L'ROE, JESSICA [S11-P43]

Mapping properties to monitor forests; lessons from the Rural Environmental Cadastre in Pará Brazil
Co-authors: Lisa Rausch (University of Wisconsin-Madison); Jacob Munger (University of Wisconsin-Madison); Holly Gibbs (University of Wisconsin-Madison)

Across the tropics, development banks and conservation donors are investing millions in property mapping and registration projects aiming to improve accountability for deforestation. This study presents an evaluation of deforestation and registration behavior in response to one of the largest of these initiatives– the Rural Environmental Cadastre (CAR) in the Amazonian state of Pará. From late 2007 to 2013, approximately 100,000 properties covering 30 million hectares of self-declared claims were registered into this digital database. We used fixed-effects regression models and property-level data to assess how registration influences land use on both small and large properties. Land registration had little impact on deforestation overall, except on properties at the larger end of the legal category of smallholders (100-300 ha). We link this response to policy, showing how an interaction between land regularization and forest protection policies made deforestation reductions uniquely worthwhile for this group. We also examined the size distribution of the self-declared property boundaries and looked for indications of strategic registration given that policy incentives differed by size class. We found evidence of threshold effects where property sizes fell more densely below cut-offs for certain policy benefits. While there is a robust literature examining forest outcomes of land regularization initiatives through their effects on tenure security (e.g. Robinson et al., 2015), few studies have assessed the effects of registration initiatives whose primary goals are to promote environmental monitoring rather than titling. Evaluating the effectiveness and accuracy of environmental cadastres provides timely information to those expanding these mapping programs in order to apply "carrots and sticks" to incentivize landowners to achieve desired environmental outcomes (Larson et al., 2013, Naughton-Treves and Wendland, 2014). Our study suggests that environmental cadastres have the potential to reduce deforestation under a combination of strong incentives and feasible requirements. However, in places where land tenure is still being negotiated environmental cadastre initiatives can interact with land user efforts to make and defend land claims, and if legitimacy of registrations is not addressed, the utility and efficacy of these environmental cadastres will be limited.