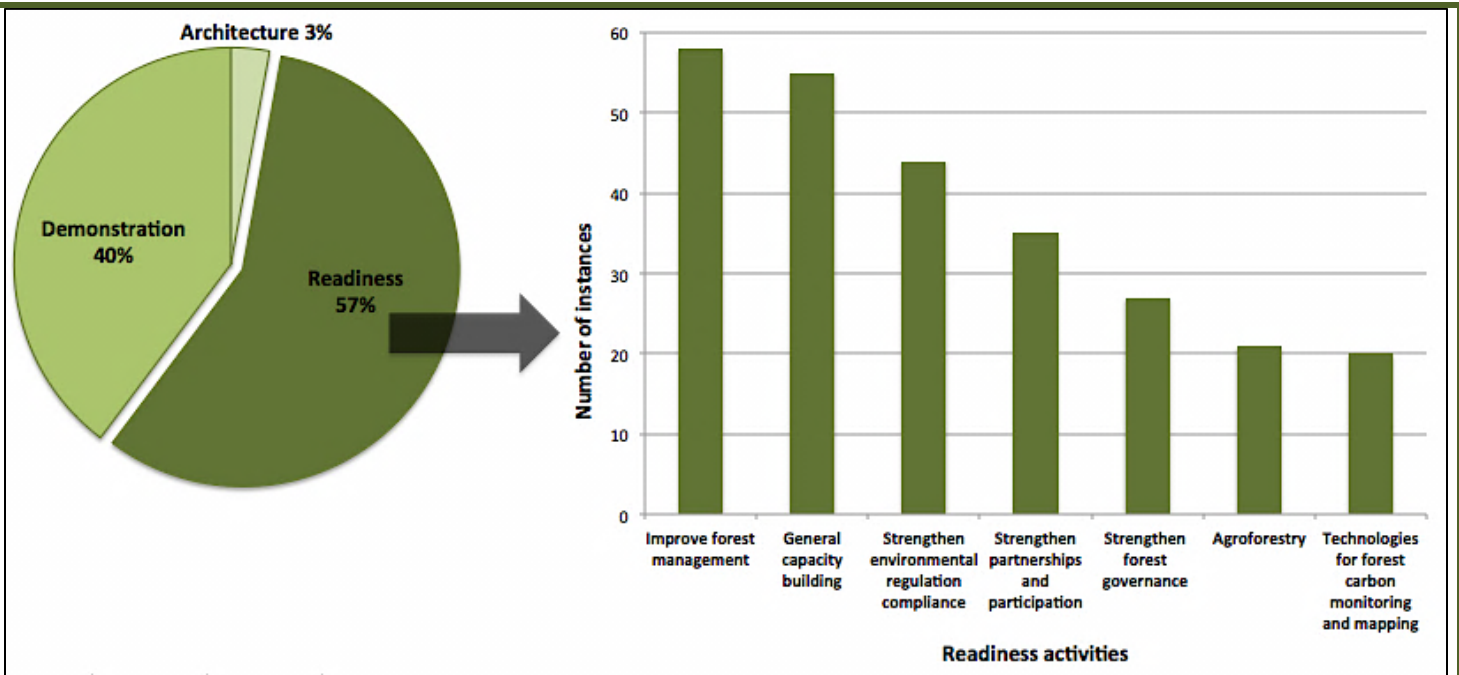


Figure 2: Breakdown of reported impacts resulting from bilateral REDD+ investments in 36 countries from 2008 to 2011, first by U.S. REDD+ Strategy category, then by 7 Readiness categories we created.

What factors have been associated with these investment decisions?

We ran linear regressions to determine if certain factors are statistically associated with investment decisions. Results suggest that countries with higher per capita gross domestic products (GDPs), larger forested area, and/or greater technical capacity to monitor and map carbon fluxes often received more finance. This strategy implies that the U.S. is trying to optimize its return on investment and minimize risk. These investment priorities may ignore the development of a strong global REDD+ framework and those countries that experience high rates of deforestation and biodiversity loss.

Per Capita GDP

The positive relationship between finance and per capita GDP indicates that the U.S. is more likely to invest in countries that possess relatively favorable financial situations. This relationship was very strong, with higher per capita GDP predicting higher finance by chance only two percent of the time ($p\text{-value}=0.02$). Although there are countries that have a relatively low per capita GDP within our dataset, they tend to receive less finance than countries with higher per capita GDPs. The GDP per capita of a country may be inversely proportional to its capacity to implement REDD+ initiatives (Angelsen, 2008). Richer countries arguably possess greater potential to leverage co-finance from national, regional, or local governments, increasing a given project's potential for success. This contrasts with the riskier prospect of investing in poorer countries that may lack government resources to support projects.

Technical Capacity Gap

With regard to the technical capacity gap for each country, we found that as capacity gap increases, the amount of financing received by each country from the U.S. decreases ($p\text{-value}=0.01$). This essentially indicates that the U.S. is more interested in funding countries with larger technical capabilities to execute carbon mapping and monitoring. Those countries with abilities to monitor the carbon stored in their forests on a national scale are potentially better investments as satellite monitoring can prove in real time whether the finance is actually affecting change.

Total Forested Area

Our analysis revealed that as the amount of forested area a country possesses increases, so does the amount of finance it receives ($p\text{-value}=0.01$). This indicates that the U.S. is more interested in financing countries that have a larger area of concern. Additionally, the U.S. may be attracted to countries with greater total forested area because they may offer the potential for larger scale projects that target bigger tracts of forests. Bigger tracts of forests constitute much larger carbon stocks.



Photo credit: University of Montana

What other approaches are needed to complement the U.S. REDD+ investments and ensure the mechanism's long-term viability?

Constructing and analyzing the United States' REDD+ portfolio has suggested that certain criteria influence the U.S.' bilateral investment strategies, most likely to optimize return on investment. These initial investments supporting Readiness activities from the U.S. and other donor countries are essential for the progression of the REDD+ mechanism to a performance-based system that would in theory be self-supporting. The U.S. and other donor countries will be more apt to escalate investments if issues that threaten the long-term success of REDD+ are addressed.



Photo credit: International Land Coalition

Commodity markets are arguably the biggest driver of global deforestation in Latin America and South East Asia, and the economic incentives currently provided by REDD+ may not be enough to combat demand for food, fuel, timber, and other forest products. In the future, it is essential that REDD+ activities occur alongside efforts that address **land use, land use change, and forestry (LULUCF)**. Increasing pressure on commodity markets from growing populations results in land conversion from forests to agricultural land for food and fuel and expanded legal and illegal logging for timber and other forest products. If demand for these products is not addressed, emissions from these industries will dwarf reductions achieved through REDD+. Projects could be threatened by leakage, the displacement of emissions to other areas, and permanence. Thus far land use, land use change, and forestry have not been adequately integrated into emissions reductions schemes such as the Kyoto Protocol, and their inclusion in the REDD+ discussion could increase the mechanism's efficacy and viability (Ellison et al., 2012). Emissions from LULUCF, leakage, and permanence should be discussed as the REDD+ mechanism progresses.

Recommendations

1. REDD+ can address the drivers of deforestation by integration of finance with food security aid and supporting yield efficiency and agroforestry. This would ensure that REDD+ is not displacing farmland, and further reduce land clearing, maximizing the amount of deforestation reduced.
2. U.S. REDD+ bilateral funding should be based on additional criteria. Instead of focusing on countries with higher GDP and technical capacity, the U.S. should fund countries, which need financing the most. By doing so, they would stand to gain the highest utility per dollar invested.
3. Reporting should be more transparent by linking finance specifically with its associated impacts and using clear and concise language. Currently, the U.S. does not link specific financing with its associated impacts, making it difficult to determine the outcomes of its investments.

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Acknowledgements

We would like to thank the following individuals for their advice and insight: Jonah Busch, Raymond Cléménçon, Cara Cummings, Jeff Jackson, Gabriella Klein, Jeff Metcalfe, John O. Niles, Ian Starr, and Cully Thomas. We also gratefully acknowledge the support of the ACE Group.



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Megan Byrn and Kate Ziemba went with Tropical Forest Group to UNFCCC COP18 conference in Doha, Qatar in November 2012.