

Appendix A. Farmer classification as of banana management practices according to whether the practice is considered to be ancestral or introduced

Practice	Geographical region		
	Central	Eastern	South western
Soil fertility management practices			
Mulch with grass	Ancestral	Introduced	Ancestral
Mulch with crop residues	Ancestral	Ancestral	Ancestral
Kitchen residues	Ancestral	Ancestral	Ancestral
Cattle manure	Ancestral	Introduced	Ancestral
Goat manure	Ancestral	Introduced	Ancestral
Pig manure	Introduced	Introduced	Introduced
Poultry manure	Ancestral	Introduced	Ancestral
Composting	Introduced	Introduced	Introduced
Contour bands	Introduced	Introduced	Introduced
Water bands	Ancestral	Introduced	Introduced
Mat management			
Corm pare	Introduced	Introduced	Introduced
Hot water treatment	Introduced	Introduced	Introduced
Desuckering	Ancestral	Ancestral	Ancestral
Deleafing	Ancestral	Ancestral	Ancestral
Desheathing	Ancestral	Ancestral	Ancestral
Stamping	Ancestral	Ancestral	Ancestral
Chop pseudostem	Introduced	Not known	Introduced
Split pseudostem	Ancestral	Ancestral	Ancestral
Corm removal	Ancestral	Ancestral	Introduced
Weevil trapping	Introduced	Introduced	Introduced

Appendix B. Correlation matrix of explanatory variables used in the analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
Weevils	1																							
Altitude	-0.42																							
Aged	-0.05	-0.06																						
Gender	-0.10	0.02	0.06																					
Education	-0.18	-0.16	-0.27	0.14																				
Household size	0.07	-0.15	-0.02	0.01	0.06																			
Dependency ratio	0.04	0.07	0.13	-0.12	0.06	0.31																		
Livestock unit	-0.02	-0.01	0.12	-0.08	0.01	0.21	-0.09																	
Per capital land	0.12	-0.02	0.00	0.00	0.05	-0.04	0.04	0.15																
Experience	0.03	0.03	0.01	0.00	0.03	-0.07	0.11	0.05	0.01	0.01														
Number of mats	-0.26	0.10	0.04	0.07	-0.03	0.17	-0.03	0.15	0.07	0.12	0.18													
Distance (Km)	-0.68	-0.38	-0.04	-0.10	-0.24	0.05	0.02	0.01	0.18	0.08	-0.01	-0.14												
Price/wage ratio	0.60	0.29	-0.04	-0.04	0.09	-0.04	-0.02	-0.10	-0.18	-0.07	0.01	0.11	0.50											
Exogenous income	0.06	0.02	0.05	-0.02	0.08	0.10	0.01	-0.03	-0.01	0.01	0.02	-0.01	0.10	0.04										
Membership density	0.30	0.43	-0.15	0.04	0.03	0.28	-0.14	0.07	-0.01	-0.02	-0.07	0.11	0.36	-0.10	-0.01									
Leader heterogeneity	0.20	0.06	0.16	-0.03	0.09	0.14	-0.09	-0.09	0.12	-0.03	0.02	-0.13	0.11	-0.09	0.03	-0.13								
Norms decision make	0.26	0.49	0.12	0.05	0.21	0.05	0.01	-0.09	-0.16	0.01	0.01	0.09	0.30	-0.20	-0.05	-0.13	-0.27							
Cash transfers	0.11	0.06	0.06	-0.10	0.11	0.10	-0.12	-0.02	-0.07	0.05	-0.01	0.12	0.03	-0.05	-0.02	-0.13	0.01	-0.03						
Labour transfers	-0.13	-0.02	0.10	-0.04	-0.08	-0.02	0.01	0.00	0.24	-0.10	-0.04	-0.09	-0.08	0.11	0.00	0.05	-0.07	0.04	0.19					
Other transfers	-0.02	0.01	-0.02	-0.01	0.01	-0.04	-0.02	0.01	0.01	0.01	0.04	-0.07	0.05	-0.02	-0.01	0.01	0.03	0.08	-0.17	-0.08				
Slope of the farm	-0.22	-0.18	-0.06	0.05	-0.01	-0.11	-0.05	0.05	-0.01	-0.18	-0.04	-0.00	-0.02	-0.04	0.08	-0.03	0.01	-0.03	-0.07	0.11	0.06	0.01	0.08	
Moisture rent	0.12	-0.12	-0.01	-0.00	-0.00	-0.04	-0.00	-0.03	-0.00	-0.04	0.02	-0.04	-0.02	0.00	-0.09	0.08	-0.02	-0.10	0.02	-0.09	-0.00	-0.08	0.03	
Drainage conditions	0.16	0.11	-0.01	-0.01	0.11	0.02	0.06	-0.06	-0.06	-0.06	-0.01	0.06	-0.07	0.11	0.06	-0.12	0.10	0.04	0.08	-0.05	0.18	0.01	0.02	

## Appendix C. Estimation results of factors affecting use of improved banana management practices

### Appendix C.1. Probit estimation of factors affecting the probability of using mulching practices

Variable	dF/dx	Std. Err.	z	P>z
Household characteristics ( $\Omega_{HH}$ )				
Age	0.000	0.002	-0.23	0.821
Gender	-0.052	0.057	-0.9	0.368
Education	0.009	0.008	1.2	0.23
Household size	0.017	0.012	1.44	0.151
Dependency ratio	-0.216^	0.122	-1.76	0.078
Livestock unit	0.018	0.016	1.1E+00	0.257
Per capita cultivable land	0.052	0.032	1.61	0.107
Income from private assets	1.2E-06	1.6E-06	0.73	0.464
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.026	0.098	0.26	0.793
Poor drainage conditions	-0.023	0.057	-0.4	0.687
Moisture retention capacity	-0.138*	0.075	-1.96	0.05
Slope of the farm	0.037	0.070	0.55	0.583
Age of the banana plantation	-0.002	0.002	-0.7	0.486
Number of banana mats	0.0001*	0.0001	2.01	0.044
Market factors ( $\Omega_M$ )				
Distance from paved roads	-0.011*	0.005	-2.28	0.023
Price/labour wage ratio	3.080**	1.037	2.94	0.003
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.814**	0.160	4.99	0.000
Exposure	-0.017	0.068	-0.25	0.799
Extension contact	0.015	0.019	0.82	0.415
Social capital ( $\Omega_{SS}$ )				
Household membership density	0.021	0.036	0.59	0.552
Leader heterogeneity	0.057	5.1E-02	1.1E+00	0.261
Participatory decision-making norms	0.312**	7.9E-02	4.0E+00	0.000
Net labour transfers	-4.1E-06^	2.3E-06	-1.82+00	0.069
Net cash transfers	5.5E-07	4.8E-07	1.1E+00	0.255
Net transfers durables	3.4E-07	1.3E-06	0.27	0.79
Observed probability	6.99E-01			
Predicted probability	7.93E-01			
Number of observations	312			
LR chi2(25)	115.54			
Prob > chi2	0			
Pseudo R2	0.303			
Log likelihood =	-133.159			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

## Appendix C.2. Probit estimation of factors affecting the probability of using manure application

Variable	dF/dx	Std. Err.	z	P>z
Household characteristics ( $\Omega_{HH}$ )				
Age	-0.006*	0.002	-2.33	0.02
Gender	-0.024	0.072	-0.33	0.743
Education	0.008	0.009	0.88	0.378
Household size	0.018	0.015	1.2	0.228
Dependency ratio	-0.004	0.169	-0.03	0.98
Livestock unit	0.109**	0.022	4.89	0.000
Per capita cultivable land	0.023	0.022	1.06	0.288
Income from private assets	8.7E-07	1.47E-06	0.59	0.554
Physical farm characteristics ( $\Omega_F$ )				
Elevation	-0.036	0.123	-0.29	0.77
Poor drainage conditions	0.148*	0.074	1.99	0.047
Moisture retention capacity	0.071	0.087	0.83	0.408
Slope of the farm	-0.160^	0.086	-1.85	0.064
Age of the banana plantation	-0.003	0.003	-1.21	0.228
Number of banana mats	0.000	0.000	0.94	0.348
Market factors ( $\Omega_M$ )				
Distance from paved roads	-0.007	0.006	-1.22	0.224
Price/labour wage ratio	2.847*	1.261	2.26	0.024
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	1.280**	2.54E-01	5.07	0.000
Exposure	0.099	0.086	1.14	0.254
Extension contact	0.020	0.017	1.18	0.238
Social capital ( $\Omega_{SS}$ )				
Household membership density	0.047	0.045	1.04	0.297
Leader heterogeneity	0.205**	0.068	3.02	0.003
Participatory decision-making norms	0.261**	1.01E-01	2.57	0.01
Net labour transfers	2.41E-06	2.91E-06	0.83	0.408
Net cash transfers	6.55E-07	6.02E-07	1.09	0.276
Net transfers durables	4.0E-06**	1.58E-06	2.53	0.012
Observation. P	0.426			
Predicted.	0.413			
Number of observations	312			
LR chi2(25)	124			
Prob > chi2	0.000			
Pseudo R2	0.2913			
Log likelihood =	-150.860			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

## Appendix C.3. Probit estimation of factors affecting the probability of using desuckering

Variable	dF/dx	Std. Err.	Z	P>z
Household characteristics ( $\Omega_{HH}$ )				
Age	-0.004	0.003	-1.380	0.169
Gender	-0.157^	0.087	-1.800	0.072
Education	0.013	0.011	1.130	0.258
Household size	0.019	0.017	1.100	0.270
Dependency ratio	-0.031	0.196	-0.160	0.873
Livestock unit	-0.048*	0.025	-1.950	0.051
Per capita cultivable land	-0.002	0.020	-0.090	0.929
Income from private assets	6.8E-07	1.3E-06	0.510	0.612
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.851**	0.035	7.470	0.000
Poor drainage conditions	-0.026	0.093	-0.280	0.783
Moisture retention capacity	-0.076	0.112	-0.680	0.500
Slope of the farm	0.137	0.112	1.190	0.236
Age of the banana plantation	-0.003	0.004	-0.660	0.507
Number of banana mats	-5.7E-06	0.0002	-0.04	0.971
Market factors ( $\Omega_M$ )				
Distance from paved roads	-0.016*	0.008	-1.990	0.046
Price/labour wage ratio	3.143*	1.593	1.970	0.048
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.172^	0.097	1.780	0.076
Exposure	0.326**	0.096	3.200	0.001
Extension contact	-0.007	0.020	-0.320	0.750
Social capital ( $\Omega_{SS}$ )				
Household membership density	-0.075	0.053	-1.430	0.152
Leader heterogeneity	0.240**	0.074	3.240	0.001
Participatory decision-making norms	0.138	0.117	1.180	0.237
Net labour transfers	-2.4E-06	2.0E-06	-1.22	0.222
Net cash transfers	-2.4E-07	8.8E-07	-0.27	0.789
Net transfers durables	2.2E-07	1.6E-06	0.14	0.889
obs. P	0.433			
pred.	0.488			
Number of obs	312.000			
LR chi2(25)	210.210			
Prob > chi2	0.000			
Pseudo R2	0.493			
Log likelihood =	-108.322			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

Appendix C.4. Probit estimation of factors affecting the probability of using corm  
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Variable	dF/dx	Std. Err.	Z	P>z
Household characteristics ( $\Omega_{HH}$ )				
Age	-0.001	0.002	-0.730	0.466
Gender	0.004	0.047	0.100	0.924
Education	0.027*	0.007	3.990	0.000
Household size	0.013	0.010	1.270	0.202
Dependency ratio	0.006	0.110	0.060	0.953
Livestock unit	0.003	0.014	0.230	0.814
Per capita cultivable land	0.013	0.014	0.910	0.365
Income from private assets	-2.2E-07	7.9E-07	-0.28	0.782
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.215*	0.122	2.04	0.042
Poor drainage conditions	-0.082^	0.047	-1.66	0.098
Moisture retention capacity	0.054	0.061	0.93	0.353
Slope of the farm	-0.111^	0.070	-1.73	0.084
Age of the banana plantation	-0.002	0.002	-1.11	0.265
Number of banana mats	-8.2E-05	1.0E-7	-0.81	0.418
Market factors ( $\Omega_M$ )				
Distance from paved roads	0.016**	0.004	3.88	0.000
Price/labour wage ratio	2.939**	0.870	3.33	0.001
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.098*	0.049	1.99	0.047
Exposure	0.286**	0.061	4.81	0.000
Extension contact	0.016	0.012	1.28	0.202
Social capital ( $\Omega_{SS}$ )				
Household membership density	-0.036	0.035	-1.01	0.312
Leader heterogeneity	0.092*	0.048	1.94	0.052
Participatory decision-making norms				
Net labour transfers	-0.256**	0.063	-3.98	0.000
Net cash transfers	8.9E-07	1.35E-06	0.66	0.509
Net cash transfers	3.3E-07	5.59E-07	0.59	0.558
Net transfers durables	5.6E-07	9.53E-07	0.58	0.559
obs. P	0.229			
Pred.	0.145			
Number of obs	310.000			
LR chi2(25)	113.730			
Prob > chi2	0.000			
Pseudo R2	0.341			
Log likelihood =	-109.949			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

## Appendix C.5. Probit estimation of factors affecting the probability of using Post harvest residue management practices

Variable	dF/dx	Std. Err.	z	P>z
Household characteristics ( $\Omega_{HH}$ )				
Age	0.000	0.001	0.440	0.660
Gender	0.027	0.024	1.140	0.253
Education	0.008*	0.004	2.430	0.015
Household size	0.007	0.005	1.460	0.145
Dependency ratio	-0.029	0.053	-0.560	0.578
Livestock unit	-0.016)**	0.007	-2.690	0.007
Per capita cultivable land	0.041*	0.019	2.270	0.023
Income from private assets	-5.0E-07	4.93E-07	-1.06	0.291
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.093*	0.034	2.170	0.030
Poor drainage conditions	0.003	0.024	0.110	0.910
Moisture retention capacity	0.018	0.026	0.640	0.523
Slope of the farm	-0.015	0.028	-0.500	0.617
Age of the banana plantation	0.001	0.001	0.500	0.616
Number of banana mats	1.5E-06	4.2E-6	0.04	0.971
Market factors ( $\Omega_M$ )				
Distance from paved roads	-0.007**	0.002	-3.430	0.001
Price/labour wage ratio	0.885*	0.465	2.020	0.044
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.008	0.026	0.300	0.768
Exposure	0.014	0.028	0.500	0.617
Extension contact	0.007	0.007	0.950	0.344
Social capital ( $\Omega_{SS}$ )	0.004	0.016	0.240	0.811
Household membership density	0.005	0.022	0.200	0.840
Leader heterogeneity	0.041	0.031	1.400	0.161
Participatory decision-making norms	7.7E-07	6.7E-07	1.22	0.223
Net labour transfers	-5.5E-08	2.7E-07	-0.25	0.801
Net cash transfers	-4.9E-07	5.2E-07	-0.93	0.351
obs. P	0.850			
pred.	0.950			
Number of obs	341.000			
LR chi2(25)	89.200			
Prob > chi2	0.000			
Pseudo R2	0.310			
Log likelihood =	-99.283			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

Variable	Coefficient.	Std. Err.	t	P>t
Household characteristics ( $\Omega_{HH}$ )				
Age	0.000	0.001	-0.15	0.881
Gender	0.054 <sup>^</sup>	0.031	1.72	0.087
Education	0.009	0.004	2.15	0.033
Household size	0.007	0.007	1.06	0.291
Dependency ratio	0.134	0.084	1.6	0.112
Livestock unit	-1.0E-03	8.6E-03	-0.12	0.905
Per capita cultivable land	0.020*	0.009	2.24	0.026
Income from private assets	3.8E-07	5.0E-07	0.76	0.449
Physical farm characteristics ( $\Omega_F$ )				
Elevation	-0.111 <sup>^</sup>	0.062	-1.79	0.075
Poor drainage conditions	-0.011	0.034	-0.34	0.737
Moisture retention capacity	-0.001	0.043	-0.01	0.989
Slope of the farm	0.121**	0.038	3.19	0.002
Age of the banana plantation	0.000	0.001	0.39	0.696
Number of banana mats	-0.0001**	5.3E-05	-2.72	0.007
Market factors ( $\Omega_M$ )				
Distance from paved roads	0.003	0.003	1.17	0.244
Price/labour wage ratio	1.648**	0.571	2.89	0.004
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.037	0.103	0.36	0.721
Exposure	0.037	0.039	0.96	0.337
Extension contact	-0.004	0.007	-0.6	0.551
Social capital ( $\Omega_{SS}$ )				
Household membership density	4.5E-02*	1.84E-02	2.45	0.015
Leader heterogeneity	9.6E-02**	3.15E-02	3.06	0.003
Participatory decision-making norms	-2.8E-02	5.91E-02	-0.48	0.635
Net labour transfers	1.4E-06	8.81E-07	1.59	0.113
Net cash transfers	1.0E-08	2.72E-07	0.04	0.97
Net transfers durables	-6.1E-07	5.59E-07	-1.1	0.274
Millmuc	0.028	0.062121	0.45	0.653
_cons	-0.542	0.381	-1.43	0.156
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Number of observations	213			
F(26, 186)	5.380			
Prob > F	0.000			
R-squared	0.429			
Adj R-squared	0.349			

\*\* Significant at 1%, \* significant at 5%, <sup>^</sup> significant at 10 %



## Appendix C.7. Second stage Heckman regression of the extent of use of manure Application

Variable	Coefficient.	Std. Err.	t	P>t
Household characteristics ( $\Omega_{HH}$ )				
Age	-0.004 <sup>^</sup>	0.002	-1.83	0.071
Gender	-0.004	0.044	-0.09	0.932
Education	0.005	0.006	0.8	0.428
Household size	0.021 <sup>^</sup>	0.011	1.89	0.062
Dependency ratio	0.039	0.112	0.35	0.726
Livestock unit	0.068*	0.029	2.36	0.02
Per capita cultivable land	0.009	0.012	0.75	0.453
Income from private assets	1.7E-06**	5.7E-07	2.93	0.004
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.056	0.093	0.6	0.547
Poor drainage conditions	0.062	0.061	1.02	0.31
Moisture retention capacity	0.049	0.053	0.91	0.363
Slope of the farm	-0.077	0.064	-1.19	0.236
Age of the banana plantation	0.000	0.002	-0.12	0.903
Number of banana mats	-0.0002*	8.7E-05	-2.36	0.02
Market factors ( $\Omega_M$ )				
Distance from paved roads	0.002	0.004	0.49	0.624
Price/labour wage ratio	1.487	0.950	1.57	0.121
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.409	0.349	1.17	0.245
Exposure	0.147*	0.061	2.42	0.017
Extension contact	0.033**	0.012	2.83	0.006
Social capital ( $\Omega_{SS}$ )				
Household membership density	-0.027	0.028	-0.98	0.329
Leader heterogeneity	0.204**	0.068	3.02	0.003
Participatory decision-making norms				
Net labour transfers	5.1E-06**	1.8E-06	2.86	0.005
Net cash transfers	1.6E-07	3.7E-07	0.42	0.676
Net transfers durables	8.7E-07	1.4E-06	0.63	0.528
Millman	-0.268 <sup>^</sup>	0.143	-1.87	0.065
Constant	-1.224	0.742	-1.65	0.102
Number of obs	128			
F( 26, 101)	3.39			
Prob > F	0.00 <sup>^</sup>			
R-squared	0.466			
Adj R-squared	0.329			

\*\* Significant at 1%, \* significant at 5%, <sup>^</sup> significant at 10 %

## Appendix C.8. OLS Regression of the extent of use of Post harvest residue management practices

Variable	Coefficient.	Std. Err.	t	P>t
Household characteristics ( $\Omega_{HH}$ )				
Age	-0.003	0.002	-1.64	0.102
Gender	0.044	0.049	0.9	0.367
Education	0.013	0.007	1.99	0.047
Household size	0.015	0.011	1.41	0.159
Dependency ratio	-0.034	0.110	-0.31	0.756
Livestock unit	-0.014	0.016	-0.87	0.384
Per capita cultivable land	0.038**	0.014	2.7	0.007
Income from private assets	-1.8E-06	1.7E-06	-1.07	0.284
Physical farm characteristics ( $\Omega_F$ )				
Elevation	0.368**	0.084	4.4	0.000
Poor drainage conditions	0.033	0.051	0.66	0.51
Moisture retention capacity	0.016	0.057	0.28	0.78
Slope of the farm	0.173**	0.056	3.09	0.002
Age of the banana plantation	9.3E-05	8.3E-05	1.12	0.266
Number of banana mats	0.003	0.002	1.44	0.152
Market factors ( $\Omega_M$ )				
Distance from paved roads	-0.025**	0.004	-5.92	0.000
Price/labour wage ratio	3.118**	0.857	3.64	0.000
Information diffusion parameters ( $\Omega_D$ )				
Relative experience	0.230**	0.054	4.29	0.000
Exposure	0.012	0.059	0.21	0.833
Extension contact	0.005	0.012	0.45	0.654
Social capital ( $\Omega_{SS}$ )				
Household membership density	-0.040	0.030	-1.32	0.187
Leader heterogeneity	-0.016	0.050	-0.32	0.749
Participatory decision-making norms				
Net labour transfers	-0.009	0.073	-0.13	0.9
Net cash transfers	2.0E-06	2.1E-06	0.92	0.361
Net transfers durables	-3.1E-07	4.4E-07	-0.7	0.486
Net transfers durables	-1.1E-06	1.0E-06	-1.07	0.287
Mills ratio				
Constant	0.458	0.539	0.85	0.396
Number of obs				
	289			
F( 25, 263)				
	12.12			
Prob > F				
	0.000			
R-squared				
	0.535			
Adj R-squared				
	0.491			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

Appendix D.1. Probit estimation of the factors influencing membership in at least one associations

Variables	Marginal effects	Standard Errors	Z	P>z
Age of the household head	-0.006 <sup>^</sup>	0.007	-1.8	0.072
Number of household members below 15 years of age	-0.005	0.028	-0.29	0.775
Number of household members aged between 16 and 50 years of age	-0.088	0.058	-1.2	0.229
Number of household members aged above 50 years of age	-0.166	0.139	0.15	0.885
Gender of the household head	-0.167	0.147	-1.44	0.151
Education of the household head	0.035*	0.018	1.98	0.054
Landholding in 2001	0.049*	0.024	1.97	0.049
Livestock capital in 2001	0.063	0.049	1.43	0.152
Number of years in the village	0.002	0.004	0.54	0.588
Distance from home to nearest post office	-0.049	0.059	-0.71	0.48
Number of relatives	0.009	0.017	0.56	0.572
Farm production orientation	0.066	0.146	0.28	0.777
Number of NGOs operating in the village	-0.017	0.083	-0.06	0.952
Education heterogeneity in the village in 2001	-0.071	0.067	-1.34	0.181
Ethnic fragmentation in the village 2001	0.620	0.504	1.09	0.275
Observed probability	0.539			
Predicted probability	0.561			
Likelihood ratio chi sq (15)	26.15			
Probability chi sq	0.037			
Pseudo R2	0.213			
Log likelihood =	-48.34			

\*\* Significant at 1%, \* significant at 5%, ^ significant at 10 %

## Appendix D.2. Probit estimation of the factors influencing membership in social associations

Variables	Marginal Effects	Standard Errors	z	P>z
Age of the household head	-0.014*	0.006	-2.33	0.02
Number of household members below 15 years of age	0.028	0.024	1.44	0.15
Number of household members aged between 16 and 50 years of age	-0.121*	0.058	-2.23	0.026
Number of household members aged above 50 years of age	-0.014	0.140	-1.23	0.219
Gender of the household head	-0.315*	0.171	-1.98	0.047
Education of the household head	-0.001	0.015	-0.19	0.845
Landholding in 2001	0.030*	0.018	1.97	0.049
Livestock capital in 2001	0.073*	0.035	2.25	0.024
Number of years in the village	0.004	0.0040	0.62	0.538
Distance from home to nearest post office	-0.037	0.041	-0.93	0.351
Number of relatives	0.001	0.011	0.29	0.77
Farm production orientation	0.237*	0.099	1.99	0.046
Number of NGOs operating in the village	0.096	0.068	1.25	0.212
Education heterogeneity in the village in 2001	-0.055	0.059	-0.69	0.489
Ethnic fragmentation in the village 2001	1.042**	0.451	2.51	0.012
Observed probability	0.311			
Predicted probability	0.238			
Likelihood ratio chi sq (15)	31.7			
Probability chi sq	0.0071			
Pseudo R2	0.284			
Log likelihood =	-39.9505			

\*\* Significant at 1%, \* significant at 5%

Appendix D.3. Probit estimation of the factors influencing membership in  
Agricultural-oriented associations

Variables	Marginal effects	Standard Errors	z	P>z
Age of the household head	0.002	0.004	0.05	0.958
Number of household members below 15 years of age	0.021^	0.016	1.54	0.124
Number of household members aged between 16 and 50 years of age	-0.002	0.034	0.05	0.961
Number of household members aged above 50 years of age	-0.052	0.085	-0.23	0.816
Gender of the household head	0.043	0.079	0.56	0.575
Education of the household head	0.020^	0.011	1.66	0.097
Landholding in 2001	0.025	0.016	1.58	0.114
Livestock capital in 2001	-0.027	0.021	-1.36	0.175
Number of years in the village	-0.001	0.003	-0.7	0.482
Distance from home to nearest post office	-0.001	0.021	-0.05	0.961
Number of relatives	0.035**	0.012	2.94	0.003
Farm production orientation	0.165*	0.065	2.14	0.033
Number of NGOs operating in the village	0.009	0.059	0.25	0.804
Education heterogeneity in the village in 2001	0.024	0.045	0.83	0.404
Ethnic fragmentation in the village 2001	-0.486	0.314	-1.67	0.094
Observed probability	0.189			
Predicted probability	0.104			
Likelihood ratio chi sq (15)	33.92			
Probability chi sq	0.0035			
Pseudo R2	0.3889			
Log likelihood =	-26.652743			

\*\* Significant at 1%, \* significant at 5% and ^ significant at 10%.

## Appendix D.4. Probit estimation of the factors influencing membership in revolving saving and credit association

Variables	Marginal effects	Standard Errors	z	P>z
Age of the household head	-0.005*	0.002	-2.16	0.031
Number of household members below 15 years of age	-0.010	0.011	-0.66	0.508
Number of household members aged between 16 and 50 years of age	-0.022	0.019	-1.42	0.156
Number of household members aged above 50 years of age	0.037	0.046	1.26	0.208
Gender of the household head	-0.062	0.081	-1	0.318
Education of the household head	0.015**	0.008	1.97	0.049
Landholding in 2001	0.002	0.006	0.41	0.682
Livestock capital in 2001	0.019*	0.010	1.88	0.061
Number of years in the village	-0.001	0.002	-1.31	0.191
Distance from home to nearest post office	0.002	0.007	0.47	0.638
Number of relatives	-0.001	0.004	0.09	0.924
Farm production orientation	0.084^	0.044	1.8	0.071
Number of NGOs operating in the village	0.056*	0.031	2.13	0.033
Education heterogeneity in the village in 2001	0.049*	0.031	2.25	0.025
Ethnic fragmentation in the village 2001	-0.098	0.194	-0.61	0.54
Observed probability	0.144			
Predicted probability	0.038			
Likelihood ratio chi sq (15)	22.04			
Probability chi sq	0.1067			
Pseudo R2	0.297			
Log likelihood =	-26.14			

\*\* Significant at 1%, \* significant at 5% and ^ significant at 10%.

## Appendix D.5. Poisson estimation of factors affecting the intensity of membership in associations at the household level

Variable	Coefficient			
	.	Std. Err.	z	P>z
Age of household head	-0.029**	0.014	-2.8	0.005
Number of household members below 15 years of age	0.023	0.047	0.17	0.868
Number of household members aged between 16 and 50 years of age	-0.097	0.107	-0.98	0.325
Number of household members aged above 50 years	0.090	0.293	0.14	0.892
Gender of household head	-0.357	0.308	-1.14	0.253
Education of household head	0.075**	0.0307	2.7	0.007
Landholding in 2001	0.063*	0.034	1.99	0.047
Livestock capital in 2001	0.034	0.047	0.87	0.383
Number of years in the village	0.001	0.009	0.17	0.864
Distance from home to nearest post office	-0.182	0.158	-1.2	0.229
Number of relatives	0.027*	0.014	1.94	0.053
Farm production orientation	0.430	0.262	1.6	0.11
Number of NGOs operating in the village	0.191	0.151	1.21	0.226
Educational heterogeneity in the village in 2001	-0.301*	0.138	-2.48	0.013
Ethnic fragmentation in the village 2001	-0.551	0.803	-0.62	0.538
_Constant	1.960	1.006	2.2	0.028
Number of observations	90			
LR chi sq (15)	76.19			
Probability chi sq	0.00			
Pseudo R2	0.247			
Log likelihood	-116.300			

## Appendix D.6. Negative binomial estimation of factors affecting the intensity of private social networks at the household level

Variable	Coefficient.	Std. Err.	z	P>z
Age of household head	-0.002	0.008	0.2	0.844
Number of household members below 15 years of age	-0.058*	0.033	-2.34	0.019
Number of household members aged between 16 and 50 years of age	0.107	0.073	1.09	0.275
Number of household members aged above 50 years	0.302**	0.176	2.67	0.007
Gender of household head	0.211	0.183	1.26	0.207
Education of household head	0.103**	0.021	5.32	0
Landholding in 2001	-0.019	0.025	-0.61	0.544
Livestock capital in 2001	-0.048	0.035	-1.48	0.139
Number of years in the village	-0.004	0.005	-0.34	0.737
Distance from home to nearest post office	-0.014	0.029	-0.27	0.789
Number of relatives	0.007	0.012	0.39	0.696
Farm production orientation	0.246^	0.171	1.79	0.073
Number of NGOs operating in the village	-0.060	0.107	-0.88	0.376
Educational heterogeneity in the village in 2001	-0.397**	0.085	-4.87	0.000
Ethnic fragmentation in the village 2001	-0.269	0.593	-0.06	0.951
<u>Constant</u>	<u>3.784**</u>	<u>0.624</u>	<u>6.07</u>	<u>0</u>
Number of observations	89			
LR chi sq (15)	46.11			
Probability chi sq	0.0001			
Pseudo R2	0.067			
Log likelihood	-341.090			
Likelihood-ratio test of alpha=0 Chi sq 2(01)	0.000			