



Tropentag, September 16-18, 2015, Berlin, Germany

“Management of land use systems for enhanced food security:
conflicts, controversies and resolutions”

Effect of Social Capital on Land Allocation in Payment for Environmental Services Schemes under Individual and Collective Incentives

GRACIA MARIA LANZA CASTILLO, MIRIAM VORLAUFER, MEIKE WOLLNI

Georg-August-Universität Göttingen, Dept. of Agricultural Economics and Rural Development, Germany

Abstract

The expansion of oil palm plantations has been identified as one of the main drivers of deforestation in Indonesia. Conversion of forests and complex agroforestry systems, such as rubber agroforest, into pure oil palm stands has been associated with significant reductions in ecological functions. In order to slow down rapid transformation processes and reconcile some of the ecological functions, payments for environmental services (PES) have been suggested as a tool to incentivize the cultivation of rubber agroforest. In this study, we explore the effects of an external reward system on land use decisions using framed field experiments that we implemented in Jambi province in Indonesia. The scheme was framed as payments for environmental services that aim to foster environmentally friendly behavior associated with the cultivation of rubber agroforestry. In this framework, we compare two alternative PES schemes: an individual incentive scheme, where participants are offered a flat rate payment for each experimental land unit conserved, and a collective incentive scheme, where individuals only receive payments, if in the aggregate a pre-determined conservation threshold is passed. Under both treatments, participants were asked to allocate their experimental land units under three different scenarios: no incentives, low incentive payments and high incentive payments. Farmers were randomly matched into heterogeneous groups of three participants to account for heterogeneity in land endowments. After the experimental session, participants were asked to fill out a post-experimental questionnaire that included a social network module. This data allows us to explore the role of social networks in participants' responses to different types of incentives. Our results reveal that at the group level the allocation of experimental land units to rubber agroforest significantly increases in response to the introduction of incentives. At high incentive levels, this holds similarly for individual and collective incentives. At low incentive levels, however, the increase in agroforest is significant under the collective incentive scheme, but not under the individual incentive scheme. In addition, the magnitude of the marginal effect of introducing low payments under the collective incentive scheme is similar to the marginal effect of high payments under the individual incentive scheme. These results suggest that more sustainable land use options can more cost-effectively be introduced when relying on collective action dynamics within communities. When including social network characteristics, it was possible to identify the significant effect of the network size and the level of education of the share of land allocated to agroforestry. The education of the network has a positive effect on land allocation to jungle rubber.

Keywords: Framed field experiment, jungle rubber, payment for environmental services