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Appendix 1A: Regression results for dryland farms

Variable name	All farms	Mixed crop-livestock farms	Specialised crop farms
Winter temperature	-0.534	-0.350	-1.514**
Spring temperature	-0.562	-0.527	-0.389
Summer temperature	-0.058	0.350	-0.742
Fall temperature	1.173**	0.436	3.206***
Winter precipitation	0.035***	0.033***	0.045***
Spring precipitation	-0.025***	-0.024***	-0.034**
Summer precipitation	0.013***	0.016***	0.010
Fall precipitation	-0.001	-0.007	0.012
Winter precipitation squared	-0.000***	-0.000**	-0.000*
Spring precipitation squared	0.000***	0.000**	0.000**
Summer precipitation squared	-0.000	-0.000	0.000
Fall precipitation squared	0.000	0.000*	-0.000
Winter temperature squared	0.005	0.001	0.023*
Spring temperature squared	0.009	0.010	0.002
Summer temperature squared	-0.005	-0.011*	0.009
Fall temperature squared	-0.010	0.001	-0.042***
Orthic Ferralsols (foFU)	-0.244	-0.375	-0.056
Fluvisol (jcMFU)	1.096	1.005	-0.087
Ferric Luvisols (lfU)	-0.421**	-0.765***	0.176
Ferric Luvisols (lfCU)	0.383***	0.280*	0.794**
Cambic Arenosols (qc)	0.316	0.312	-0.097
Luvic Arenosol (qlCU)	0.519***	0.458***	1.485***
Chromic luvisols (lCU)	0.605***	0.694***	-3.133***
Farmland (ha)	0.656***	0.689***	0.581***
Mean water flow	0.009***	0.007***	0.019***
Household has tractor	0.431***	0.307*	0.958***
Household access to extension	0.143***	0.150**	0.174*
Household access to electricity (Yes/No)	0.202***	0.236***	0.074
Household size (Num. of people)	0.198***	0.146**	0.324***
Using irrigation (Yes/No)			
Mixed crop-livestock Yes/No)	0.420***		
Specialised crop (Yes/No)	0.566***		
North & East Africa (Yes/No)	-0.252	-0.555*	0.881*
Southern Africa (Yes/No)	-2.100***	-1.879***	-3.108***
Constant	5.021*	8.541***	-9.863*
R Square	0.5087	0.4457	0.6535
N	4303	3237	1010

Appendix 1B: Regression results for irrigated farms

Variable name	All farms	Mixed crop-livestock farms	Specialised crop farms
Winter temperature	-0.993**	-1.106**	-1.056
Spring temperature	1.028**	1.313***	0.626
Summer temperature	0.317	-0.476	-0.108
Fall temperature	-0.531	0.148	0.355
Winter precipitation	0.040***	0.037***	0.031
Spring precipitation	-0.036**	-0.003	0.012
Summer precipitation	0.043***	0.041***	-0.012
Fall precipitation	-0.016*	-0.012	0.022
Winter precipitation squared	-0.000	-0.000	0.000
Spring precipitation squared	0.000***	-0.000	-0.000
Summer precipitation squared	-0.000***	-0.000***	0.000
Fall precipitation squared	0.000***	0.000***	0.000
Winter temperature squared	0.007	0.008	0.002
Spring temperature squared	-0.010	-0.015**	0.003
Summer temperature squared	-0.015	-0.004	-0.006
Fall temperature squared	0.022	0.013	0.005
Orthic Ferralsols (foFU)	-1.185	-2.746	0.977
Fluvisol (jcMFU)	0.354*	0.313	0.988
Ferric Luvisols (lfU)	-4.117	-10.053**	
Ferric Luvisols (lfCU)	1.021***	0.868**	1.656*
Cambic Arenosols (qc)	0.689*	1.160***	-1.221
Luvic Arenosol (qlCU)	0.934***	0.768***	-0.820
Chromic luvisols (lCU)	-0.148	0.026	
Farmland (ha)	0.661***	0.649***	0.753***
Mean water flow	0.008*	0.005	0.035**
Household has tractor (Yes/No)	0.151	0.132	0.068
Household access to extension (Yes/No)	0.148*	0.200**	0.144
household access to electricity (Yes/No)	0.311**	0.307*	0.379
Household size (Num. of people)	0.236***	0.246**	0.195
Using irrigation (Yes/No)		0.000	
mixed crop-livestock (Yes/No)	0.607***		
Specialised crop (Yes/No)	0.873*		
North and East Africa (Yes/No)	0.545	0.521	1.666
Southern Africa (Yes/No)	-0.721	-1.176*	-0.209
Constant	5.461	4.938	4.351
R Square	0.5528	0.5422	0.6843
N	1304	1080	216

Appendix 2: Correlation analysis of continuous explanatory variables

	Winter-spring temp	Summer-fall temp	Winter-spring precip	Summer-fall precip	Head_age	Household_ size	Farming_ experience	Farm_size	Markets_ distance
Winter-spring temp	1								
Summer-fall temp	0.4769	1							
Winter-spring precip	-0.1036	-0.4638	1						
Summer-fall precip	0.2351	-0.2056	0.0809	1					
Head_age	-0.0174	0.0537	-0.0652	-0.0794	1				
Household_size	0.3136	0.3014	-0.199	0.0104	0.2504	1			
Farming_ experience	0.018	0.2114	-0.1975	-0.2294	0.3338	0.2509	1		
Farm_size	-0.0849	-0.0452	-0.0169	-0.0209	0.0033	-0.0007	-0.0087	1	
Markets_distance	0.0541	0.1203	-0.0704	-0.0111	-0.0924	0.0195	-0.0635	0.0016	1

Appendix 3: Variance inflation factor (VIF) test for multicollinearity

Variable	**VIF**
Summer-fall temp	4.92
Winter-spring precip	3.00
Winter-spring temp	2.97
Summer-fall precip	1.61
Farming experience	1.57
Access to electricity	1.52
Household head age	1.44
Distance to market	1.32
Household size	1.28
Own heavy machines	1.24
Access to extension	1.10
Male headed household	1.05
Access to credit	1.02
Farm size	1.02
Mean VIF	**1.79**

Appendix 4: Parameter estimates from the multinomial logit adaptation model

Variable	MLCRIRRIG	MLCRDRY	MOCRLSDR	MOCRLSIR	MLCRLSIR	MLCRLSDR
	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient	Coefficient
Winter-spring temp (°C)	-0.302***	0.142***	0.008	-0.405***	-0.286***	0.110**
Summer-fall temp (°C)	0.375***	-0.006	0.058	0.654***	0.314***	0.008
Winter-spring precip (mm)	-0.007	0.003*	0.013***	0.004	0.017***	0.014***
Summer-fall precip (mm)	0	0.003	0.006***	0.003	0.004*	0.005***
Extension contact (1/0)	1.240***	0.724***	0.056	0.779***	1.169***	0.695***
Access to credit (1/0)	0.792*	0.61**	0.054	0.062	0.867*	0.632*
Distance to market (km)	-0.007*	-0.001	0.003	-0.017***	-0.006**	-0.001
Male headed household (1/0)	1.554***	0.124	0.262	-0.566*	1.564***	0.217
Household head age (years)	-0.008	-0.005	0.001	-0.013	0.002	-0.001
Household size	0.231***	0.161***	0.065*	0.024	0.192***	0.157***
Farming experience (years)	0.024**	0.049***	0.021**	0.010	0.032***	0.046***
Farm size (ha)	-0.003*	0.001	0.001**	0.002	-0.005**	0.003
Own heavy machines (1/0)	1.232***	0.531**	0.193	0.391*	1.570***	0.533**
Access to electricity (1/0)	0.607**	-0.664***	-0.091	1.010***	0.399*	-0.547***
Constant	-6.728***	-4.102***	-2.685**	-6.468***	-5.208***	-3.161***
Number of observations	7327					
Wald $\chi^2(80)$	3975.07					
Prob > χ^2	0.0000					
Log pseudolikelihood	-8541.1862					
Pseudo R2	0.2888					

*; **; *** significant at 10%; 5% and 1% respectively

Note: MLCRIRRG: Multiple crops under irrigation; MLCRDRY: Multiple crops under dryland; MOCRLSDR: Mono crop-livestock under dryland; MOCRLSIR: Mono crop-livestock under irrigation; MLCRLSIR: Multiple crop-livestock under irrigation; MLCRLSDR: Multiple crop-livestock under dryland.