

APPENDIX 1. An example household characterization file, used as input into the DECUMA model. AE is adult equivalents, used to standardize humans of different age and sex into a single metric. Ksh is Kenyan shillings.

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11          // Household ID
306267     // XUTM of permanent householda
9743524    // YUTM of permanent householda
7          // Number of people <= 5 years old
4          // Number of people 6 to 12 years old
0          // Number of MALES 13 to 17 years old
1          // Number of FEMALES 13 to 17 years old
3          // Number of MALES older than 17
4          // Number of FEMALES older than 17
81         // Number of females of CATTLE
55         // Number of males of CATTLE
108        // Number of females of GOATS
42         // Number of males of GOATS
202        // Number of females of SHEEP
38         // Number of males of SHEEP
0.81       // Hectares of rainfed agriculture of MAIZE
0.81       // Hectares of rainfed agriculture of BEANS
0          // Hectares of rainfed agriculture of CASH CROPS
0          // Hectares of irrigated agriculture of MAIZE
0          // Hectares of irrigated agriculture of BEANS
0          // Hectares of irrigated agriculture of CASH CROPS
0          // Hectares of Loitokitok agriculture of MAIZEb
0          // Hectares of Loitokitok agriculture of BEANSb
0          // Hectares of Loitokitok agriculture of CASH CROPSb
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0          // Income from wages (Ksh/AE/month)
13333, 13333, 13333, 13333, 13333, 13333, 13333, 13333, 13333, 13333, 13333, 13337 (cont.)
// Income from livestock trading (Ksh)
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0          // Income from other businesses (Ksh)

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0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	// Income from government subsidies (Ksh) ^c
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	// Income from government leases (Ksh) ^c
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	// Income from remittances (Ksh) ^c
0.8, 0.8, 1.5, 1.5, 1.5, 0.8, 0.8, 0.8, 0.8, 0.8, 1.4, 1.4	// Milk produced (kg/cow/day)
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0	// Milk sold (%)
506, 506, 506, 506, 506, 506, 506, 506, 506, 506, 506, 512	(cont.) // Expenses, food, tea and sugar (Ksh/AE/month)
716, 50, 50, 716, 50, 50, 50, 50, 50, 718, 50, 56	// Expenses, general expenses, school fees (Ksh/month)
650, 650, 650, 650, 650, 650, 650, 650, 650, 650, 650, 650, 650	// Expenses, crop inputs (Ksh/month)
1541, 1541, 1541, 1541, 1541, 1541, 1541, 1541, 1541, 1541, 1541, 1544	(cont.) // Expenses, veterinary inputs (Ksh/month)
0, 1, 1, 1, 1, 1, 2, 0, 0, 0, 0, 0, 0	// Maize harvest flag, 1=PPT counts, 2=Harvest ^d
0, 1, 1, 1, 1, 1, 2, 0, 0, 0, 0, 0, 0	// Beans harvest flag, 1=PPT counts, 2=Harvest ^d
1, 1, 1, 1, 1, 2, 1, 1, 1, 1, 1, 2	// Other harvest flag, 1=PPT counts, 2=Harvest ^d
0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050, 0.0050	(cont.) // Probability of opportunistic slaughter
0	// Initial monetary holdings (Ksh) ^c
0	// Initial debt (Ksh) ^c
0	// Initial assets (Ksh) ^c
38	// Initial age of household head
2	// Regional area ^e

a – UTM coordinates were altered to disguise household identity.

b – Loitokitok cultivation is rainfed, but in the higher rainfall areas on the slopes of Mount Kilimanjaro.

c – These parameters are placeholders for future applications. They were either unavailable or zero for all households in the current application.

d – Flags may be 2, meaning the crop is harvested that month, 0, with no effect, or 1, which indicates that precipitation in that month should be used in calculating the total yield from the plot.

e – One of seven regions into which the study area was divided.