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Action-Based versus Outcome-Based Payments for Environmental Services: An Experimental Auction for Tree Planting Contracts in Kenya

LUCIE ANDELTOVÁ¹, TOBIAS WÜNSCHER¹, KARIN HOLM-MÜLLER², ELSA CARDONA SANTOS²

¹*University of Bonn, Center for Development Research (ZEF), Germany*

²*University of Bonn, Institute for Food and Resource Economics, Germany*

Abstract

Theory predicts that outcome-based payments, relative to action-based payments offer more flexibility in the choice of relevant conservation actions, enhance the development and use of innovative approaches, and can improve landholders' intrinsic motivation for the actual conservation outcome. On the other hand, they are also associated with risk, which might prompt landholders to ask for higher payments. We assessed the various effects of the two payment types in a field experiment in rural Kenya, allocating tree planting contracts via a tender mechanism in two separate auctions for the action and outcome-based contracts. Conservation payments helped to overcome economic constraints of tree planting and did represent a direct incentive for better care taking. However, our results do not reveal significant differences between the two contract types in submitted bids, tree survival rates and the overall cost-effectiveness. Our data indicates strategic bidding behaviour to avoid translation of contract differences in risk and flexibility into detectible differences in bidding and to adversely affect the cost-effectiveness. Participatory approach of the study lead to very strong intrinsic motivation of all participants, which explains high tree survival rates independent of the contract type. This was further confirmed under the aspect of continuity. Strategic bidding behaviour resulting from information spillover within small communities is challenging and difficult to tackle by means of auction design. The largely positive effect of participatory approach on the intrinsic motivation has great implications for conservation efforts in general. Overall, the field experiment revealed the complexity of the payments for environmental services scheme going beyond the contract type or auction design.

Keywords: Action-based, conservation auction, cost-effectiveness, intrinsic motivation, outcome-based, participatory approach, payments for environmental services, strategic bidding