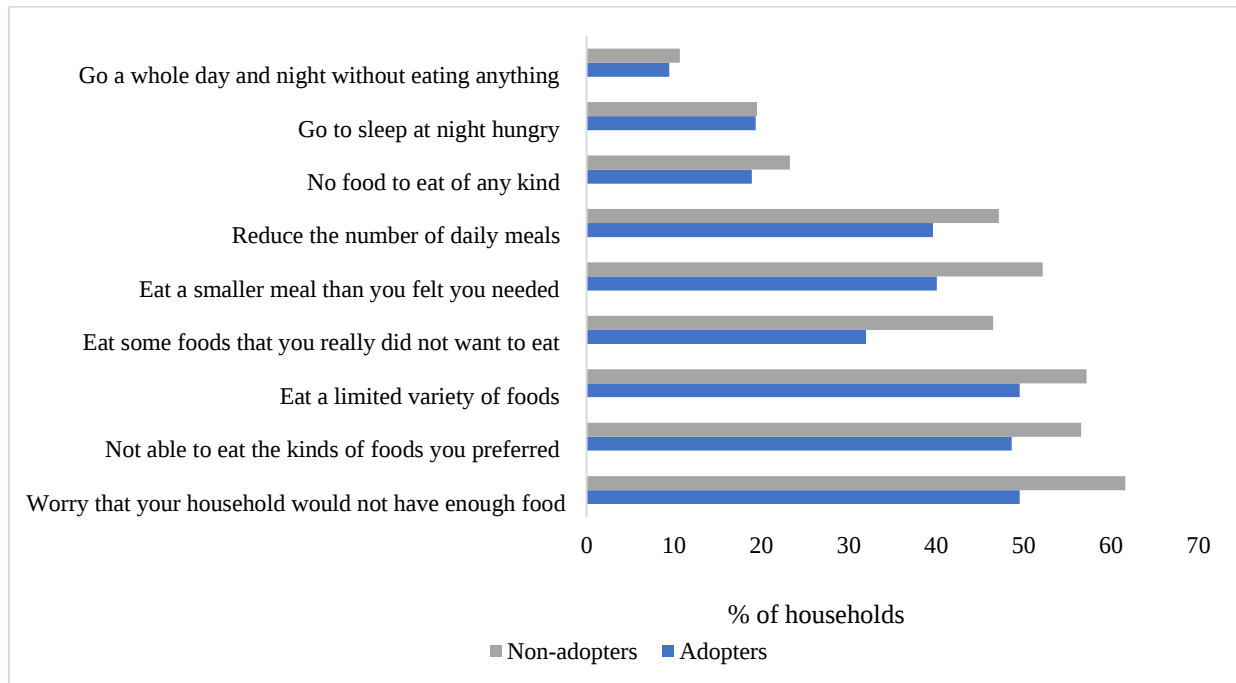


Appendix 1: CSA practices and descriptions

CSA practices	Description
Tree intercropping	Integrating trees and crops on the same land, commonly known as fertilizer tree intercropping (Sileshi et al., 2023)
Tied ridges	It is water and soil conservation methods to capture and retain moisture, where small basins slow water runoff, enhancing soil infiltration (Njeru et al., 2016)..
Contour farming	Plowing and planting crops and shrubs along land contours to minimize soil erosion (Kizito et al., 2022).
Chololo pits	Digging small circular pits on farmland to capture and store water (Kizito et al., 2022).
Manure application	Adding animal manure to the soil to improve soil fertility (Schaller et al., 2017).
Use of drought-tolerant seeds	Planting crop varieties that tolerate dry conditions and water stress (Martey et al., 2020).
Mineral fertilizers	Chemical fertilizers that supply essential nutrients, to crops in readily available forms to enhance soil fertility and improve agricultural productivity (Kurgat et al., 2020)

Appendix 2: Household Food Insecurity Access-related Conditions



Appendix 3: Results of kernel propensity score matching with bootstrapped standard errors

Outcome variable	ATT (Kernel PSM)	Bootstrapped SE	z	p-value	95% CI
HDDS	0.679**	0.272	2.49	0.013	[0.145, 1.212]
FCS	4.973**	1.950	2.55	0.011	[1.150, 8.795]
HFIAS	-1.802*	1.086	-1.66	0.067	[-3.931, 0.327]
rCSI	-2.105	1.436	-1.47	0.143	[-4.919, 0.709]
Annual farm income (USD)	131.420***	46.258	2.84	0.004	[40.756, 222.084]

Appendix 4: Ordinary least square (OLS) regression analysis result

Variables	Coefficient	Std. Err.	t-value	p-value	95% Conf. Interval
Intensity of adoption	0.103	0.031	3.30	0.001	[0.042, 0.165]
Intensity of adoption	-0.072	0.130	-0.55	0.580	[-0.328, 0.184]
Marital status	0.192	0.141	1.36	0.175	[-0.086, 0.470]
Household head age	0.001	0.003	0.22	0.824	[-0.006, 0.008]
Number of school years	0.009	0.007	1.27	0.204	[-0.005, 0.024]
Household size (number)	-0.144	0.095	-1.50	0.133	[-0.331, 0.044]
Livestock ownership	0.405	0.133	3.05	0.003	[0.144, 0.667]
Farm size (ha)	0.104	0.013	7.91	0.000	[0.078, 0.130]
Extension service availability	-0.009	0.112	-0.08	0.935	[-0.229, 0.210]
Market Distance (min)	-0.002	0.001	-1.34	0.181	[-0.004, 0.001]
Constant	4.705	0.275	17.13	0.000	[4.164, 5.245]
F(14, 348)	11.24				
Prob > F	0.0000				
R-squared	0.3189				
Number of obs	380				

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