

**Romero, Miriam;** University of Göttingen

mromero@gwdg.de

Authors: Miriam Romero; Katrin Rudolf; Meike Wollni. University of Göttingen

**Title: Tree planting adoption among oil palm farmers: the role of perceptions and intentions**



We address the question of how tree planting in oil palm plantations can be promoted among smallholder farmers and which psychological mechanisms mediate adoption. Guided by social-psychology theories we designed and implemented a randomized controlled trial (RCT) in Jambi Province, Indonesia, a global biodiversity hotspot. Land conversion is a major threat to biodiversity and deterioration of ecosystem functions, particularly the specialization in oil palm cultivation. This simplification to monoculture leads to a fragmentation of habitats and affects water availability, pollination success, soil fertility, and carbon storage, thus putting human well-being at risk. Indonesia is the largest worldwide palm oil producer and expansion is currently driven by smallholder farmers. Literature shows that regulating ecosystem functions in monoculture systems can be possible with biodiversity enrichment by planting trees. We test two environmental policies to promote tree planting. The first policy tries to close knowledge gaps by providing information about tree planting in oil palm plantations. The second policy tries to overcome missing access for seed material by additionally distributing saplings for free. We look at the causal effect of these two policies on the change of perceptions towards ecosystem functioning from tree planting in oil palm, intention to plant and actual adoption of tree planting. Data of perceptions and intention was collected right after the intervention. Actual tree planting adoption was collected six months later. Intent-to-treat effects indicate that both interventions have a positive and significant effect on these outcomes. In addition, we examine if perceptions and intention are mediators that help to explain the causal effects of the interventions on actual adoption. We employ a mediation analysis to observe this relation. Our results suggest that perceptions and intentions fully explain the effect of providing information and partially explain the effect of the additional sapling delivery for free on actual adoption. These findings indicate that overcoming structural barriers is critical to adoption of technology. Furthermore, these results provide evidence that psychological mechanisms, such as reflected in perceptions and intentions, are important channels to influence adoption decisions. In this way, we contribute to the design of policy instruments aiming at sustainable development.