



**GREENING LIVESTOCK PROJECT
HOUSEHOLD SURVEY TO LIVESTOCK KEEPERS 2017-2018**

1 GENERAL

1.1 Demographics

Question	Answer (open or code)
Country	
Household ID	
Enumerator name	
Date	
Name of respondent	
Mobile phone number of respondent	
Does this household have an adult female cow that produces milk or has produced milk? 1= yes, 0=no	Code:
County (KE)/region (TZ)	
Sub-county (KE)/district (TZ)	
Ward (KE & TZ)	
Village (KE & TZ)	
Gender of respondent 1= male 0= female	code:
Respondent's position in the household: 1= head 2= spouse 3= daughter 4= daughter in law 5= son 6= son in law 7= hired manager 8= other (specify)	code:
Year of birth of respondent	Year:
How many household members, including household head and respondent, live permanently on the compound?	
How many household members are younger than 16 years?	
How many household members are 65 years or older?	

1.2 Provide the following details about the household head (HHH):

Name of household head (if not same person as the respondent): _____

Sex of the HHH 1=male 2=female	Household type 1=Male headed and managed 2=Male headed, female managed (husband lives away from home) 3= Female headed and managed 4=Child/Orphan (below the age of 18) headed household	Marital status HHH 1=Married 2=Single 3=Widow/er 4=Separated/divorce	Year of birth HHH	Highest completed education HHH (code)	Can HHH read and write in an official language? 0=No 1=Yes	Is HHH indigenous to this community? 0= no 1= yes	If no, year HHH moved here

Highest attained education KE (code)

- 1= No Formal Education
- 2= Lower Primary Education, Class 1-4
- 3= Upper Primary Education, Class 4-8
- 4= Secondary Education
- 5= College or Tertiary Education
- 6= University degree or Masters or Doctorate

Highest attained education TZ (code):

- 1= No Formal Education
- 2= Lower Primary Education, Class 1-4
- 3= Upper Primary Education, Class 4-7
- 4= Secondary Education
- 5= Form 5 & 6
- 6= College or Tertiary Education
- 7=University degree of Masters or Doctorate

2 LAND TENURE AND LAND USE

2.1 Complete the following table relating to land holdings and use for the household.

Plot ID	Size (in acres)	How was land obtained? 1= inherited 2= bought 3= leased 4= allocated 5= other, specify:	Gained access since what year?	If bought, previous landholder 1=individual 2=company 3=government	If bought, previous land use 1=forest 2=cropland 3=grassland/savannah 4=other	Type of tenure (codes below table)	Rented out in last 12 months 1=yes 0=No	Terms of using the land (codes below table)
1		code:				code:	code:	code:
2		code:				code:	code:	code:
3		code:				code:	code:	code:
4		code:				code:	code:	code:
5		code:				code:	code:	code:
6		code:				code:	code:	code:

Type of tenure (codes): 1= Individual title/deed (freehold) 2=Owned by custom (not titled), 3= Owned by collective deed (e.g. through association), 4= State land, 5= Company land, 6= Other, specify:

Terms of using the land (codes): 1= None/no cost, 2= Fixed land rent, 3= Profit share, 4= Share cropping, 5= Homage/goodwill, 6= Other, specify:

Specify how many acres of the total acres owned/used, the acres that are arable:	Arable acres:
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3 LIVELIHOOD ACTIVITIES AND INCOME

3.1 For every household member, specify their primary activity in the last 12 months.
Do that by selecting their main primary activity in ODK.

Household Members 1= household head 2= spouse 3= daughter 4= son 5= daughter in law 6= son in law 7= other: specify	Formal Employment, specify: 1= full time (35h and +35h/week) 2= part time (<35/week)	Casual Employment	Other off farm activities	On farm activities	Domestic duties	Sick or unable to work	Attending school
code:							
code:							
code:							
code:							
code:							
code:							
code:							

3.2 Kindly tick if anyone in the household is engaged in any of the following livelihood activities in the last 12 months. Also tick the most important income sources in terms of **food** and **cash** separately.

Livelihood activities	Household members' involvement 1=yes 0=No	Number (e.g. nr. of pigs, jobs, crops, remittances)	Rank 2 most important for the household in terms of CASH for paying bills (fill 1 and 2)	Amount of cash revenue per year (in SH)
Dairy		n.a.		n.a.
Beef				
Cattle rearing/selling		n.a.		
Hogs/pigs				
Poultry				
Cereal (grain) crops ¹				n.a.
Roots and tubers (e.g. potatoes)				
Pulses/leguminous crops (beans, peas, lentils)				n.a.
Fodder crops ²				n.a.
Fruits				
Vegetables and melons				
Oilseed crops (incl. groundnuts)				
Nuts (excl. groundnuts)				
Beverage/stimulant (e.g. tea) and spice crops				

¹ Number of crop varieties

² Number of fodder varieties

Sugar crops (incl. honey ³)				
Other crops (incl. fibre, medicinal, rubber, tobacco)				
Plantation forest		n.a.		
Other farm activities (e.g. alcohol production, rabbits) Specify:				
Trading in goods		n.a.		
Formal employment full time ⁴				
Formal employment part time ⁵				
Casual employment ⁶				
Other off-farm activities (e.g. small business)				
Remittances ⁷				
Pension ⁸				
Dividends from cooperative/farmer group				
Other, specify:				
Other, specify:				

4 DISCRETE CHOICE EXPERIMENT

Introduction to the choice experiment

“This is an hypothetical experiment. Imagine that you want to increase the production of your cows. This requires investments in land under fodder production and labour, you will have the benefit of a higher production for your cows. I will show you choice cards that show three different levels of five aspects about dairy production, namely the (extra) percentage of your land that you produce fodder on, additional hours of work you have to do to increase your production, additional number of improved dairy cows, extra liters of milk per cow, and the market price you get when you sell the milk. For each of the questions below, you are asked to choose which type of options you would prefer to improve the production of your dairy cows (Option 1, Option 2, or Option 3).” If you prefer neither of the options you choose the “none” option.

See **separate handout** with the nine choice cards you present to the respondent. After having gone through the choice cards, finish the experiment with the two questions below:

How sure are you about your decision to accept a certain milk price? Please circle one number between 1 and 5, where 1 indicates ‘very unsure’ and 5 indicates ‘very sure’.

Very unsure 1 2 3 4 5 very sure

What motivated the choices that you made above: (text)

³ number of bee hives

⁴ Number of household members with full time formal employment

⁵ Number of household members with part time formal employment

⁶ Number of household members with casual employment

⁷ Number of people who send remittances to the household

⁸ Number of people who receive pension in the household

5 LIVESTOCK KEEPING

Does your household keep local cows? 1= yes 0 = no	Code:
If yes, since what year?	Year:
What are the two main reasons that this household started keeping local cows? 1= to supply milk for the household 2= to generate income 3= because we inherited/received cattle 4= because there was a good opportunity to invest in livestock 5= for ceremonial purposes (such as dowry) 6= social status 7= manure 8= other, specify:	Code 1: Code 2:
Does your household keep improved cows? 1=yes 0=no	Code:
If yes, since what year?	Year:
What are the two main reasons that this household started keeping improved cows? 1= to supply milk for the household 2= to generate income 3= because we inherited/received cattle 4= because there was a good opportunity to invest in livestock 5= for ceremonial purposes (such as dowry) 6= social status 7= manure 8= other, specify:	Code 1: Code 2:
Do you currently keep farm records on dairy production? 1=yes 0=no	Code:
If yes, which records? 1= milk yields 2= calving 3= vaccinations 4= AI 5= lactation 6= other, specify:	All that apply: Code(s):

6 DAIRY MANAGEMENT PRACTICES

6.1 Inventarisation of dairy management practices

The following questions apply to your current practices regarding the cow(s) only, for the last 12 months.

components	Indicator	options
Feeding		
general feeding	What is your main source of feed for cows?	4= improved pasture, 3= silage/hay, 2= concentrates, 1= grazing on natural pasture, 0= stovers (grazing or fed)
	Do you grow fodder crops on your farm?	Yes/no (% of land under fodder we get elsewhere in survey)
	Do you practice stall feeding?	2= yes 1= no
	If no how many hours are your cows grazing?	4= 12 hours or more per day, 3= 10-12 hours per day, 2= 8-10 hours per day, 1= less than 8 hours per day
concentrates	Do you feed your cows on concentrates?	Yes/no
	If yes, about how much per day per cow?	3= more than 5 kgs, 2= 2-5 kgs 3= less than 2 kg's
minerals	Do you give your cows mineral licks?	3=yes always (available 24h), 2=yes sometimes, 1=no
feed conservation	Do you conserve feed on farm?	4= both hay and silage, 3= hay, 2= silage, 1= no
	How do you store your feed?	3= store with roof and floor, 2=storage without cover/roof, 1=no storage place for feeds
Watering		
access to water	How often do you cows have access to water per day?	4= free access to water, 3= 3 times a day, 2= 2 times a day, 1= once or less per day
Animal health		
prophylaxis	Vaccination against major disease in area 1	Yes/no

	Vaccination against major disease in area 2	Yes/no
	Vaccination against major disease in area 3	Yes/no
	In the last 12 months, how often did you deworm your cows?	3= within every 3 months, 2=beyond every 3 months, 1=zero times
	In the last 12 months, how often did you spray/dip your cows against ticks?	3= within every 3 months, 2=beyond every 3 months, 1=zero times
disease treatment	Do you separate sick animals from the healthy ones?	Yes/no
	Do you have animal insurance for your cow(s)?	Yes/no
Animal husbandry		
herd fertility	What do you do after detecting heat?	2= AI, 1=bull
	How soon do you take action after detecting heat?	3= within 8 hours, 2= within 8-12 hours, 1= after 12 hours
	Are your cows confined during the day?	3= yes always (zero-grazing), 2= yes sometimes (semi-grazing), 1= no
hygiene practices	How often do you clean the cow shed?	3=daily, 2=weekly, 1=less frequently
	Do you clean the teats before and after milking?	4= clean before and after milking and apply antibacterial, 3= clean before and after milking, 2= only before milking, 1= no cleaning of the teats
Manure management		
management	Do you collect manure from your cows?	Yes/no
	How do you store your manure?	5= in a bio-digester, 4= I compost it, 3=with a floor and cover, 2=only with a floor or cover (incl. e.g. leaves), 1=no floor and cover
	Do you collect urine and dung separately?	Yes/no
manure use	What do you do with the manure/slurry?	3=apply to food and fodder and cash crops, 2=only to two types of crops, 1= only to one type of crop, 0= to none
	How soon do you apply the manure?	3=within 1 month, 2=between 1-3 months, 1= after 3 months
	How do you apply your manure/slurry?	2=incorporating into the soil, 1=broadcasting
Bio-digester	Does your bio-digester work?	2= yes, 1=no
	If yes, do you use the biogas?	2= yes, 1= no
	Do you use the bio slurry on farm?	2= yes I use the bio slurry on farm, 1= no I don't use the bio slurry on farm

6.2 What do you think are the best practices for cow productivity? Select two from the following list:

Feeding cows improved fodder, feeding cows concentrates, feeding cows minerals, practice feed conservation, cows having access to water, vaccinations against major diseases, regular deworming, regular spraying/dipping against ticks, separate sick animals from the rest, have cow insurance, practice AI, bull to inseminate, quickly taking action after seeing a cow on heat, hygiene practices such as regularly cleaning the cow shed and cleaning teats before and after milking, other, specify:, other, specify:.

6.3 What are the main challenges faced?

Main challenges regarding:	Reasons (accept multiple, codes next page)
Good animal health practices	
Proper feeding and watering the cattle	
Good manure management	
Good animal husbandry practices	

Reasons:

- 1= capital constraints (incl. to purchase/rent labour and land)
- 2 = labour constraints (no availability of labour)
- 3= land constraints (no land available)
- 4= other priorities/no interest

- 5= inputs besides land, labour and capital not present in my area (e.g. seeds)
- 6= infrastructural/distance (e.g. to river)
- 7= don't know how to (lacking knowledge)
- 9= other, specify:

7 LIVESTOCK CHARACTERIZATION

7.1 Kindly list every livestock category owned by the household

Breed type 1 = Holstein-Friesian crossbred 2 = Ayrshire crossbred 3 = Jersey crossbred 4 = Mpwapwa crossbred 5= Boran crossbred 6 = local Zebu purebred 7= Holstein-Friesian purebred 8=Ayrshire purebred 9 Jersey purebred 10= Mpwapwa purebred 11= Boran purebred	Age class [code depending on sex]	Number of animals in this category	Did you acquire any livestock in the last 12 months 1=yes 0=no	Number added	Way in which it was acquired? 1= purchased 2= gift 3= by birth 4= traded 5= other, specify:	If purchased what price (SH per head)

Age class: 1= female calves until first heat, 2= male calves 0-1 yrs, 3=heifers (from first heat to first calving), 4=steer, castrated and non-castrated male young, 1-2 years, 5=cows after first calving, 6=bulls (not castrated), 2+ yrs, 7= castrated adult males, 2+yrs

8.2 For the cattle that spend at least part of their time grazing.

	Lives tock IDs	How does cattle usually graze? 1= free grazing (no fence) 2= fenced grazing 3= rotational grazing 4= tethered grazing 5= other, specify:	Where does the cattle usually graze? 1= cropland 2= native grassland/pasture 3= planted fodder/pasture 4= shrubland 5= forest 6= along the road 7= along rivers/swamps 8 = in national parks 9 = in forest reserves 10 = other, specify	Tenure 1= my own (incl. rented) land 2= someone else's land 3= communal land 4= government protected 5= government unprotected	How many hours does the cattle usually graze per day?	If payments, price per day/animal
Dry season		Code:	Code:			
Wet season		Code:	Code:			

Does your cattle also sometimes graze in:	Dry season	Wet season	If so, payment/day/animal
forest			
along the road			
along rivers/swamps			
in national park and/in forest reserves			

8.3 In general, do cattle have adequate grazing resources to meet forage requirements throughout the year? 1= yes, 2= no

If yes, specify feed insecure months:

	Jan	Feb	Mach	Apr	May	June	July	Sept	Oct	Nov	Dec
Tick											

9 ANIMAL EXITS

Breed type 1 = Holstein-Friesian crossbred 2 = Ayrshire crossbred 3 = Jersey crossbred 4 = Mpwapwa crossbred 5= Boran crossbred 6 = local Zebu purebred 7= Holstein-Friesian purebred 8=Ayrshire purebred 9 = Jersey purebred 10= Mpwapwa purebred 11 = Boran purebred	Age class [code]	Nr. of animals of category based on breed type, breed, sex, age	Method of exit 1= sold 2= slaughtered 3= given away 4= stolen 5= died (e.g. of disease) 6= other, specify:	If 1, 2, 3 or 5, Reason for exit 1= sex (e.g. male calve) 2= disease, specify: 3= malnutrition 4= want to reduce herd 5= for income 6= for food consumption 7= other, specify:	If sold, for how much? (SH)

Age class: 1= female calves until first heat, 2= male calves 0-1 yrs, 3=heifers (from first heat to first calving), 4=steer, castrated and non-castrated male young, 1-2 years, 5=cows after first calving, 6=bulls (not castrated), 2+ yrs, 7= castrated adult males, 2+yrs

10 COSTS OF DAIRY PRODUCTION

Other costs 1= Artificial insemination 2=Deworming 3= Vaccines 4= Other purchased drugs 5= Additional animal health costs 6= Delivery of calf 7= Drinking water 8= Other, specify:	Frequency in last 12 months	Aggregate cost (SH)	Source (code)	From where (specify location)	Terms of payment (code)

Source: 1= Hub, 2= farmer cooperative, 3=shop (e.g. agrovet), 4= government (e.g. gov. vet), 5=private (e.g. private vet, trader), 6= informal (e.g. neighbor), 7=other, specify:

Terms of payment 1= cash in hand, 2= mobile money, 3= check off, 4= credit without interest rate, 5= credit with interest rate, 6= in kind (milk, labour), 7= other, specify:

11 ANIMAL HUSBANDRY

Animal husbandry	Answers
On average, what is the calving interval of all your cows?	Months:
On average, for how many days are you cows dry before calving?	Days:
How many of your cows are currently dry?	Nr:
Approximately, how often do you check your animals for signs of disease? 1= never/rarely, 2= daily, 3= weekly, 4= monthly, 5= other, specify:	Code:
How many times have all your cattle together been sick in the last 12 months?	Nr:
How many times did you have a veterinary come to check on your (sick or not sick) animals in the past 12 months?	Nr:
How do you detect when a cow is on heat?	Text:
How many times do you inseminate your cows before they become pregnant?	nr:
What do you do after delivery of a calf? 1= milk the cow and give colostrum to calf 2= let the calve suckle the colostrum 3= both (milk some teats and leave some for calf) 4= calf doesn't get colostrum	Code:
Do you separate the calf from the cow? 1= yes 2= no	Code:
If yes after how long? (nr of days)	Nr. of days:

12 MILK PRODUCTION, CONSUMPTION, AND SELLING

12.1 Fill the table below on the history of your dairy production

Question	Answer (code)
Do you sell milk from your cows? 1=yes 0=no. Only continue if 1	Code:
Since what year did you start selling milk	Year:
How many times per day do you milk your cows?	Number:
Indicate time of first milking of the day: 1=morning, 2=midday, 3=afternoon/evening	Code:
Indicate time of second milking of the day: 1=morning, 2=midday, 3=afternoon/evening	Code:

Indicate time of third milking of the day: 1=morning, 2=midday, 3=afternoon/evening	Code:
What is the milk production of all your cows (local and improved) together in the wet season? Answer in Liters	Liters:
What is the milk production of all your cows (local and improved) together in the dry season? Answer in Liters	Liters:
Indicate which milk the household generally consumes: 1= morning milk dry season, 2= evening milk dry season, 3= morning milk wet season, 4= evening milk wet season	Code(s) (all that apply):
For all that apply, how many Liters does your household consume?	Liters morning dry: Liters evening dry: Liters morning wet: Liters evening wet:

12.2 Selling milk

IF MILK IS SOLD IN THE LAST YEAR fill in the table below using absolute numbers (L). Codes on next page.

Used/sold where?	Amount of MORNING milk in DRY season	Amount of EVENING milk in DRY season	Average Price (KES/L) in DRY season	Amount of MORNING milk in RAINY season	Amount of EVENING milk in RAINY season	Average Price (KES/L) in RAINY season	Off-take arrangement (code)	How compensated (code, accept multiple)*	Transport (code). If code 2 specify walking minutes to buyer/col l. point	Sell here because: (code)	Have you used/received services from this buyer (incl. information) 1=yes 2=no	If yes which services (code)	Terms of access to services (code)
individual customers (e.g. hotels, neighbors)									code: where:				
informal middlemen/hawkers									code: where:				
Farmers groups									code: where:				
Farmers cooperatives (incl. hubs)									code: where:				
Private processors (e.g. New KCC)									code: where:				
Sold at the street/mark et/shop by household									code: where:				

CODES

Off-take arrangement:

- 1= written contract
- 2= verbal agreement
- 3= no contract

How compensated:

- 1=direct cash
- 2=direct mobile money
- 3=weekly cash
- 4=weekly mobile money
- 5=weekly through bank/sacco
- 6=monthly cash
- 7=monthly mobile money

- 8=monthly through bank/sacco
- 9=in kind
- 10=other, specify:

Transport:

- 1= milk is picked up from farm
- 2= I bring milk to the buyer/collection point

Why do you sell there:

- 1= offers the best price
- 2= I prefer their payment structure (e.g. cash in hand, monthly etc.)
- 3= I have (easy) access to this channel/no

(easy) access to other channels

- 4= they're reliable/trustworthy
- 5= I have a good relationship with them/they are relatives
- 6= Social obligations
- 7= Buyer collects from farm
- 8= Buyer closest to me
- 9=other, specify:

Services:

- 1= information (incl. trainings, extension services)

2= providing/saving credit

3= providing inputs

Terms of access to services:

- 1= free
- 2= direct cash
- 3= mobile money
- 4= via check off
- 5= on credit, without interest rate
- 6= on credit, with interest rate
- 7= other, specify:

12.3 If indicated above to be selling milk please fill the table below

	Who on average decides where and how to sell (code below)	Who on average manages the money (code below)	Value addition 1=yes 0=No	If yes what 1= Mala/mursik 2= Yoghurt 3= other, specify:	If yes, do you sometimes sell that product/those products? 1= yes 2=no
Evening milk					
Morning milk					

Who:

- 1= HHH and spouse together
- 1= household head
- 2= spouse

- 3= daughter
- 4= son
- 5= daughter in law
- 6= son in law

- 7= hired worker
- 8= other: specify

12.4 Milk hygiene and quality

Type of container used to transport milk for sales: 1= aluminum can 2= plastic can (small opening) 3= improved (plastic) can 4= bucket 5= other, specify:	Code:
Do you have to meet any quality standards to sell your milk? 1= yes, 2=no	
If yes, which standards to which buyers?	Text:
Was you milk ever rejected because of quality issues? 1= yes 2= no	

12.5 Milk purchases/consumption (based on the last 12 months). This question is about milk that is purchased AND consumed by members of the household.

Do you or any other household members sometimes directly buy and consume milk from the following buyers? 1: individual costumers 2: informal middleman/hawkers 3: farmers groups 4: farmers cooperatives 5: private processors 6: bought at street/market/shop	Select all that apply (this one could be added to the big milk selling table (10.2)).
Do you or any other household member sometimes buy and consume packaged/processed milk? 1: yes, weekly or more often 2: yes, every 8 days to 4 weeks (monthly) 3: yes, less than monthly 4: no	Code:

Do you or any other household members sometimes buy and consume packaged/processed dairy products other than milk? (e.g. yoghurt, mala) 1: yes, weekly or more often 2: yes, every 8 days to 4 weeks (monthly) 3: yes, less than monthly 4: no	Code:
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13 INFORMATION, NETWORK, CHANGE, ATTITUDE, PERCEPTION

13.1 Access to information

Used sources of information on management of your dairy animals in the last 12 months.	1= yes 0= no	Type of information, about: 1=marketing (incl. prices) 2=dairy management practices (feeding, manure, animal health etc.) 3=milk handling (e.g. about milk quality) 4=inputs (locations, quality, new products etc.) 5= other, specify:	From the used information sources, rank the two most important ones for your dairy production (put 1 and 2 in cell)
FROM MILK BUYERS			
Via farmer groups (training, extension officer etc.)			
Via farmers cooperative (training, extension officer etc.)			
Private processors			
Other buyers of milk (middleman, indiv costumers)			
VIA PUBLIC ACTORS			
Government extension/veterinarian			
Public event organized by government			
OTHER ACTORS			
Neighbors/family/friends			
NGO's/development organizations			
Public events/gatherings (incl. baraza) organized locally			
Private companies (excl. processors)			
MEDIA OUTLETS			
Radio program			
Television program			
Print media (newspaper/magazine etc.)			
Online media/communications (Facebook, Whatsapp, Twitter etc.)			
FOR ALL CATEGORIES			
Other, specify:			

13.2 GENERAL networking capacity and group membership

Which type of groups are household members part of?	member 1= yes 2=No	Specify name/type of group	Functions (accept multiple) 1= sourcing/selling/transporting milk 2= sourcing/selling/transporting other products than milk 3= providing agricultural extension services/training 4= providing/saving credit 5= sharing knowledge (not exclusively agricultural) 6= networking/social functions 7= sharing production factors (land, labour, capital, e.g. in community farm) 8= other, specify:	Is there a membership fee? 1= yes 2= no	If yes how much [SH]	Is household member active or non-active member? 1= not active 2= average 3= above average active member	Are you a shareholder 1= yes 2=no
Farmers groups		Name:					
Farmers cooperatives		Name:					
Women/men group		n.a.					n.a.
NGO/development organization		Name:					n.a.
Online groups (e.g. WhatsApp, Facebook, app)		Type: whatsapp/FB Name if app (e.g. iCow):					n.a.
Religious groups		n.a.					n.a.
Other, specify:							n.a.
Other, specify:							n.a.

13.3 Performance indicator farmers' cooperative/hub/ group, if a member if active in more than one choose the one they are most active in. Provide name of group here:

_____text

Performance indicator	Tick relevant box			
	Not relevant/ I don't know	Never	Sometimes	Mostly
Ensure access to sufficient inputs				
Ensure timely access to inputs				
Ensure fair input prices				
Ensure fair milk prices				
Ensure timely payment for milk				
Provides technical assistance				
Able to resolve internal conflicts				

Provides equal treatment to all its members				
Represents the interests of the wider community				
Is transparent and open about how revenues are distributed				
Is able to exercise good financial management (e.g. in repaying loans)				
Is open to new members				
Association representatives are fairly elected				

13.4 Change

COMPARED TO ABOUT 5 YEARS AGO	1= More 2=Same 3=Less	If 1 or 3, reason for change	How much did you have/ produce/sell 5 years ago?
About this household			
Amount of owned land (acres)			
Amount of land under fodder crops (acres)			
Amount of milk sold (liters)			
Households' earnings (SH) through off-farm activities			
Number of cattle owned			
Average liters of milk produced per cow per day			
Harvests of food crops in terms of volume			n.a.
Improved breed(s) of livestock you keep			n.a.
Amount of inputs used for livestock production (e.g. vaccines, concentrates etc.)?			n.a.
On-farm feed conservation (silage, hay)			n.a.
Generally in the area			
Availability of communal grazing land			n.a.
Availability of labour			n.a.

Forced circumstances: 1= environmental shock, 2= subdivision of land, 3= lack of capital/labour, 4= lack of market/low market price, 5= poor quality of inputs, 6= high input prices, 7= diseases, 8= other priorities, 9= poor management, 10= wanting to focus on dairy/increase productivity, 11= other, specify:

13.5 Attitude

Which of the statements below describes what you value most?

How do you value the following statements:	Rank nr 1, 2 and 3
Living in a peaceful community/country	
Self-discipline, self-restraint	
Taking care of the natural environment	
Obtaining wealth	
Fairness, justice	
Being influential	
Family security and safety for loved ones	
Innovating	

13.6 Perception

Questions	Fill code or circle correct answer
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In general, do you think feed conservation is economically profitable? 1=yes 2= no 3= I don't know	Code:
If fodder was (more) available in the market would you consider reducing the area under fodder crops on your farm (only for householder who produce fodder crops) 1=yes 2=no 3= I don't know	Code:
Do you think the use of fresh (1-30 days old) manure on your crops is economically profitable? 1= yes 2= no 3= I don't know	Code:
Right now, do you know if this farm will be taken over by a family member? 0= no 1= yes	Code:
<i>If no</i> How confident are you that in the future your farm will be taken over by a family member?	Circle: Not confident at all 1 2 3 4 5 very confident
How would you rate the quality of the natural environment now compared to about 10 years ago?	Circle: worse same better
Complete the sentence according to your believe:	Circle: Dairy has A NEGATIVE IMPACT / NO IMPACT / A POSITIVE IMPACT on the climate
Explain your answer to the previous question:	Text:

14 ACCESS TO CREDIT

Has anyone in the household ever obtained long term credit for your dairy activities ? 1= yes 2= no	Code:
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If yes fill in table below:

Type of loan 1=monetary 2=in kind	When (year)	Amount (SH)	Interest rates	Repayment duration	Source/ organization 1=cooperative (SACCO) 2=micro finance institute (MFI) 3=bank 4=informal (neighbor, family) 5= mobile provider(e.g. mshwari) 6=other, specify:	Purpose 1= buying a cow 2= buying inputs 3= building a cow shed 4=other, specify:	Satisfied with services? 1= yes 2= no 3= I don't know (yet)

15 FOOD, FODDER AND CASH CROP PRODUCTION AND SALES

15.1 List the three main food, two main fodder and two main cash crops that the household has grown over the past year, and the approximate area of land allocated to each, as well as the use of this crop. Codes below table (next page). List of food crops to include are pulses, coarse grains, and cereals. These include wheat, maize, barley, wheat, sorghum, rice, millet, oats, rye, beans, peas, soybean, lentils, groundnut, cowpea. Do not include fruits, vegetables, roots, or tubers under this section. Codes on next page.

Food and cash crops	Is intercropped? 1=Yes, 2=No	Acre	Component crop ¹¹	Do you use fertilizer 1=Yes 0=No	Do you use manure 1=Yes 0=No	total production per season (code)	Unit (codes below table)	Quantity of sales [kg] (if any)	Total value of sales (SH)	Quantity household food consumption [kg]	Type of seed 1=Local 2=improved
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
Fodder crops		Acre	Component crop ¹²	Do you use fertilizer 1=Yes 0=No	Do you use manure 1=Yes 0=No	total production per season (code)	Unit 1=90kg 2=50kg 3=Debe 4=KG's 5=Gorogoro (2kgs)	Quantity of sales [kg] (if any)	Total value of sales (SH)	Crop stored for dry season? 0= no 1= yes	Source of seeds 1=on farm 2=store 3=farmer group/coop 4=other, specify:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:
		1: 2:				1: 2:	1: 2:	1: 2:	1: 2:	1: 2:	Code:

Season: 1= long rains, 2= short rains

Units: 1= kilogram, 2= gram, 3= debe (18kg), 4= gorogoro (2.25kg), 5= mkebe (250g), 6= cup (200g)

¹¹ Only if intercropped: Here you record the other crop in the intercrop e.g. beans if it is a maize beans intercrop

¹² Only if intercropped: Here you record the other crop in the intercrop e.g. beans if it is a maize beans intercrop

Food and cash crop codes:

(cereals)

- 1= wheat
- 2= rice
- 3= barley
- 4= maize
- 5= rye
- 6= oats
- 7= millets
- 8= sorghum
- 9= buckwheat

(sugar crops)

- 10= sugar cane
- 11= sugar beet

(pulses/leguminous crops)

- 12= beans
- 13= peas

14= lentils

(oil seed crops)

- 15= soybean
- 16= groundnuts
- 17= sunflower seed
- 18= sesame seed

(beverage/stimulant crops)

- 19= coffee
- 20= tea
- 21= cocoa

(other)

- 22= nuts
- 23= spices
- 24= tobacco
- 25= rubber
- 26= pyrethrum
- 27= other, specify:

28= other, specify:

Fodder crops codes:

1= maize for forage (different type of maize!)

- 2= napier grass
- 3= Rhodes grass
- 4= Lucerne
- 5= brachiaria
- 6= leucaena
- 7= gliricidia
- 8= calliandra
- 9= alfalfa

10= sesbania
11= other, specify:

15.2 Costs incurred in the last 12 months for total crop production

Costs	If incurred 1=yes 2=no	Quantity purchased	Unit	Costs in the last 12 months	Source 1=agrovet 2=coop/group 3=market 4=informal/neighbor 5=other specify	From where (location)	Terms of payment (accept multiple) 1=cash 2= mobile money 3=checkoff 4=credit without interest rate 5= credit with interest rate 6=in kind 7=other, specify:
Inorganic fertilizers							
Seeds -- local							
Seeds -- improved							
Herbicides							
Pesticides							
Hired labor			mandays				
Other, specify:							

16 WELFARE INDICATOR

<p>1. Does the household or a household member own the dwelling?</p> <p><input type="checkbox"/> Owns the dwelling</p> <p><input type="checkbox"/> Rents the dwelling</p> <p><input type="checkbox"/> Uses without paying rent</p> <p><input type="checkbox"/> Nomadic or temporary dwelling</p> <p>2. How many rooms are there in your dwelling? Excluding toilet, hallway []</p> <p>3. What is the material of the roof of the dwelling?</p> <p><input type="checkbox"/> Mud <input type="checkbox"/> Thatch <input type="checkbox"/> Iron sheets</p> <p><input type="checkbox"/> Concrete <input type="checkbox"/> Roofing tiles</p> <p><input type="checkbox"/> Asbestos <input type="checkbox"/> Other:.....</p> <p>4. What is the material of the walls of your house?</p> <p><input type="checkbox"/> Mud/mud bricks <input type="checkbox"/> Stone</p> <p><input type="checkbox"/> Burnt bricks <input type="checkbox"/> Wood/bamboo</p> <p><input type="checkbox"/> Iron sheets <input type="checkbox"/> Cardboard</p> <p><input type="checkbox"/> Cement/concrete</p> <p><input type="checkbox"/> Other:.....</p>	<p>5. What is the main fuel used for lighting?</p> <p><input type="checkbox"/> Kerosene/paraffin <input type="checkbox"/> Gas</p> <p><input type="checkbox"/> Electricity <input type="checkbox"/> Generator</p> <p><input type="checkbox"/> Battery <input type="checkbox"/> Candles</p> <p><input type="checkbox"/> Other..... <input type="checkbox"/> Firewood</p> <p>6. What is the main fuel used for cooking?</p> <p><input type="checkbox"/> Firewood <input type="checkbox"/> Charcoal</p> <p><input type="checkbox"/> Kerosene/oil <input type="checkbox"/> Gas</p> <p><input type="checkbox"/> Electricity <input type="checkbox"/> Crop residue dust</p> <p><input type="checkbox"/> Animal waste <input type="checkbox"/> Other.....</p> <p>7. What kind of toilet facilities does your household use?</p> <p><input type="checkbox"/> None</p> <p><input type="checkbox"/> Flush to sewer</p> <p><input type="checkbox"/> Flush to septic tank</p> <p><input type="checkbox"/> Pan/bucket</p> <p><input type="checkbox"/> Covered pit latrine</p> <p><input type="checkbox"/> Uncovered pit latrine</p> <p><input type="checkbox"/> Ventilation improved pit latrine</p> <p><input type="checkbox"/> Other.....</p>	<p>8. Does the household own any of the following goods?</p> <p><input type="checkbox"/> Electric iron <input type="checkbox"/> Charcoal Iron</p> <p><input type="checkbox"/> Refrigerator <input type="checkbox"/> Television</p> <p><input type="checkbox"/> Mobile phone <input type="checkbox"/> Radio</p> <p><input type="checkbox"/> Matrass or bed <input type="checkbox"/> Sofa</p> <p><input type="checkbox"/> Sewing machine <input type="checkbox"/> Table</p> <p><input type="checkbox"/> Modern stove <input type="checkbox"/> Bicycle</p> <p><input type="checkbox"/> Motorcycle <input type="checkbox"/> Vehicle</p> <p><input type="checkbox"/> Mosquito net <input type="checkbox"/> Computer</p> <p><input type="checkbox"/> VCR/DVD player <input type="checkbox"/> Cowshed</p> <p><input type="checkbox"/> Chaff cutter</p> <p>9. What is your main source of water?</p> <p><input type="checkbox"/> River <input type="checkbox"/> well/borehole</p> <p><input type="checkbox"/> Piped <input type="checkbox"/> Rainwater</p> <p>Distance in Km if water is not on farm:km</p>
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17 NUTRITION SECURITY INDICATOR- HOUSEHOLD DIETARY DIVERSITY SCORE (HDDS)

Breakfast	Lunch	Dinner	snack
Indicate if you took any of the following foods in the previous day (24 SH) (first list all meals separately)			
Question No.	Food group	Examples	1= yes 0= no
1	CEREALS	bread, noodles, biscuits, cookies or any other foods made from millet, sorghum, maize, rice, wheat + insert local foods available grains e.g. ugali, nshima, porridge or pastes or other locally available cereal foods	
2	VITAMIN A RICH VEGETABLES AND TUBERS	pumpkin, carrots, squash, or sweet potatoes that are orange inside & other locally available vitamin-A rich vegetables (e.g. sweet pepper)	
3	WHITE TUBERS AND ROOTS	white potatoes, white yams, cassava, or foods made from roots	
4	DARK GREEN LEAFY VEGETABLES	dark green/leafy vegetables, including wild ones + <i>locally available vitamin-A rich leaves such as cassava leaves etc.</i>	
5	OTHER VEGETABLES	other vegetables (e.g. tomato, onion, eggplant) , including wild vegetables	
6	VITAMIN A RICH FRUITS	ripe mangoes, cantaloupe, dried apricots, dried peaches + other locally available vitamin A-rich fruits	
7	OTHER FRUITS	other fruits, including wild fruits	
8	ORGAN MEAT (IRONRICH)	liver, kidney, heart or other organ meats or blood-based foods	
9	FLESH MEATS	beef, pork, lamb, goat, rabbit, wild game, chicken, duck, or other birds	
10	EGGS	any eggs	
11	FISH	fresh or dried fish or shellfish	
12	LEGUMES, NUTS AND SEEDS	beans, peas, lentils, nuts, seeds or foods made from these	
13	MILK AND MILK PRODUCTS	milk, cheese, yoghurt or other milk products	
14	OILS AND FATS	oil, fats or butter added to food or used for cooking	
15	SWEETS	sugar, honey, sweetened soda or sugary foods such as chocolates, sweets or candies	
16	SPICES, CONDIMENTS, BEVERAGES	spices (black pepper, salt), condiments (soy sauce, hot sauce), coffee, tea, alcoholic beverages OR local examples	
Other characteristics of yesterday's food			1= yes 0= no
Did you eat anything (meal or snack) OUTSIDE of the home yesterday?			
Was yesterday a celebration or feast day where you ate special foods (put code 1) or was it a day where you ate more or less than usual (put code 0)?			

18 DAIRY SPECIFIC LABOUR (not to all households)

This section should be for a subsample of population (e.g. 5% of total sample size). For the households that do respond to this question, the survey should finish at the end of section 10 (or the section on milk production) (the remaining sections are skipped in order to keep the time of completion for these households low and reduce errors from mental fatigue).

For the following activities related to maintenance of the dairy herd, specify who is responsible, and the approximate number of hours per week BASED ON THE LAST YEAR.

Activity (code) (multiple)	Per season (code)	Livestock (IDs) (multiple)	Hours per week				Perm. empl. worker(s)	Not perm. Empl. Worker(s) (seasonal)	If temporary, weeks per season	Total cost of permanent labour [KES/month]	Total cost of temporary labour [KES/manday]
			HH male	HH female	HH child (< 16)						
1	1										
	2										
2	1										
	2										
3	1										
	2										
4	1										
	2										
5	1										
	2										
6	1										
	2										
7	1										
	2										
8	1										
	2										
9	1										
	2										

Season 1= wet 2= dry

Activity: 1= Herding on own fields/grass-land 2= Herding off-farm 3= Feed collection, storage & preparation 4= Feeding 5= Watering 6= Housing maintenance 7= Milking 8= Animal (reproductive) health related activities (AI, calving, etc) 9= Other, specify:

19 SHOCKS

List the shocks experiences by the household in the past five years.

Type of Shock	Occurred in past 5 years? 1=yes 0=no	If yes, frequency of occurrence 1 = once in past 5 years 2= twice in past 5 years 3= thrice in past 5 years 4= four times in past 5 years 5 = on an annual basis for past 5 years
Droughts		
Floods		
Strong winds/storms		
Crop/fodder pests		
Livestock disease		
Livestock theft or losses		
Decline in off farm income (from business or employment)		
Large fall in sale price of crops		
Large rise in price of food		
Large rise in agricultural input prices		
Shortage of water		
Loss of land		
Immediate need of money and selling crops/livestock at current market price		
Cattle deaths or productivity shortfalls from forage scarcity		

20 SEASONALITY CALENDAR

Tick the seasons, the main crop labour months, the major bill months for school fees, and the major bill months for farm labour for the household.

Activity		Jan	Feb	Mar	Apr	May	June	July	Sept	Oct	Nov	Dec
Seasons	Long wet season											
	Long dry season											
	Short wet season											
	Short dry season											
Main crop labour months												
Major bills 1= school fees 2= major farm labor months												

21 RETURNS TO LAND, LABOUR AND CAPITAL (to households outside the sample)

Answer this question for the **main 2 food crops and main 2 cash crops** in the village/area. For the cash crops, choose the two most profitable cash crops in the area.

	Specify
Crop name	
Area planted	
If perennials, number of trees/plants per area	
If annual crop, number of seasons per year	
If perennials, time between planting and cutting down	
If perennials, time between cutting down and replanting	
If annual crop, number of times harvested per cropping per year	

COSTS

	Name/ description	Y1/season 1			Y2/season 2			Costs per unit
		Amount	Unit	Number of applications per year/season	Amount	Unit	Number of applications per year/season	
Material hire (e.g. for land prep)								
Material purchase								
Seeds/sapling								
Fertilizer 1 (per application)								
Fertilizer 2								
Fertilizer 3								
Pesticide 1 (per application)								
Pesticide 2								
Pesticide 3								
Paid technical support								
Other inputs (e.g. nets, poles, petrol)								
Yield			per tree/acre/planted area (select)			per tree/acre/planted area (select)		

LABOUR

	Nr. of mandays	Frequency nr. of mandays per:	Y1/ season 1		Y2 / season 2		Hired labor how paid (code)	Amount paid per: (code)
			Household labor	Hired labor	Household labor	Hired labor		
Land clearing		Prior to planting						
Land preparation		Prior to planting						
Planting		At planting						
Weeding/cleaning		per year						
Pruning		per year						
Fertilizing		per application						
Harvesting		per harvest						
Processing		per harvest						
Storage		per year						
Transporting		per harvest						

Codes

Hired labour how paid (accept multiple):

- 1= in kind
- 2= in cash
- 3= mobile money
- 4= other, specify:

Amount paid per (accept multiple):

- 1= activity
- 2= manday
- 3= per volume/weight (specify)
- 4= other, specify:

To do at the end:

Collect GPS coordinates while thanking the respondent for his/her time and valuable information.