



Tropentag, September 9-11, 2020, virtual conference

“Food and nutrition security and its resilience
to global crises”

Farmers’ Adoption of Conservation Practices: Insights from Diverse Agro - Ecological Regions of Zambia

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Abstract

In recent years, high food insecurity, poverty and hunger are critical issues faced in Zambia due to recent declines in food crop yields which among other reasons is attributed to decline in agricultural soil fertility and climate variability. This study investigates the adoption of conservation agricultural practices among the smallholder farmers in distinct Agro ecological regions of Zambia. Using a questionnaire survey on 182 farmers from six districts representing three Agro ecological regions, descriptive analysis using chi square test was employed to assess the association of adopting tillage methods, soil protection practice and crop rotation. Results on minimum tillage indicates region I and III adopting more planting basins with 80 % and 54.1 % respectively, while region IIa adopts ripping more (78.7 %). Retaining crop residues was largely practised by all regions with region IIa leading (67 %) in cover crops. On average 85 % of smallholder farmers practice crop rotation across all the three ecological regions. The multiple linear regression model revealed that credit support, participation in group membership, soil protection reasons, increased yields, and perceived variability in precipitation are some of the factors influencing the adoption of multiple conservation practices. Extension services, farmer cooperatives, and conservation agriculture literature are found to be critical sources of information in promoting conservation practices. Increased yields, soil protection, reduced labour, and mitigation towards variability in precipitation are the main perceived benefits of adopting conservation practices. The barriers constitute lack of conservation tools, widespread of weeds, and pests. Improving accessibility to conservation mechanical services and implements, accessibility to conservation practices information tailored according to agro ecological preferences can increase adoption of conservation agriculture, promote sustainable use of resources and food security in Zambia.

Keywords: Adoption, agroecology, barriers, benefits, conservation practices, information sources, smallholder