BRIEF

CIF CLIMATE INVESTMENT FUNDS

Contract Design in Payments for Ecosystems Services (PES)

The African Development Bank (AfDB) is currently implementing the Gazetted Forests Participatory Management Project for REDD+ which aims to improve the carbon sequestration capacity of gazetted forests in Burkina Faso while reducing poverty in rural areas. The project is supported by the Climate Investment Funds' (CIF) Forest Investment Program (FIP), aimed at addressing the drivers of deforestation and forest degradation. CIF has partnered with the World Bank's Development Impact Evaluation Group (DIME) to analyze several key factors in project delivery, including the effective use of Payments for Ecosystem Services (PES).

COUNTRY Burkina Faso

PROJECT Gazetted Forests Participatory Management Project for REDD+

CIF FUNDING USD 11.5 million from FIP

MDB African Development Bank

PRODUCT TYPE Development Impact Evaluation (DIME)

COUNTRY CONTEXT

In Burkina Faso, a country with 48 percent arid forest cover, protecting forest resources and maximizing reforestation efforts are paramount. Forest-based economic activities contribute to over 25 percent of rural household income, as well as 5.6 percent of Gross Domestic Product (GDP)[1]. Forest ecosystems also provide food security and environmental protection.

THE IMPORTANCE OF PES

The government of Burkina Faso is implementing a forest

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1. *Burkina Faso CIF Investment Plan,* 2012, Page 10

investment plan which includes afforestation activities using PES as an incentive scheme. This involves inviting communities near selected forests to participate in afforestation campaigns, whereby they plant new trees and are offered a monetary reward conditional on the survival of those trees. The theory of change underpinning the scheme is that ecosystem services generate positive externalities, and therefore participants in such service provision need be compensated to the degree that generates socially desirable levels of outcomes. The compensation requires not only the planting of saplings but also the ensuring of their survival—because seedlings are mainly destroyed by wildfires and livestock grazing, reforestation efforts require the continued incentivization of vicinity communities to mitigate such effects.

PES are becoming increasingly popular in forest conservation programs and are viewed as an innovative and important tool that utilizes the timely delivery of conditional cash transfers as a potentially extremely effective response to both climate change and poverty. However, given that these arrangements are delivered collectively to communities or groups, rather than to individuals, collective action failure presents a threat to the effectiveness of the monetary incentives. The DIME evaluation sought to understand the extent to which alternative contract designs could mitigate such losses.

PUTTING PES CONTRACTS TO THE TEST

PES contracts are intended to maximize reforestation efforts in specific forest areas, but relatively little is known about the conditions of their effectiveness. To test the extent to which alternative contract design options could mitigate losses due to collective action problems, the project has designed and implemented two types of PES contracts: one using a linear payment and another using a threshold-based payment. Groups of five community members were enrolled in one of the two PES contracts with an objective to maintain new tree saplings planted at the beginning of the reforestation season. The linear payment contract paid the group USD 0.62 per tree surviving at the end of a designated time frame, with each member of the group receiving one fifth of the total income. The threshold payment contract paid the group a predetermined amount based on the number of trees living at the end of the designated time frame, with each member of the group receiving one fifth of the payment (USD 238 for 400 or more trees, USD 185 for 300 of more trees, or USD62 for less than 100 trees). Once designed, the PES contracts began implementation in August 2017, initially planting saplings on degraded land within gazetted forests. With a payment for every tree planted, this phase resulted in 33,547 trees planted by November 2017. At that point, groups formally signed either linear or threshold payment contracts to keep trees alive on a reforestation plot assigned to them via a random selection process. In total, contracts were being implemented in 33 sub-blocks of eleven major forests in Burkina Faso. The effectiveness of the contracts was assessed by measuring tree survival rates in two five-hectare reforestation plots within every sub-block, with one plot using the linear payment contract and the other using the threshold payment contract. Survival rates were measured during a verification mission in May 2018.

EARLY EVIDENCE

While the impact evaluation is still ongoing, early evidence is beginning to emerge, providing space to better understand and deliver future interventions. In the case of PES contract effectiveness, linear payments appear to outperform threshold payments both in terms of the absolute number and quality of surviving trees. A theoretical model had predicted that the threshold payments would outperform linear payments by addressing efficiency losses that could arise from asking a collective of individuals to care for an environmental resource that is not owned by any one member of the collective. As such, threshold payments were seen to have the potential to shift the nature of conservation from a possible collective action failure to a more cooperative effort. The findings of this study, however, seem to point in a different direction, raising new questions, and therefore new possibilities, on how best to distribute incentives and information—the evaluation team is currently working to better understand these. That there was no "bunching" of tree-counts around threshold markers implies that performance was not affected by participants aiming for a just-over-a-threshold number of trees, and this could have resulted from insufficient information, communities' inability to track the number of trees within their purview, or a weakness in the understanding of the

assured conditionally of payments. The existing data alone cannot yet yield any conclusive results, and the attribution of effects is still under study.

LOOKING AHEAD

The evaluation team will continue to analyze contract data to ascertain why linear payments outperformed threshold payments. These findings are important for the wider fight against climate change—as the international community begins to work toward submitting new Nationally Determined Contributions to the UNFCCC by 2020, as well as continuing existing work toward the Sustainable Development Goals, being able to draw from successful climate change projects will aid in designing more effective and multi-pronged projects. Examples, such as the one outlined here, that combine climate mitigation benefits, poverty reduction and increased food security will highlight how significant achievements can be made in the face of scarce international resources, and how they can be enhanced. Approaches proven to be successful will be key to designing climate-geared policy interventions that also maximize positive welfare outcomes

The evaluation is ongoing and is expected to be finalized at the end of 2019, with the full array of lessons shared in 2020-21.