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The effects of information transfer related to grass strips technology on farmers’ preference for cropland management: Evidence from southern Ethiopia

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Abstract

Despite high potential, the adoption rates of conservation technologies are relatively low in the global south. Amongst others, this is caused by information constraints, inefficiency related to information flows and farmers’ resistance to accept conservation practices that are resource-demanding and competing for cropland. This study assesses farmers’ preferences for cropland management using grass strips technology, which is recognised as a cost-effective approach and examines the effects of information regarding grass strips on their preferences. We conducted a plot-level discrete choice experiment in two rounds by including an information treatment in a within-subject design using survey data from southern Ethiopia. We find that farmers prefer grass strips with higher conservation potential, planting by line strips and higher amounts of biomass for animal fodder to adopt on their cropland. In addition, the result showed that information transfer increases preferences for adopting grass strips with medium conservation potential and animal feedstock regardless of plots’ features. Furthermore, the effect of information on farmers’ preferences is heterogeneously moderated by plot features, namely land certification and a plot’s vulnerability to erosion. Specifically, it increases preferences for grass strips planting by line strips and on plots’ boundary, respectively for plots more-vulnerable to erosion and non-certified plots -implying a strong preference for grass under strong tenure security mainly for conservation purposes while opting for boundary delineation under weak tenure. We find heterogeneity in preference that is correlated with farmers’ risk attitudes and access to agricultural extension. Before information treatment, 85 % of sampled farmers are strong grass strips ‘adopters’ while 15 % of sampled farmers were grass strips ‘doubters’. The provision of information switched 8 % of total sample farmers from ‘technology doubter’ to the class of ‘technology adopter’. These finding highlights designing and implementing agricultural information dissemination systems under well-defined property rights might contribute to improving conservation technology adoption and thereby has the potential to enhance smallholders’ productivity and welfare in the Global South.

Keywords: Cropland management, grass strips technology, Information transfer, Plot-level discrete choice experiment, Preference heterogeneity , tenure security