APPENDIX 2. The primary parameter file that provides metrics used in the DECUMA file that are common across all households. AE is adult equivalents, used to standardize humans of different age and sex into a single metric. Ksh is Kenyan shillings.

```
6       // Number of human adult equivalent categories
0.52            //  < 5 years - Adult equivalents
0.85            // 6 - 12 years - Adult equivalents
0.96            // 13 - 17 years, males - Adult equivalents
0.96            // 13 - 17 years, females - Adult equivalents
1.00            // > 17 years, males - Adult equivalents
0.86            // > 17 years, females - Adult equivalents
5       // Number of food types with calories
830             // Milk calorie count (kcal/kg)
1720            // Meat calorie count (kcal/kg)
500             // Non-maize calorie count (kcal/kg)
3700            // Maize calorie count (kcal/kg)
3950            // Sugar and other rich foods (kcal/kg)
6       // Number of calories (kilo-calories) required by human age/sex class.
1720            // 2 - 6 years - Adult equivalents
1720            // 7 - 12 years - Adult equivalents
1943            // 13 - 17 years, males - Adult equivalents
1943            // 13 - 17 years, females - Adult equivalents
2024            // > 17 years, males - Adult equivalents
1943            // > 17 years, females - Adult equivalents
 14,  14,  14,  14,  14,  14,  14,  14,  14,  14,  14,  14      // Milk price sell KSh/kg by month
 20,  20,  20,  20,  20,  20,  20,  20,  20,  20,  20,  20      // Milk price buy  KSh/kg by month
100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100, 100      // Tea/sugar cost  KSh/kg by month
  8,   8,   7,   6,   8,  10,   7,   8,  10,  10,  10,  10      // Maize price sell KSh/kg by month
 10,  10,   9,   8,  10,  12,   9,  10,  12,  12,  14,  14      // Maize price buy  KSh/kg by month
 30,  30,  30,  30,  30,  30,  35,  30,  30,  30,  30,  30      // Beans price sell KSh/kg by month
 45,  40,  35,  40,  45,  45,  40,  40,  40,  40,  40,  45      // Beans price buy  KSh/kg by month
 20,  20,  20,  20,  20,  20,  20,  20,  20,  20,  20,  20      // Toms  price sell KSh/kg by month
 25,  25,  25,  25,  25,  25,  25,  25,  25,  25,  25,  25      // Tomatoes  price buy  KSh/kg by month
```

20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20, 20 // Onion price sell KSh/kg by month
30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30, 30 // Onion price buy KSh/kg by month
1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500 // Cattle 1 sell KSh by month[a]
3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000 // 2 sell KSh by month
3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000, 3000 // 3 sell KSh by month
10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000, 10000 // 4 sell KSh by month
11000, 11000, 11000, 11000, 11000, 11000, 11000, 11000, 11000, 11000, 11000, 11000 // 5 sell KSh by month
2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000 // Cattle 1 buy KSh by month
4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000 // 2 buy KSh by month
4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000, 4000 // 3 buy KSh by month
12000, 12000, 12000, 12000, 12000, 12000, 12000, 12000, 12000, 12000, 12000, 12000 // 4 buy KSh by month
14000, 14000, 14000, 14000, 14000, 14000, 14000, 14000, 14000, 14000, 14000, 14000 // 5 buy KSh by month
400, 400, 400, 400, 400, 400, 400, 400, 400, 400, 400, 400 // Goats 1 sell KSh by month
700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700 // 2 sell KSh by month
700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700 // 3 sell KSh by month
1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500 // 4 sell KSh by month
1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500 // 5 sell KSh by month
600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600 // Goats 1 buy KSh by month
1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000 // 2 buy KSh by month
1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000 // 3 buy KSh by month
2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000 // 4 buy KSh by month
2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000 // 5 buy KSh by month
400, 400, 400, 400, 400, 400, 400, 400, 400, 400, 400, 400 // Sheep 1 sell KSh by month
700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700 // 2 sell KSh by month
700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700, 700 // 3 sell KSh by month
1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500 // 4 sell KSh by month
1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500, 1500 // 5 sell KSh by month
600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600, 600 // Sheep 1 buy KSh by month
1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000 // 2 buy KSh by month
1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000, 1000 // 3 buy KSh by month
2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000 // 4 buy KSh by month
2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000, 2000 // 5 buy KSh by month
0.0, 0.2, 0.5, 1.0 // Max milk vs condition index[b]

17.80, 42.40, 42.40, 74.2, 95.9	// Cattle Max kg meat by class
3.97, 6.36, 6.36, 10.6, 12.3	// Goat Max kg meat by class
3.97, 6.36, 6.36, 10.6, 12.3	// Sheep Max kg meat by class
0.05	// Cattle Prop non-edible deaths
0.05	// Goat Prop non-edible deaths
0.05	// Sheep Prop non-edible deaths
0.0, 0.5, 1.0, 1.0	// Meat yield vs condition[c]
150.0, 0.0, 600.0, 0.8	// Maize yield vs precipitation mm[d]
150.0, 0.0, 800.0, 0.4	// Bean yield vs precipitation mm[d]
780, 1800, 20000	// Triggers to sell small stock, Trigger to sell larger stock[e]
14.0, 20.0	// Trigger multipliers to spur smallstock and largestock livestock (cont.) purchase. If cash need is much smaller than assets, buy an animal[f]
0.0, 8.0, 500.0, 75.0	// Cattle density (per km^2) of livestock TLUs[g]
0.0, 1.5, 1000.0, 10.0	// Goat density (per km^2) of livestock TLUs[g]
0.0, 1.5, 1000.0, 10.0	// Sheep density (per km^2) of livestock TLUs[g]
1,2,2, 3,3,2, 1,1,1, 1,3,2	// Rainfall maps to use, by month (1=Dry, 2=Transition, 3=Wet)
10.0	// Grazing orbit, in km[h]
0.0,0.0,0.2, 0.9,0.9,0.2, 0.0,0.0,0.0, 0.0,0.8,0.1	// Likelihood herders will return to their permanent home[i]
200., .2, 1500., 1.0	// Cattle short-term HSI density versus Suitability Index
200., .2, 1500., 1.0	// Cattle long-term HSI density versus Suitability Index
2., .2, 200., 1.0	// Goat short-term HSI density versus Suitability Index
2., .2, 200., 1.0	// Goat long-term HSI density versus Suitability Index
2., .2, 200., 1.0	// Sheep short-term HSI density versus Suitability Index
2., .2, 200., 1.0	// Sheep long-term HSI density versus Suitability Index
0.45, 1.00	// Coefficient for outside the group ranch, and inside the group ranch
0., 1.0, 25., 1.0	// Distance to permanent household (km) versus Suitability Index
0., 1.0, 25., 0.9	// Distance to current camp (km) versus Suitability Index
0., 1.0, 75., 0.1	// Cattle density (TLUs per km^2) versus Suitability Index
0., 1.0, 10., 0.1	// Goat density (TLUs per km^2) versus Suitability Index
0., 1.0, 10., 0.1	// Sheep density (TLUs per km^2) versus Suitability Index
2,2,2, 2,2,2, 2,1,1, 1,2,2	// Integers showing which force map to use each month[j]
0.05	// Desire to stay at their current location[k]

a – Here and in many lines of this file, livestock age/sex classes are referred to, which are: 1 – calves of both sexes, 2 – young (non-breeding) females, 3 – young males, 4 – adult females, and 5 – adult males.
b – A linear function relates animal condition indices from 0.0 to 1.0 to a multiplier on milk production, here from 0.2 to 1.0.
c – A linear function relates animal condition indices from 0.0 to 1.0 to a multiplier on meat yield, here from 0.5 to 1.0.
d – A linear function relates amount of precipitation during appropriate months to crop yields.
e – Triggers, in KSh, of money needed over the long-term, calculated each time step. If the need exceeds these triggers, small or large livestock are sold.
f – Triggers, in KSh, of cash holding that would trigger households to purchase livestock. If their holdings exceed these triggers, small or large livestock are purchased.
g – A linear function relates maximum densities of animals given habitat suitability values.
i – This measure, and those on the following 12 lines, are used in deciding when to move herds to a temporary camp location.
j – A flag indicating which force map to use. Force maps control the distribution of animals, in ways that are not associated with ecological relationships (e.g., limits in access due to fences or legal restrictions).
k – A measure used in deciding when to move herds to temporary camp locations.