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Promoting Trees at the Oil Palm Frontier: Experimental Evidence from Indonesia

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Abstract

Oil palms are expanding rapidly in Sumatra, Indonesia. Numerous studies have shown the negative environmental effects of the conversion of forests and formerly diverse agricultural landscapes into oil palm monocultures. To counteract the decline in ecosystem services and biodiversity, planting of native tree islands has been proposed. While the positive ecological effects are well documented, only few small-scale farmers in Sumatra enrich their plantations with native tree species. Identified adoption barriers consist both of a lack of knowledge about the benefits and the management of native trees in oil palm plantations and of structural obstacles like missing seed markets. Possible policy tools to overcome these barriers are informational and structural interventions.

The current study addresses the question of how the adoption of native trees can be promoted among small-scale oil palm farmers in Sumatra. To investigate the impact of informational and structural interventions on farmers' perceptions and actual adoption of native trees, we conducted a randomised controlled trial in 2016. We implemented two treatments: an information campaign and an additional provision of saplings to overcome missing markets for seed material. The information campaign consists of an extension session during which a movie was screened and an illustrative manual provided. Additionally, each participant of the session was provided with a selection of six native saplings in the structural intervention.

Our study covers 36 randomly selected oil palm growing villages, of which 12 were randomly assigned to receive the information campaign only and 12 to receive both the information campaign and the structural intervention. Survey data from 820 households was collected before and after the intervention. Additionally, data on actual tree planting behaviour was assembled during a follow-up in late 2016. Results show a positive effect of the information campaign on the perceived provision of ecosystem services by native trees and on the intention to plant trees in oil palm plantations. Stated demand for saplings is only higher among farmers who received saplings in addition to the information campaign. Analyzing the impact of the interventions on actual tree planting behaviour is still work in progress.

Keywords: Indonesia, informational intervention, oil palm, perception, randomisation, structural intervention, tree planting

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