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Appendices

Appendix 1: Poverty Head Count Trends in Uganda, 1992/93 and 1999/2000 (Proportion of the population living below the poverty line)

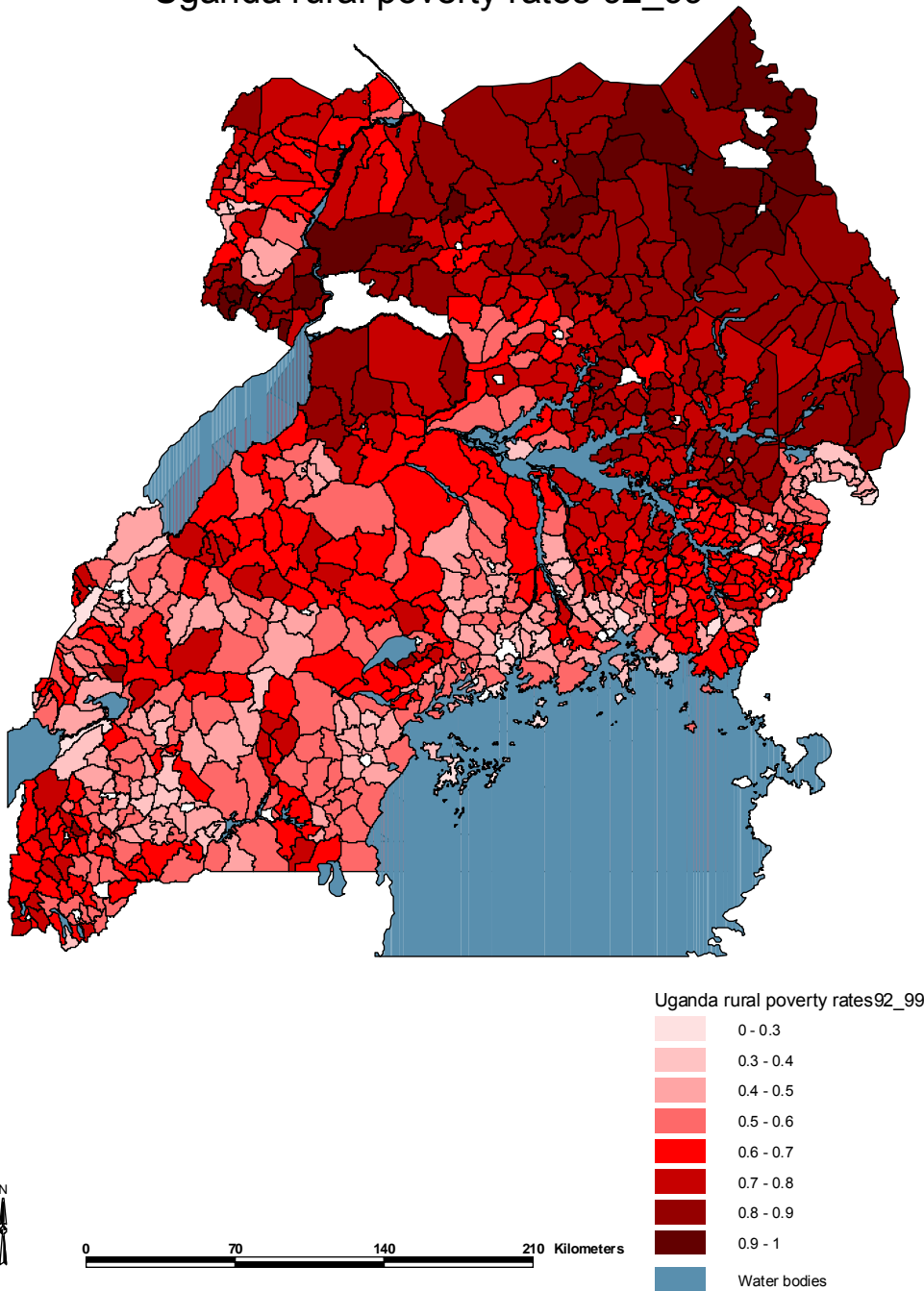
	1992/93	93/94	94/95	95/96	96/97	1999/2000	2002/03
National	55.5	52.2	50.1	48.5	44.0	35.2	37.7
Rural	59.4	56.7	54.0	53.0	48.2	39.1	41.1
Urban	28.2	20.6	22.3	19.5	16.3	10.3	12.2
Central	45.5	35.6	30.5	30.1	27.7	20.3	22.3
Central-Rural	52.8	43.4	35.9	37.1	34.3	25.7	27.6
Central-Urban	21.5	14.2	14.6	14.5	11.5	7.4	7.8
Eastern	59.2	58.0	64.9	57.5	54.3	36.5	46.0
Eastern-Rural	61.1	60.2	66.8	59.4	56.8	38.4	48.3
Eastern-Urban	40.6	30.5	41.5	31.8	24.8	15.7	17.9
Northern	71.3	69.2	63.5	68.0	58.8	65.8	63.6
Northern-Rural	72.2	70.9	65.1	70.3	60.7	67.7	65.0
Northern-Urban	52.6	46.2	39.8	39.6	32.6	30.6	38.9
Western	52.8	56.0	50.4	46.7	42.0	28.1	31.4
Western-Rural	53.8	57.4	51.6	48.3	43.2	29.5	34.3
Western-Urban	29.7	24.9	25.4	16.2	19.9	5.6	18.6

Source: Appleton, 2001 and Appleton and Ssewanyana, 2003.

Appendix 2: Absolute poverty lines by region/place of residence [In real terms (1997=100) per adult equivalent]

Region	Mean
National	21,409.49
Rural	
Urban	
Central rural	21,322.23
Central urban	23,149.64
Eastern rural	20,651.86
Eastern urban	22,125.24
Northern rural	20,871.98
Northern urban	21,799.82
Western rural	20,308.17
Western urban	21,625.72

Uganda rural poverty rates 92_99



Appendix 3: Map showing rural poverty in Uganda

Source: Birungi *et al.*, 2006

Appendix 4: Indices and Measures of Poverty

In this section, the Foster-Greer-Thorbecke (FGT) poverty measures (Foster-Greer-Thorbecke, 1984) are discussed. The FGT indices for poverty measurements are the most commonly used in the literature. The welfare indicators measured by the conventional measures FGT (α) are given by equation 1. We report our estimates with p-values of 0 and 1 reflecting respectively poverty incidence, and poverty gap.

These poverty measures can be expressed as follows:

$$P_{\alpha} = \frac{1}{N} \sum_{i=1}^M \left[\frac{(z - y_i)}{z} \right]^{\alpha} \quad (1)$$

Where

- z is the poverty line
- y_i is income (or expenditure) of person i in a poor household
- N is the number of people in the population,
- M is the number of people in poor households

Different values of α in equation 1 give different poverty measures. When $\alpha = 0$, this formula gives the incidence of poverty or commonly referred to as the head count index. It reflects the proportion of the population of the people lying below the poverty line. This is because the term in brackets is always one, so the summation gives us the total number of people in poor households, which, when divided by N, gives us the proportion of people living in poor households. This measure is however indifferent to the extent of poverty of the poor.

Alternatively, when $\alpha = 1$, it gives a measure called the depth of poverty (or the poverty gap). P_1 takes into account not just how many people are poor, but how poor they are on average. It is equal to the head count index (P_0) multiplied by the poverty gap ratio. This index gives a good measure of the extent or intensity of poverty as it reflects how far the poor are from the poverty line. It can therefore be used to calculate the amount of income under perfect targeting that needs to be transferred to the poor in order to eradicate poverty. However the poverty gap ratio is insensitive to income distribution among the poor.

Appendix 5: Coefficients for the MNL for Land Management technologies

Variable	Fallow		Organic Fert		Inorganic Fert		Terracing		Terracing+SFM	
	Coefficient	P-Level	Coefficient	P-Level	Coefficient	P-Level	Coefficient	P-Level	Coefficient	P-Level
Sex	0.7332***	0.0000	0.3375	0.1060	-0.6018*	0.0710	1.6857***	0.0040	0.2802	0.2170
Bequeath	0.3691**	0.0260	0.8264***	0.0010	-0.4394	0.1030	0.2935	0.3030	0.1409	0.5910
Dist Res	0.0189	0.3610	-0.6020***	0.0020	0.0542***	0.0020	0.0116	0.5390	0.0186	0.2640
Dist MKT	0.0627***	0.0060	0.0167	0.6130	-0.2494***	0.0020	0.0247	0.5340	0.0936***	0.0000
Nutrient prob.	0.1891	0.1270	0.1646	0.2830	-0.2495	0.3150	-0.1150	0.6360	-0.1989	0.3440
Non-farm inc.	0.2527***	0.0000	-0.1735*	0.0570	-0.4028***	0.0040	-1.9036***	0.0040	-0.7792**	0.0280
Agric extension	0.0744	0.6130	0.1841	0.2870	0.8266***	0.0020	0.4808**	0.0630	-0.3181	0.2610
Age of hh head	0.0116**	0.0300	-0.0093	0.1500	-0.0340**	0.0120	-0.0110	0.2270	0.0093	0.4410
Educ of hh head	0.0026	0.9060	0.0099	0.6790	-0.0333	0.3130	-0.0625**	0.0960	0.0285	0.4950
Hh size	-0.0592**	0.0440	0.1007***	0.0060	0.3160***	0.0000	0.0465	0.4050	-0.0258	0.6880
Poverty	1.1264**	0.0490	-2.2153***	0.0010	-5.0289***	0.0000	-0.2077	0.8220	-1.4784	0.1420
Livestock	-0.0060	0.6630	-0.0135	0.4340	-0.0159	0.6700	0.0259**	0.0310	-0.0178	0.3350
Number of parc	0.1456***	0.0000	-0.0613**	0.0480	0.1491***	0.0000	0.1876***	0.0000	0.1722***	0.0000
Agro-climate	-1.6964***	0.0000	0.1963	0.5050	-3.1552***	0.0000	0.9394	0.1240	-0.7580*	0.0520
Mambo. to pdn org	0.2959**	0.0380	0.0111	0.9500	0.5702**	0.0360	0.5471**	0.0300	-0.0669	0.7750
Constant	-2.8562***	0.0000	-1.3879**	0.0420	2.4853**	0.0370	-5.4611***	0.0000	-2.3167**	0.0210

Number of obs =2110; LR chi2 (75) =661.02; Prob > chi2=0.0000; Log likelihood = -2378.99; Pseudo R2 = 0.1290

SFM = Soil Fertility Management; Non-adopters are used as the base category. *, **, and *** represent the level of significance at 10, 5 and 1 percent respectively

Appendix 6: Second Stage Determinants of Poverty by group membership

Variable	Model 1=membership in production institutions				Model 2=membership in Social service institutions			
	2SPLS		2SPLS with Bootstrapped errors		2SPLS		2SPLS with Bootstrapped errors	
	Coef.	P-level	Coef.	P-level	Coef.	P-level	Coef.	P-level
Social capital	1.4167*	0.0520	1.4167*	0.0520	-0.4771***	0.0000	-0.4771***	0.0000
Education	0.0339	0.7590	0.0339	0.7670	0.1967***	0.0000	0.1967***	0.0000
HH-size	-0.3816***	0.0000	-0.3816***	0.0000	-0.4080***	0.0000	-0.4080***	0.0000
HH-age	0.3643***	0.0000	0.3643***	0.0000	0.4194***	0.0000	0.4194***	0.0000
Dist S. Road	-0.0177*	0.0690	-0.0177	0.1560	-0.0022	0.8410	-0.0022	0.8580
Non-Farm Inc.	-0.0063	0.6930	-0.0063	0.6570	0.0129	0.1640	0.0129	0.2180
Livestock	-0.0114	0.6890	-0.0114	0.6950	0.0270***	0.0090	0.0270**	0.0150
Sex	0.1375	0.1420	0.1375	0.1990	0.0742	0.1430	0.0742	0.1660
Agro-ecology	0.1928***	0.0000	0.1928***	0.0000	0.1943***	0.0000	0.1943***	0.0000
Extension	0.0905***	0.0040	0.0905**	0.0140	0.0918***	0.0030	0.0918**	0.0120
Farm size	0.0219***	0.0090	0.0219***	0.0030	0.0194**	0.0200	0.0194**	0.0100
Origin of ins.	-0.0118	0.7130	-0.0118	0.6980	0.0064	0.8430	0.0064	0.8420
Constant	8.3050***	0.0000	8.3050***	0.0000	8.6353***	0.0000	8.6353***	0.0000
Regression Diagnostics								
Number of Obs.		1695		1695		1695		1695
R-Squared		0.1577		0.1577		0.1619		0.1619
Prob > F/ Prob > Chi2		0.0000		0.0000		0.0000		0.0000
Replications		-----		100		-----		100

Notes: *, **, and *** represent the level of significance at 10, 5 and 1 percent respectively

Appendix 7: Second Stage determinants of group participation by group type

Variable	Model 1=membership in production institutions				Model 2=membership in social service institutions			
	2SPLS		2SCML		2SPLS		2SCML	
	Coef.	P-level	Coef.	P-level	Coef.	P-level	Coef.	P-level
HH-Expend	0.0945	0.5560	0.0944	0.5570	1.1305***	0.0000	1.1312***	0.0000
Education	0.4392***	0.0000	0.4369***	0.0000	-0.5880***	0.0000	-0.5895***	0.0000
HH-age	-0.0937	0.4280	-0.0924	0.4340	0.1166	0.3110	0.1175	0.3080
Non-Farm Inc.	0.0525**	0.0120	0.0527**	0.0110	-0.0666***	0.0020	-0.0666***	0.0020
Livestock	0.1141***	0.0000	0.1143***	0.0000	-0.1192***	0.0000	-0.1194***	0.0000
Sex	-0.2466**	0.0280	-0.2550**	0.0230	0.6847***	0.0000	0.6807***	0.0000
Extension	-0.0700	0.3270	-0.0687	0.3360	0.0292	0.6820	0.0299	0.6750
Ethnic Dom	0.2667	0.3270	0.2728	0.3170	-0.7324***	0.0060	-0.7352***	0.0060
Dist S. Road	-0.0153	0.4690	-0.0152	0.4710	0.1697***	0.0000	0.1698***	0.0000
Marital status	0.0595	0.1840	0.0536	0.2360	-0.0222	0.6210	-0.0251	0.5810
Constant	-1.8659	0.2110	-1.8498	0.2150	-11.0240***	0.0000	-11.0190***	0.0000
Regression Diagnostics								
Number of Obs		1695		1695		1695		1695
Log likelihood		-1025.9702		-1025.5606		-1017.405		-1017.3231
LR chi2(10)		118.10		118.92		204.15		204.32
Prob > chi2		0.0000		0.0000		0.0000		0.0000
Wald Test of exogeneity								
Chi2(1)				0.06				42.09
Prob > chi2				0.8009				0.0000

Notes: *, **, and *** represent the level of significance at 10, 5 and 1 percent respectively