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“Filling gaps and removing traps
for sustainable resource management”

Land Tenure Security, Soil Water Conservation Technology Adoption and Household Welfare Linkages in Nigeria

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Abstract

The challenges of climate change will exacerbate the problems of water availability for agricultural production especially in Nigeria where the predominant farming system is rain-fed. There are therefore, calls to promote soil water conservation (SWC) practices under the concept of ‘conservation agriculture’. Yet, lack of land tenure security may hinder its adoption and continuous usage. This study assessed the extent to which land tenure security affects the farming systems and welfare outcomes of rural smallholder farmers, through the adoption of SWC technologies in South Western region of Nigeria. In contrast to the existing literature on conservation adoption, the study differentiated between perceived and legal land tenure security and allows for joint use of different SWC technologies since these are not-mutually exclusive. 240 structured questionnaires were administered to head farmers in the study area. Using structural equation and double hurdle models, the study showed that land tenure security in terms of legal documentation induced the adoption of more expensive SWC practices such as controlled irrigation while perceived tenure security induced cheaper SWC technologies adoption. Based on combined adoption, tenant farmers tended to adopt several SWCT but the cheapest ones such as straw mulching on ridged land. The study further found that farmers who adopted more expensive SWCT, cropped their fields at least twice yearly. However, these were dependent on their crop choices. Given the same crop type, adopting SWCT increased cropping intensity, use of other inputs and gross margin of the farmers. On average, farmers with secure land tenure and SWCT adoption, had better welfare outcome in terms of per-capita expenditure. This study thus concluded that agricultural innovation adoption driven by land tenure security has the potential to improve the livelihood of smallholder farmers.

Keywords: Land tenure, Nigeria , soil water conservation, welfare