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Building the evidence base for REDD+: Evaluating the impacts of conservation interventions on human welfare

Co-authors: Pamela Jagger, Kathleen Lawlor, Daniela Miteva, Subhrendu Pattanyak, William Sunderlin, Claudio De Sassi

Evaluating the social impacts of reducing emissions from deforestation and forest degradation (REDD+) projects and programs is fundamentally important the success of REDD+, but also a formidable challenge for policy makers and practitioners, due to cost, capacity and a number of other factors. Despite a shift in the international development landscape towards rigorous impact evaluation of development interventions the conservation community has been slow to adopt experimental or quasi-experimental methods for evaluating social impacts. The Global Comparative Study (GCS) on REDD+ led by the Center for International Forestry Research employed a quasi-experimental before-after-control-intervention (BACI) study design to evaluate the social impacts of REDD+ in 6 countries (Brazil, Cameroon, Indonesia, Peru, Tanzania and Vietnam), including a total of 16 REDD+ sub-national REDD+ initiatives. This paper reviews the process for designing the study and evaluates the effectiveness of pre-matching treatment and control villages to achieve a well matched (or balanced) sample of villages and households. Our aim is to demonstrate the effectiveness of such methods for designing a study with both high internal and external validity.

With information from in country field teams a set of roughly similar control and intervention candidate villages were identified prior to REDD+ implementation. Using categorical data for a number of variables hypothesized to influence REDD+ social impacts we undertook covariate matching to select a sample of villages for the baseline survey (N=128). Households were randomly selected from within study villages. The detailed village and household surveys implemented at baseline measured many other potential confounders, allowing both for matching and for other approaches for removing the effects of selection bias, e.g. through bias-corrected matching or inverse probability weighting. We are able to demonstrate, through analysis of baseline village and household-level data for common support for a wide range of variables; implying that overall study villages and households in the control group represent a counterfactual scenario to REDD+ implementation. While implementing a common methodology across 16 sites on three continents presented logistical challenges, it generated a sample that is both large and balanced enough to apply quasi-experimental methods such as matching with difference-in difference (DID) to estimate causal impacts.

The GCS experience belies many of the common critiques of the BACI approach as articulated by stakeholders including some of our implementing partners in the conservation and development community. With survey data from a sample carefully pre-matched to ensure overlap in nearly all confounders, we can determine which outcomes can be attributed to REDD+. The GCS demonstrates that it is possible to design such a sample and collect consistent data across different countries, different size villages, and different forest types. More broadly, our goal is to encourage the early planning and significant up-front investments required to confidently attribute outcomes to conservation interventions. The stakes are high, both for the global environment and for the typically low-income rural populations in the places where these interventions are targeted. The standards for evidence on those interventions should be concomitantly high.