

The farmers' perceptions and factors influencing adoption of no till Conservation Agriculture among beans and maize farmers in Lesotho

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INTRODUCTION

- Maize and beans are staple crops.
- Since the 1970s Lesotho's maize and bean production has dropped from an average of 1.5 to 0.50 Ton ha⁻¹ (Knoema, 2021).
- This is due to soil fertility depletion caused by:
 - Soil erosion (Sheet and rill).
 - Injudicious use of inorganic fertilizer and/or manure.
 - Years of conventional farming.
- The situation is exacerbated by recent climate change trends and future projection models (LMS, 2017).



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Introduction

- CA is an innovative tillage practice that may mitigate CF's effects on crop production.
- CA has three pillars:
 - Minimum soil disturbance
 - Permanent soil cover
 - Crop diversification (rotation/intercropping)
- CA boosts climate resilience, productivity, and rural livelihoods (Kolapo and Kolapo, 2023).
- Nonetheless, adoption is poor.



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Objective

To examine Lesotho bean and maize farmers' no-till CA attitudes and factors influencing adoption.



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Objective



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Objective



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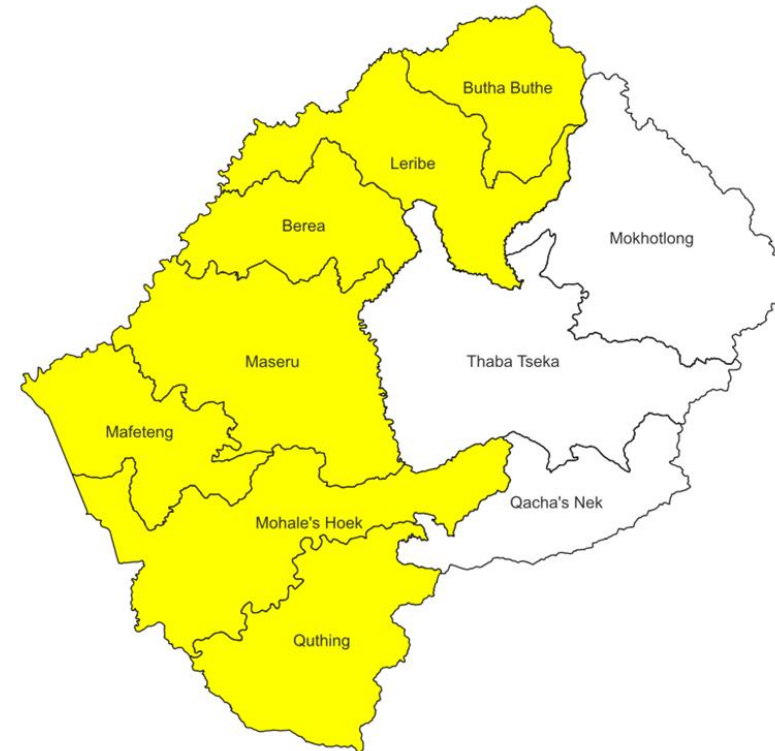
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Materials and Methods

Study Area

- The survey was undertaken in 7 districts of Lesotho.
- 63.69% of the national territory.
- Most productive and composing > 90% of the crop production area.
- The Interviews were conducted using Kobo tool.
- 807 people were interviewed

Study Area Map



Materials and Methods

- The research used a quantitative design (utilized numerical data); and was cross-sectional (data were collected at one point in time).
- The study uses the Cragg's Double Hurdle Model to analyse the study data to identify the factors affecting adoption and the level/intensity of adoption.
- The method is most appropriate for this study because a farmer faces two questions while deciding to adopt any adaptation strategy.
- First is to decide (i) whether a farmer adopts an adaptation strategy (a dichotomous choice) and (ii) the intensity of adoption of the adaptation strategy.
- But the first decision affects the second decision.



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Results

Variable	Odds	B	Wald	p-values
Gender	.631	-.460	7.242	.007**
Age	.998	-.002	.082	.775
Household Size	.957	-.044	1.663	.197
Education Level:				
Primary	4.480	1.500	4.026	.045**
Secondary	3.719	1.313	3.700	.054**
Certificate	3.067	1.121	2.747	.097*
Diploma	1.421	.351	.187	.665
Degree	2.301	.834	1.012	.314
Occupation	.865	-.145	.323	.570
Household Monthly Income:				
<1000	.370	-.995	4.384	.036**
1000-2000	.351	-1.048	4.588	.032**
2001-5000	.607	-.500	.855	.355

Source: APPSA CA survey 2022. Note: Results from Binary logit regression models with robust standard errors. Significance levels: *0.05; **0.01; ***0.001.

Results

Variable	Odds	B	Wald	p-values
Farming Experience:				
<5 years	.863	-.147	.314	.575
6-10 years	1.119	.113	.199	.656
11-20 years	1.114	.108	.235	.628
Yield Changes:				
No Change	.631	-.460	.557	.456
Increase	.996	-.004	.000	.986
Decrease	13.603	2.610	4.432	.035**
Field size(Acres)	.952	-.049	5.881	.015
Fertility	1.101	.096	.331	.565
Training on CA	.162	-1.818	87.869	.000***
Farming Group Member	.865	-.145	.602	.438
Extension Access	.973	-.028	.018	.895
Credit Access	.951	-.050	.030	.862
Promotion of CA	.367	-1.003	3.714	.054**

Source: APPSA CA survey 2022. Note: Results from Binary logit regression models with robust standard errors. Significance levels: *0.05; **0.01; ***0.001.

Conclusions and Recommendations

- Gender, education level, lower household income, decrease in yield, field size and training influence adoption of No Till CA .
- The study results are in harmony with other previous studies findings, which reported that these variables influence adoption of No Till.
- Extension officers have to be more effective in the study area so that they can influence adoption of CA.



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Thank you



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