

Pre-analysis plan for the impact evaluation of the Farmer Trainer Program

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This document details the research questions for the impact evaluation of Farmer Trainer (FT) program, updating the initial plan (August 2012 proposal). It describes in particular the analysis plan for the Volunteer Farmer Trainer endline survey. Note that this analysis document was written before looking at any of the endline data. The endline contains many of the same variables as those collected at midline, as well as additional variables on final outcomes, as will be indicated below. A first descriptive report had been prepared with the midline data prior to finalizing.

1 Experimental design

1.1 Analysis of the existing FT program

The experimental design is based on a “randomized phase-in”: it starts by analyzing the FT program as it is, taking advantage of its roll-out in the Near East districts. It proceeds in four main steps:

1. **Identify communities and potential farmer trainers** (henceforth, “potential FTs”) in new sites of the “Near East” region where the EADD program is expanding.

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There is one potential FT per village. The recruitment of villages and potential FTs started in December 2014 and was completed by end of June 2015. It is a participatory process. Each recruitment “round” has three steps: (i) about 50-70 representatives (one per targeted village) are gathered by program staff and together establish criteria for selecting FTs; (ii) representatives go back to their villages, discuss with fellow farmers, and choose 2-3 candidates; (iii) these candidates come back to a new meeting with program staff, they are individually interviewed, and one candidate is retained for each village. We name him the “potential FT” as he will become FT once trained, which might occur in 2015, or 2-3 years later depending on whether the village belongs to the treatment group (entering the program early) or to the control group (entering later).

2. Conduct a baseline survey among a sample of farmers and with all potential FTs.

In each village, 5 farmers are surveyed: the potential FT; 3 members of his network; 1 other dairy farmer who is not a member of his direct network. To establish the sample, an LC1 (village) leader is asked the list of dairy farmers in the village. Then, the potential FT is surveyed first, and a specific module is used to identify his network (with questions such as: name a farmer who has asked you for advice on dairy farming in the past 3 months, or to whom you talk at church). The 3 “network members” to interview and the 1 “non-member” are then sampled using a list of random numbers. The goal of this stratification of the sample within villages is to separately analyze two groups of dairy farmers: (i) farmers who are likely to become trainees of the FT (henceforth, “potential trainees”) based upon their pre-existing links with the potential FT; (ii) farmers who are less likely to become trainees (based on their absence of pre-existing link with the potential FT), henceforth “likely non trainees”. Making sure that we have subsamples representing these two types of dairy farmers should help us to identify indirect impact (“spillovers”) on non trainees.

As the identification of communities and potential FTs is progressive, the survey was completed as a “rolling baseline” which was completed by the end of June 2015. 3127 farmers (including 627 potential FTs and 2500 other farmers) from 627 villages have been successfully interviewed and constitute our main sample.

3. **Select actual FTs by lottery.** A public lottery is then conducted to select about two thirds of the potential FTs (and the corresponding treatment communities) to start with the FT program early (year 1 of program expansion). The corresponding FTs are called “treatment FTs” (or simply, FTs, as they are the only FTs entering the program until year 3). Their communities are called “treatment villages” (vs. “control villages”). The lottery is clustered at the parish level, i.e. groups of about 8 villages are drawn together. This ensures that there is sufficient spatial variation in the implementation of the program: if every farmer had a FT nearby (in particular, if farmers from control villages all had a FT neighbor leaving in a nearby treatment village), then the evaluation would be threatened by pervasive spillovers – the distinction between treatment and control farmers would be blurred, with everybody more or less having access to the program in the first three years. See section 2. We chose to randomize groups of villages, known as parishes. Parishes are administrative units grouping around several villages. The experimental population comprises 80 parishes (with an average of 7.8 villages eligible for the program per parish). Based on our simulation, randomizing parishes strikes a balance between statistical power (that would be maximized by randomizing villages) and the ability to identify spatial spillovers (that requires to randomize larger geographical units, to increase variations in distances to the closest treated village). Standard errors are clustered by parish throughout the analysis. Lotteries were run in three waves (April 2015, August 2015 and September 2015) to limit delays between the progressive identification of potential FTs and the beginning of the program. In each wave, we ran several lotteries in different places yielding a total of 11 separate public lotteries. This allowed representatives of the local communities to participate in the process, but limited our ability to stratify the sample within each lottery. 6 of the 11 lotteries were stratified in two strata based on the characteristics of the FT (number of cows owned); 5 lotteries were not stratified further. In total, pooling lotteries together, we obtain 17 ($= 6 \times 2 + 5$) strata. We will account for stratification by introducing strata dummies in all our regressions. Table 1 describes the experimental sample. The probability of assignment to treatment is close to $2/3$ in the different subsamples and roughly stable across lotteries. Figures 1 and 2 display the map of control and treatment parishes, in the two intervention districts.

Table 1: Lottery summary

	All	Potential FTs	Other farmers
Total	3127	627	2500
Treatment	2051	411	1640
Control	1076	216	860
Proba treatment	0.66	0.66	0.66

Figure 1: Lottery results (Kamuli district)

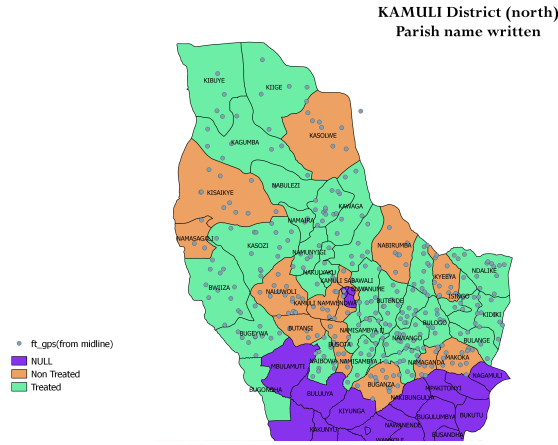
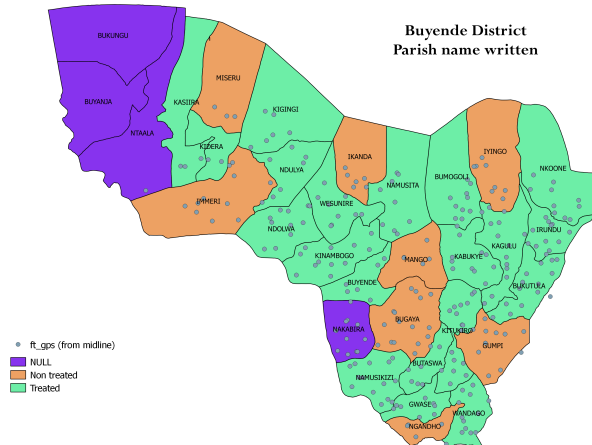


Figure 2: Lottery results (Buyende district)



4. **Follow-up.** Potential FTs from treatment communities receive the initial FT training and the program unfolds (with its variations, see below). The baseline sample (in control and treatment communities) is followed in particular through a midline and an endline survey. The midline survey took place between July and September 2016, and the endline is scheduled for July to September 2017. In addition, basic data on the number of trainers and trainees, and on the technologies discussed were reported by the FT themselves. Additional monitoring data is obtained from reports of the extension agents (for the linkage variation, see below) and attendance to refresher and needs assessment training.

1.2 Variations

In addition to evaluating the FT program as it is, the impact evaluation considers “variations” that are jointly designed by the program staff and the research team to answer operational and research questions. These variations are randomly assigned to subgroups of FTs (orthogonally to each other). Three variations have been retained, based on pilots conducted in 2013-14 in areas covered during the first phase of the FT program and on discussion with representatives of producer organizations and farmers in the Near East.

1.2.1 Incentives

Design of incentive variation:

The variation takes the form of a “**thermometer display**”: a large sign is posted at the FT’s gate, showing the evolution of milk production and number of trainees, along with the name of the FT, his phone number and the picture of a healthy cow.

The key hypotheses with this variation are:

1. *Incentive effect.* FTs should increase training activities, possibly along the extensive margin (number of trainees) and the intensive margin (number and intensity of training actions).
2. *Intrinsic motivation effects.* FTs’ intrinsic motivation may or may not decrease (potential crowding out by extrinsic motivation).

3. *Targeting effect.* FTs should focus their effort on those farmers whose marginal return to training (in terms of milk production) is highest.

1.2.2 Linkage

Protocol for linkage variation:

1. Selected extension agents (EAs) are contracted by the PO to visit the FTs with two goals: providing technical support / additional training to FTs, and helping / monitoring them when setting up their training and visit work plan. They are instructed to review records kept by the FT. They themselves fill out reporting forms that are then reviewed by PO executives.
2. The visits by the EAs occur at the FT demand. More precisely, FTs selected by lottery are given 15 vouchers (allowing one visit per month with some interruptions). They give one voucher to the EA to pay for the visit. The EA then redeems the vouchers at the PO.

The key hypotheses with this variation are:

1. *Quality effect.* FTs' training is completed and verified by EAs.
2. *Monitoring effect.* FTs should increase training activities and/or improve their quality.
3. *Side benefits.* FTs (and possibly trainees) should get private benefits of more frequent EA visits to their farms (artificial insemination, knowledge unrelated to feeding, inputs, personal advice for technology and practice adoption).
4. *Credibility effect.* FTs receiving the visits of EAs maybe inspire more confidence to fellow farmers. They may also have a higher level of self-confidence. This could translate in a spontaneous participation of trainees not directly invited by the FT in subsequent trainings.

1.2.3 Needs assessment

Protocol for needs assessment variation:

1. FTs in the variation receive an additional one-day training every 6 months, to train them to conduct needs assessment (NA) sessions with their trainees. They are provided with a method to follow. The final product is to write individual action plans with the trainees.
2. FTs bring back the individual action plans to the next “needs assessment FT training”. The individual action plans are discussed with program staff, and the needs are taken as a basis for further training of the FTs by program staff.

The key hypotheses with this variation are:

1. *Customization effect.* The NA training should induce FTs to devise training sessions that are more demand driven. One should then expect changes in the contents of the training towards the needs expressed by the trainees. This could just be an adjustment of training contents toward the average demand of the group; it could entail diversification of training topics as well.
2. *Individualization of training format.* Training formats may become more individual (visits at trainees’ farms substituted for group training and visits at trainers’ farms).
3. *Change in perception and in aspirations.* The NA exercise could change the trainees’ perception of the knowledge gap (what they do not know) and of their priorities (what they need to learn).
4. *Increased trainees’ demand.* The adaptation of training contents may reinforce the demand for training on the trainees’ side. This effect might differ across groups of trainees (low-tech vs. high-tech). This may change the structure and dynamics of the group of trainees (just like in the tournament variation).

2 Quantitative evaluation

2.1 Impact of main treatment on the farmer trainer, his trainees and on other members of his communities

Due to randomization, farmers in the control and treatment group are immediately comparable. Simple mean comparisons for any outcome variable identify the FT program impact. Our main specification is based on this principle but uses regression analysis (OLS) to account for stratification and to control for initial outcomes (when available) so as to increase precision.

$$y_{ijs}^{gt} = \alpha^{gt} + \beta^{gt}T_{js} + \delta^{gt}y_{ijs}^{g0} + \mu_s^{gt} + \varepsilon_{ijs}^{gt}. \quad (1)$$

In this equation, y_{ijs} is an outcome variable (e.g. milk production) measured for farmer i in community j which belongs to lottery stratum s . The regression is run primarily on endline data (indexed by $t = 2$), but some measures of take-up and intermediate outcomes are analyzed with midline and endline data ($t = 1, 2$, respectively). Potential FTs and farmers are analyzed separately. In further analysis, we also split farmers between potential trainees ($g = 2$) and likely non trainees ($g = 3$), following sample stratification. T_{js} is the binary treatment variable of interest: it is equal to 1 if community j is treated, 0 otherwise. y_{ijs}^{g0} denotes the baseline value of the outcome, when available. μ_s^{gt} is a stratum (fixed) effect. ε_{ijs}^{gt} is the error term.

β^{gt} gives the average impact of the FT program at time horizon t for subsample g . Technically speaking, it is an “intention-to-treat” (ITT) parameter, in the sense that the fact that your community has a farmer trainer does not tell exactly to what extent you have benefited from the program. This is why it is particularly important to distinguish potential FTs, potential trainees, and likely non trainees. The impact of the FT program on potential FTs (β^{1t}) is the impact of being yourself a FT.¹ The impact of the FT program on potential trainees (β^{2t}) is a mix of the impact of actually becoming trainee and of not becoming trainee but possibly benefiting from program spillover effects (e.g., receive advice from your neighbor who is a trainee). The impact of the FT program on

¹There may be a few exceptions when the potential FT in treated communities does not turn into FT (refuses, does not show up, moves away...).

likely non trainees (β^{3t}) is primarily due to program spillover effects if none of the likely non trainees actually becomes a trainee.

The list of outcomes we plan to consider is given in the next section. Before this, we consider specification issues related to balancing, attrition, and spillovers.

2.2 Balancing and subsample analysis

As explained in section 1, the choice to conduct public lotteries close to the communities limited our ability to stratify the sample. Balancing tests performed after the first wave of lotteries (April 2015) showed some statistically significant differences between treatment and control farmer trainers on the number of cows and total milk production, despite balance on other relevant dimensions (such as socioeconomic background of FTs and farmers, self-reported technology knowledge and use). Whenever possible, lotteries conducted in waves 2 and 3 were stratified according to the FT's cow ownership. Accordingly, balance between treatment and control FTs (and farmers) is obtained on those lotteries, that account for about 2/3 of the sample.

To take into account this partial imbalance, we will check the robustness of estimated impact on final outcomes with and without controlling for baseline measures (as in equation 1), as well on the full sample and on the subsample corresponding to the August and September 2015 lotteries.

2.3 Attrition

Attrition at midline is quite limited (completion rates of surveys are 98.7% among farmers, 97.0% among FTs) and is not significantly different in treatment vs. control groups. We expect attrition to remain low at endline. In that case, our main specifications will provide results treating attrition as random (no selectivity correction). If attrition is significantly higher and unbalanced across experimental groups, we will provide results under standard correction methods (inverse probability weighting and Lee bounds).

2.4 Spillover across villages

Of course, there is no reason why we should expect spillover within villages and no spillover across villages. As noted above when discussing the level of randomization, drawing parishes instead of villages ensures that there is (random) spatial variation in the exposure of villages to treated villages in their neighborhood. This allows to estimate a generalized version of equation 1 that allows for spillovers across villages:

$$y_{ijs}^{gt} = \beta_0^{gt} + \beta_1^{gt}T_{js} + \gamma_{02}^{gt}NT_{js}^{02} + \gamma_{25}^{gt}NT^{25}js + \delta_{02}^{gt}N_{js}^{02} + \delta_{25}^{gt}N_{js}^{25} + \varepsilon_{ijs}^{gt}, \quad (2)$$

where NT^{02} (resp. NT^{25}) are the number of treated FTs within a 0-2 km (resp. 2-5 km) band around the FT – to account for spillover effects, and N^{02} (resp. N^{25}) are the number of potential FTs within a 0-2 km (resp. 2-5 km) band around the FT – to account for the impact of population density, in the same spirit as Miguel and Kremer (04).

Of course, this assumes one model of spatial diffusion among many possibilities, and the 0-2 and 2-5 bands chosen so far are arbitrary. We used that model to perform power computations on a subsample of 175 communities before the first wave of lotteries was conducted. For the final impact evaluation, spillovers across villages add a layer of “model uncertainty” to the uncertainty due to sampling variations.

To account for that uncertainty, we plan to display robustness checks, for the main outcomes, using alternative models for spillovers: no spillover as in equation 1, spillovers as in equation 2, as well as more radical model of diffusion by which any control village located next to a treatment village would receive the treatment:

$$y = \beta_0 + \beta_1T + \beta_{02}T_{02} + \eta, \quad (3)$$

where T_{02} is an indicator variable equal to 1 if there is at least one treated FT withing a 0-2 km band around the FT. This is a model of radical contamination: basically, it assumes that it is enough to have one treated FT within 2 kms in order to receive full spillovers. We used these three alternative models for power computation, and expect to have reasonable statistical power with all of them, given randomization at the parish level.

In addition to these robustness checks, we will try to identify the actual model of spatial diffusion. We will rely on two complementary types of analysis. First, we aim to track the diffusion of information contents that are characteristic of the FT program treatment – a “marker” that would signal spillovers and could come from nowhere else. To that purpose, the FT program team agreed to baptize one fodder shrub they want to promote with a new name: *Gliricidia Sepium* has thus been baptized “Katiti” during the training sessions of FTs. We will therefore be able to check at midline and endline surveys whether control farmers have heard of “Katiti”. If they have, we know that they have been exposed to program spillovers. Second, the endline survey asks farmers about their interactions not only with the (potential) FT in their village, but also with the potential FTs of the 25 neighboring villages, identified by their name, parish and village: did the respondent attend training organized by that person, receive visits by him, or any advice on dairy farming in other circumstances. Qualitative evidence suggests interaction with neighboring FTs is the most prominent way in which spillovers could occur; self-reported information by farmers will allow us to document it in a credible way and, along with the “katiti” marker, allow us to select among models of diffusion.

3. OUTCOMES.

We document below the main outcomes that will be analyzed, and further refer to the survey instrument (in annex) for the full set of variables that is being collected. In addition to considering individual outcomes, we will use aggregate indices and factor analysis to address concerns regarding multiple hypotheses testing.¹

1. Impact: What is the overall effect of the FT program? What are the marginal effects of the incentives? Linkages? Customization?

1.1. On targeted indicators /take up

Take up will be analyzed using both midline and endline data and administrative data.

- FT received training to train fellow farmers in cattle feeding (survey)
- # of trainings organized
 - o by FT in last 12 months (survey, reported by FT);
 - o by FT in last 12 months (survey, reported by farmers);
 - o # trainings organized since start program and change over time (admin data)
- # of farmers trained
 - o Estimated number of farmer trained by FT in last 12 months
 - by combining information on “in general, how many farmers attend training” and number of trainings organized in last 12 months, as reported by FT in survey
 - by combining information on “in general, how many farmers attend training” and number of trainings organized in last 12 months, as reported by farmer in survey
 - o Number of farmers trained, admin data
- # of home visits
 - o # of times FT visited the home of another farmer to talk about dairy farming in last 12 months (survey, FT report)
 - o probability of FT visiting home other farmer (survey , farmer report)
- # of times received advice regarding dairy activities from a fellow farmer (survey)
- Number of feed and feeding practices (out of list of 34 feeds/feeding practices discussed in training of FTs) learned something new or shown how to implement by a farmer from same village (survey)
- Number of feeds for which received seeds or seedlings (survey)
- Number of feeds and technologies covered in FT trainings (admin data, survey)

1.2. On final outcomes of FTs

Endline self-reports

- Milk production and productivity
 - o Whether any milk production on given day in dry season
 - o Total Milk production
 - Total liters in last three days

¹ In order to limit noise caused by variables with minimal variation, questions for which 95 percent of observations have the same value within the relevant sample will be omitted from the analysis and will not be included in any indicators or hypothesis tests.

- Total liters on usual days in each season and average across seasons
- Total liters averaged across usual, good and bad day in each season, and averaged across seasons
- Difference in liters of milk between good and bad day in each season, and averaged across seasons
- o Milk productivity
 - calculated based on data for all cows together
 - Liters/cow in the wet season (average across 2 wet seasons)
 - Liters/cow in the dry season (average across 2 dry seasons)
 - Liters/cow, average across all seasons
 - alternative estimate based on individual data up to 2 cows (dry season)²
 - Total liters last 3 days.
 - Milk produced in 12 months after calving
- o Sales/gifts
 - Total value milk sales (raw and processed) across year
 - Gave away any milk over last year
- o Total Milk profitability: Revenue - Expenditures³, with
 - Revenue calculated as value of annual milk production + earnings from manure, oxen, fees for impregnation of cows
 - Expenditures calculated as sum of
 - All feed expenditures
 - All health expenditures over last 12 months
 - o Reported expenditures for total herd (deworming, spraying against ticks, vaccination, curative measures, vet payments)
 - o Estimated expenditures for cows (artificial insemination or other methods of controlled breeding, vet costs related to calving) based on reported expenditures for up to 2 individual cows, by scaling up expenditures to total number of animals (separately for local and cross breeds)
 - Expenditures for livestock acquisition
 - Expenditures for hired labor (sum of payments in cash and in kind)
 - Expenditures for fencing, paddocking, barns or storage facility
 - Expenditures for extension advise (cash or in kind)
 - Expenditures for compensation animal destruction
- o Milk profitability per cow
 - Based on up to 2 random cows from the herd
 - Revenue calculated as value of annual milk production
 - Expenditures calculated as sum of
 - All health expenditures over last 12 months
 - o Expenditures per cow (vaccination, curative measures, vet

² ITT estimates for these outcomes will include an additional specification controlling for cow breed, age of the cow, and month since calving, as these are all important covariates of milk productivity and could help reduce noise

³ Excluding the cost of family labor

- payments, artificial insemination or other methods of controlled breeding, vet costs related to calving)
 - Share of other expenditures above, proportional to weight in total herd size
- Welfare outcomes
 - o Nutrition
 - Food diversity index (standardized measure)
 - Hunger index (first factor of # meals per day, # meals during hunger gap, # days going to bed hungry)
 - o Education index: weighted sum of standardized measures of
 - Probability of at least one child having to interrupt school for lack of resources
 - Average educational progress (standardized by age)
 - % children enrolled in school
 -
 - o Health: weighted sum of standardized measures of
 - Average # of days sick (unable to do normal activities/work) adults
 - Average # of days sick (unable to do normal activities/work) children

Endline observed measures⁴

- Whether any milk production on day in dry season
- Daily milk production
 - o Total liters
- Daily milk productivity
 - o Total liters/crossbred cows
 - o Total liters/local cow
- Milk quality
 - o Fat content morning milk crossbred cows
 - o Fat content morning milk local cows
 - o Fat content evening milk crossbred cows
 - o Fat content evening milk local cows
 - o Fat content all milk (standardized fat content, weighted by quantity across morning/evening and crossbred/local. Standardized using median and standard deviation of same breed and type (morning or evening))
- Cow observed health status
 - o Milking cow (cross-breed, local, all)
 - Average estimated weight in kg (using weight band measurement and standard conversion from cm to kg)
 - Health index (constructed using factor analysis based on variables of observed health status: body score, unhealthy skin condition, # of abnormal discharges, # signs of ill health, # parasites, abnormal udder, abnormal teats, non-straight back, non-straight legs)
 - o All cows (milking and non-milking) (cross-breed, local, all)
 - Average estimated weight in kg (using weight band measurement and

⁴ ITT estimates for observed outcomes will include an additional specification controlling for cow breed, age of the cow, whether pregnant, and month since calving, as these are all important covariates of milk productivity and could help reduce noise

- standard conversion from cm to kg)
- Health index (constructed using factor analysis based on variables of observed health status as above)

1.3. On final outcomes of potential trainees

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1.4. On intermediate outcomes of FTs

Knowledge

Theoretical knowledge

- Result of knowledge test : 26 questions derived from curriculum training of FT by EADD (sum of correct answers or calculated with IRT)
- Whether know Katiti

Feed recognition

- Number of feeds or feeding practices recognized (out of list of 34 feeds/feeding practices discussed in training of FTs)⁵
- Number of feeds or feeding practices recognized with picture or description (out of list of 34 feeds/feeding practices discussed in training of FTs)
- Aggregate index of feeds and feeding practices recognized using IRT

Expectations on returns

- Indicator on whether answered question regarding expected milk quantity when feeding cows daily with hay in dry season
- expected milk quantity when feeding cows daily with hay in dry season
- difference between actual and expected milk quantity when feeding cows daily with hay in dry season
- Level of confidence regarding expectation for milk quantity when feeding cows daily with hay in dry season
- Indicator on whether answered question regarding expected milk quantity when feeding cows daily with crop residue in dry season
- expected milk quantity when feeding cows daily with crop residue in dry season
- difference between actual and expected milk quantity when feeding cows daily with crop residue in dry season
- Level of confidence regarding expectation for milk quantity when feeding cows daily with crop residue in dry season

Willingness to pay:

- 5 Indicators for willingness to invest in feed or feeding practices promoted in FT training
 - Estimated based on 5 choice lists, in which farmers were asked how they would spend a fixed amount of \$, with choices contrasting feeds or feeding practices versus investment in herd addition, labor, animal health or non-dairy spending.
- Indicator for willingness to invest in feeds rich in protein (caliandra, cotton seed cake)

⁵ FTs are asked all feeds and feeding practices, while other farmers are asked a random subset

- rather than feeds rich in energy (elephant grass, labor for herding)
- WTP index: sum of standardized WTP measures (6 var above)

Practices

- Feeds & practices used for feeding
 - o Use of zero grazing, tethering or paddocking (instead of grazing) for cows
 - o Number of feeds or feeding practices used for feeding (out of list of 34 feeds/feeding practices discussed in training of FTs)
 - o Number of feeds or feeding practices with increased use for feeding in last 12 months (out of list of 34 feeds/feeding practices discussed in training of FTs)
 - o Number of feeds bought in last 3 months, in current dry season, in last dry season (out of list of 34 feeds/feeding practices discussed in training of FTs)
 - o Number of feeds bought in last 12 months (based on answer open question on which feed were bought)
 - o Expenditures for feeds bought in last 3 months, in current dry season, in last dry season (out of list of 34 feeds/feeding practices discussed in training of FTs)
 - o Expenditures for feeds bought in last 12 months (based on answer open question on which feed were bought)
- Feeds planted
 - o Has animal feed planted on farm (scattered or in dedicated area) in last 12 months
 - o Had dedicated area planted with animal feed at least once in last 12 months
 - o Area planted with animal feed over last 12 months
 - o Number of months*area planted with animal feed
 - o Total number of feeds planted over all parcels
 - o Index total number feeds planted times total number parcels times total number of months

Other

- o Water harvesting
 - Average number of times cows have access to water in a day (wet and dry season)
 - Pasture with water source
- o Use of animal manure in last 12 months

Herd composition

- number of cows
 - o total
 - o exotic
 - o crossbreeds
- breed
 - o whether any crossbreed cattle
 - o whether any crossbreed milking cow
 - o average estimated value per cow (heifer, calf) – based on question asking for how much animal could be sold today.
 - o Expenditures for artificial insemination or other methods of controlled breeding
- herd changes

- o Obtained any new livestock in last 12 months
- o Diminished herd size in last 12 months (through sale, exchange, inheritance...)
- o Net value of change in livestock bought versus sold in last 12 months

Investment in other input factors

Land allocation

- o Area dedicated to other crops
- o % of total area farm planted with animal feed

Labor investments

- o Number of hours in last week spend by household members and hired labor on herding, milking, cleaning milk equipment, feeding, watering, spraying and selling milk
- o Number of hours in last 12 months spend by household members and hired labor on clearing the land for pasturing, or fencing paddocks

Health investments

- o # of preventive measures during last 12 months (deworming, spraying against ticks, vaccination)
- o Costs of preventive measures during last 12 months (deworming, spraying against ticks, vaccination)

Dairy asset investments

- o Number of dairy assets owned or PCA (from a list of 14 assets)

Paid extension advise

- o Paid for extension advise for dairy from NAADS, Input supplier, NGO, cooperative/farmer group, fellow farmer, local vet shop, or other

Loans

- o Has taken loan for livestock production(formal or informal)
- o Amount of \$ borrowed for livestock production (formal or informal)

1.5. On intermediate outcomes of potential trainees

idem as 1.4

1.6. On non-targeted indicators

Household level

- Household composition
 - o # of adults in household
 - o # of children in the household
- # of adults with off-farm activity
- Other extension advice
 - o Number of times received advice from NAADS, input supplier, NGO, cooperative or farmer group, local vet shop or other

- Ownership and value other animals
- Crops
 - o Value of harvest other crops
- Planting of other trees
- Savings and transfers
 - o Belongs to formal or informal saving organization
 - o Received transfers

Village level

- positive changes in the village related to the FT program, as reported by FT (descriptive only)
- negative changes in the village related to the FT program, as reported by FT (descriptive only)
- positive changes in the village related to the FT program, as reported by farmers (descriptive only)
- negative changes in the village related to the FT program, as reported by farmers (descriptive only)

2. Interactions: For whom are the program's effects largest?

2.1. Relationship FT – farmer. Are effects larger for farmers in FTs' baseline social network?

The main individual stratification in the sample of farmers is based on whether the farmer was part of the FTs social network as reported at baseline (3 farmers per village) or not (1 farmer per village). We will hence test heterogeneity along this dimension.

2.2. Individual characteristics. For which types of individuals does FT have largest impact? For which types have variations largest impact?

Due to the public nature of the lottery and to the fact that it was conducted at the parish (rather than farmer) level, it was not possible to stratify the sample on other individual characteristics. Despite this, we will look for heterogeneous treatment effects across the following dimensions:

- Initial use of feeds / feeding practices (indicator for use above median value within FT/farmer group at baseline survey)
- Land size (indicator for total land size above median value within FT/farmer group at baseline survey)
- Herd size (indicator for above median number of cows within FT/farmer group at baseline survey)
- Holding crossbreeds (indicator for keeping crossbreeds at baseline survey)

2.3. Village level characteristics.

Part of the sample was stratified based on the number of cows owned by the FT. We will analyze heterogeneity based on these strata, to test whether the program and its different variations are more effective when FTs are larger farmers (i.e. more likely to be considered good examples to emulate, but also potentially with experience and interests in feeding practices less relevant for the small holders). In practice, we will use the whole sample and interact the treatment variable with an indicator variable for the FT having above median number of cows at baseline.

In addition, there is qualitative evidence that the profile of the FT (gender, education and experience with keeping cattle) affects their credibility vis-à-vis farmers. Given the existing variation in baseline data and despite the fact the sample was not stratified along those

dimensions, we will also analyze the interaction effect between the treatment variable and the corresponding indicators (female FT; above median educated FT; above median experienced FT).

3. Mechanisms: Why do the program / variations have an effect?

Reports by farmers and farmer trainers about various aspects of the FT program will be analyzed to understand the mechanisms of the main program effects, as well as the effects of the different variations, using the questions collected in section 2.5 and section 5 of the questionnaire (see attach). This will include both descriptive analysis (e.g. on the advantages and disadvantages of sign posts, EA visits etc), as well as ITT estimates (on number of trainings, whether training useful for your needs, etc). Differences in variables on take-up (see 1.1) will also be used to understand mechanisms.

In addition, and with regard to shedding light on the different hypotheses regarding main effects and variations we will analyze:

3.1. Knowledge

- Knowledge FT (see above)
- Answer to individual knowledge questions (FT and farmers)

3.2. Effort/social motivation FT

- Importance of helping others as driver of effort by FT, as reported by FT (marks out of 20)
- Importance of helping others as driver of effort by FT, as reported by farmers (marks out of 20)
- Pro-social motivation (first factor of 6 questions in section 4.1, as reported by FT)

3.3. Credibility FT

- How knowledgeable is FT regarding feeding practices according to farmers
- How knowledgeable is FT regarding other aspects of dairy farming according to farmers

3.4. Higher quality information

- o Number of feeds or feeding practices for which received advice from extension agent/vet

3.5 Customized information

We will analyze to what extent knowledge, reports on specific technologies taught and used differ depending on baseline amount of land and animals, using different indicators discussed above, as well as individual questions by feed and feeding practice. In addition, two direct questions will be used to gauge customization:

- how helpful is the advice FT gives to other farmers
- has FT ever talked to you individually about practices that would be most suited for your farm, given the amount of land and animals you have

3.6 Monitoring of FT by EA

- EA participated to trainings by FT

3.7. (Social) interactions / changes in social network

Interactions about dairy farming

- Likelihood of talking to someone in the village about dairy farming, asking advice about dairy farming, cattle feeding
- # of people in village talked to about dairy farming, asking advice about dairy farming, cattle feeding

General interactions and leadership

- Household holds local leadership position (in LC1, LC2, LC3, volunteer position in village, or other leadership position/service provider to community)
- Household participates in credit/saving group in village

3.8 Expectations on returns by FT

- defined as above

3.9 Willingness to pay by FT

- defined as above

3.10 Change in reported ways of learning

- learned from different sources (farmer from same village, farmer from other village, farmer that received training, extension agents, other trainers)
- received info from different sources

3.11 Access to other sources of support: Extension agent, CFs, CAVEs

ENDLINE
This version: July 15, 2017

Note: this is the final version of the questionnaire of the Endline survey

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Introduction:

Hello my name is _____. I am working with Gaplink, a Kampala based research and development organization that has been working in this area for the past 3 years. We are currently conducting a research on the East Africa Dairy Development (EADD) Project that aims at increasing small holder farmer's revenue through improving dairy productivity.

Your village was selected to benefit from the EADD project so we would like to ask you to participate in answering some questions about your household as well as experience with the program. There is no right or wrong answer and all your responses will be kept confidential and only accessible to Gaplink and the researchers who are involved in the study. No information about your household will appear on any media. Your participation in the study is completely voluntary and you can tell me when a question makes you uncomfortable and I will skip it. The questions should take about 2 hours.

Q1. **[consent]** Are you willing to take part in this survey?

1=Yes

0=No >> ask for another respondent and restart

Thank you for the time and attention that you will dedicate in answering the next set of questions.

Q2. **[pid]** PID

Q3 **[enum]**. Enumerator Name

Tick your name

Q3b. **[enum_oth]** Please specify your name

Q4. **[old_district_confirm]** The household is in ... district. Is this correct?

1=Yes >> Q5

0=No

Q4b. **[s1a_1q]** District

- Buyende
- Kamuli

Q4b. **[s1a_1q_other]** Please specify other

Q5. **[old_subcounty_confirm]** The household is in ... sub-county. Is this correct?

1=Yes >> Q6

0=No

Q5b. [s1a_2q]Sub-county

Q6. [old_parish_confirm]The household is in ... parish. Is this correct?

1=Yes >> Q7

2=No

Q6b. [s1a_3q]Parish/Ward

Q7. [old_village_confirm]The household is in ... village. Is this correct?

1=Yes >>Household overview

0=No

Q7b. [s1a_4q] Village

Section 1. HOUSEHOLD OVERVIEW

*[TO BE ANSWERED BY HEAD OF HOUSEHOLD AND IN HIS/HER ABSENCE,
BY AN ADULT MEMBER OF THE HOUSEHOLD]*

1.1 HOUSEHOLD IDENTIFICATION PARTICULARS

[s1a_6q]Name of Household head? Name _____
[s1a_6q_ii]The name of the household head in the last survey wave was You have entered a different name. Do you confirm that is the current household head?
[s1a_6q_iii]Why is the household head different now? 0=Same person but different name spelling 1= The former household head died 2= The former household head is too old 4= Household head name appears Omitted in baseline list. 3= Other
Enumerator, please enter baseline household head as an ADDITIONAL member of the household in addition to other new members. (If omitted in baseline list) [s1a_8q]HH Head Telephone Number : [s1a_9q]Immediate Contact Number 2: [s1a_9bq]Immediate Contact Number 3:

1.2 HOUSEHOLD ROSTER

Read: We will now check whether the members of the household who were present last year are still there or not.

R E S P O N D E N T I D	P E R S O N I D	Let's talk about [NAME] 1. [old_m_stillthere_x] Is [NAME] still a member of this household?	2. [old_m_age_confir m_x] [NAME] is AGE years old. Is this information correct?	3. [old_m_age_corr_x] How old is [NAME]? (>>next person)	4. [old_m_whynot_x] Why is [NAME] not a member of this household anymore? 1=Migrated 2=Married (>>next member / section) 3=Passed away (>>next member/ section) 4=Other [Specify]	5. [old_m_whymig_x] Why did [NAME] move away? 1=look for work 2= other income reasons 3=drought/flood 4=eviction 5=land related problems 6=illness, injury 7=disability 8=education 9=marriage 10=divorce 11=escape insecurity 12=return home from displacement 13=abduction 14=follow/join family 15=other [Specify]
		1=yes 0=no (>>4)	1=yes (>>next person) 0=No			
	01					
	02					
	03					
	04					
	05					
	06					
	...					

1.3 GENERAL INFORMATION ON NEW HOUSEHOLD MEMBERS

6.[NB_new_m] How many additional household members currently live in this household?

7a. [new_m_fn ame_x] First name of the new household member?	7b. [new_m_ lname_x] Lastnam e of the new househol d member ?	8a. [new_m_se x_x] [NAME]'s sex1= Male 2=Female 8b. [new_m_ag e_x] [NAME]'s age	9. [s1_4q_x] What is the relationship of [NAME] to the head of the household? 1= Head 2= Spouse 3= Son/daughter 4= Grand child 14= Spouse of son/daughter 5= Parent of head or spouse 6= Sister/Brother of head or spouse 7= Nephew/Niece 8=Step child 9=Adopted child 10= Other relatives 11= Servant 12=Hired worker 13= Non-relative 99= Other (specify)	10. [s1_6q_x] Marital status of [NAME]? 1= Married monogamou sly 2= Married polygamous 3=Informal loose union 4=Divorced /Separated 5= Widow/ Widower 6= Single	11. [s1_7q_x] Was [NAME] born in the village? 1=Yes (>> next person) 0=No	12. [s1_9q_x] How many years has [NAME] lived in this place/villag e? <i>IF <1 YEAR, RECORD 00</i>	13. [s1_11q_x] What was the main reason [NAME] moved to the current place of residence? 1= To look for work 2= Other income reasons 3= Drought, flood or other weather related condition 4= Eviction 5= Other land related problems 6= Illness, injury 7= Disability 8=Education 9= Marriage 10= Divorce 11= To escape insecurity 12= To return home from displacement 13= Abduction 14= Follow/join family 15= Other (specify)

1.4 EDUCATION AND HEALTH OF OLD AND NEW HOUSEHOLD MEMBERS

SKIP IF OLD MEMBER	SKIP IF OLD MEMBER	ALL	ALL	ALL
14. [new_s1_15q_n_x] Has [NAME] ever attended any formal school? 1= Yes 0= No 2=Too young >> 18	15. [new_s1_20q_n_x] What was the highest grade that [NAME] completed?	16. [old_m_enrol_x] [new_m_enrol_x] Is [NAME] currently enrolled at school 1= Yes 0= No	17. [old_interrupted_edu_x] [new_interrupted_edu_x] In the last 12 months, has [NAME] interrupted school because you were unable to pay school fees or materials? 1= Yes 0= No	18. [old_s1_21q_n_x] [new_s1_21q_n_x] In the past 30 days, how many days has [NAME] been unable to do normal activities /work due to illness or bad health? Number of days (all)

1.5 LABOUR FORCE STATUS (for all household members 10 years and above)

We would like to know now the off-farm labor activities of men, women and children in the household, being 10 years old and above. It is important not to confuse labor activities with a person's main activity. A person's main activity may be to be a housewife or a student, but they may have other secondary labor activities that should be recorded. We are interested in the labor activity of the household members.

R E S P O N D E N T I D	P E R S O N I D	1. [old_s1_28q_x] [new_s1_28q_x] During the last 12 months did [NAME] have any off-farm labor activity? 1=Yes 0=No >> next person	2. [old_s1_28aq_x] [new_s1_28aq_x] During the last 12 months what was the main off-farm labor activity of [NAME]? 1=Labourer in someone else's farm 2=Work in service sector (e.g. shop or transportation worker) 3=Work in crafts and artisanal (e.g. plumbing, masonry, welding, carpentry) 4=Work in industry (e.g. plant worker) 5=Work in government sector (e.g. teacher, extension worker, nurse, civil servant) 6=Work in business sector (e.g. business owner) 7=Work in petty trading (e.g. kiosk operators, milk vending) 8=Casual labourer/independent work (e.g. charcoal burning) 99=Other (Specify [old_s1_28bq] [new_s1_28bq])	3. [old_s1_30q_x] [new_s1_30q_x] In the last 12 months, how many months did [NAME] dedicate to this activity? Number of months	4. [old_s1_30qbis_x] [new_s1_30qbis_x] In a typical month, how many days did [NAME] dedicate to this activity? Number of days
	1				
	2				
	3				
	4				
	5				
	6				
	7				

Section 2. DAIRY ACTIVITIES

The respondent to the rest of the survey should be a person who is knowledgeable about dairy activities in the household. In the case of some households, we have a specific person in mind whom we would like to interview, and want you to make your best effort to have this person respond. To help you to get the right respondent, the tablet displays one of the following screens:

Case where we do not have a specific respondent in mind:

In the rest of this survey, I would now like to ask questions about the dairy farming activities of your household -- what animals you raise, who takes care of them, how much milk you get from your cows, etc. These activities may be run by other members in the household who might find it easier to answer these questions. In that case, could you please suggest someone to whom we could ask those questions?

Case where we have a specific respondent in mind. In that case, the screen displays two possibilities depending on whether you are already talking to the right respondent. Read the appropriate one:

If the current respondent is [FT NAME], please read

In the rest of this survey, I would now like to ask YOU questions about the dairy farming activities of your household -- what animals you raise, who takes care of them, how much milk you get from your cows, etc. I would like to thank you again for your time with this.

If the current respondent is not [FT NAME], please read

In the rest of this survey, I would now like to ask questions about the dairy farming activities of your household -- what animals you raise, who takes care of them, how much milk you get from your cows, etc. Would [FT NAME] be available to answer those questions and could you please call this person for us?

What is the name of the household member responding to this section?

[s2_respondent] ENUMERATOR: select the name of the household member responding to this section

2.1 HERD

2.1.1 CATTLE ROSTER

Q1. [livestock_own] In the last 12 months has any member of your household kept any livestock such as cows, calves, heifer, bulls, oxen? 1=Yes 0=No

ENUMERATOR, probe further. Are you certain that this household has not kept any cattle in the last 12 months?

[livestock_own2] In the LAST 12 MONTHS, has anyone in your household kept any exotic/cross or indigenous cattle (such as cows, heifers, calves, bulls, oxen)? 1=Yes 0=No

Q2. [reason_livestock] What is the main reason for keeping livestock?

1=self-consumption of milk

2=income generation from milk sales

3=income from animal sales

4=other income reasons (manure sale, rent out oxen)

5=security/insurance

6=input for agricultural activity

7=family tradition

8=source of wealth

9=social status

99=other [Specify]

	4a. [LSTYPE_dummy_x] In last 12 months, has any member of your household kept any [LIVESTOCK]? 1= Yes 0= No >> next livestock type	4b. [LSTYPE_experience_x] How many years of experience does your household have with keeping [LIVESTOCK]? Number of years	5. [q4_x_y] In the LAST 12 MONTHS, has your household kept 1= Yes 0= No >> next livestock type How many 5a. [m_livestock_x_y] Male 5B.[f_livestock_x_y] Female	6. [behalf_x_y] Do you keep the [LIVESTOCK] on behalf of someone else? 1=Yes, for some of them 2=Yes, for all of them >> 9 0=No	7. [s2_ss1_who_livestock_x_y] Which members of the household OWN the [LIVESTOCK]? IDs	8. [value_sale_x_y] If you were to sell one of your OWN [LIVESTOCK] today, how much would you receive from the sale? UShs
Exotic						
Calves						
Bulls						
Oxen						
Heifer						
Cows						
INDIGENOUS						
Calves						
Bulls						
Oxen						
Heifer						
Cows						

Q10. [your_behalf] In addition to the cattle you have kept in your household, do you own any cattle that was kept on your behalf outside of your household during the whole period?

Hint: Enumerator, avoid double counts: do not record here animals that were first kept by HH during the past 12 months, then let away to be kept by someone else. But include any calf that was born outside of your household and then kept on your behalf.

1 = Yes

0 = No >> Q13

	Q11. [your_behalf_kept_x] Do you own any [LIVESTOCK] that is kept on your behalf by someone on another farm? 1= Yes 0= No >> next livestock type	Q12. How many [LIVESTOCK] male and female does your household own that is kept by someone else on another farm? 5a. [m_livestock_kept_x_y] Male 5b. [f_livestock_kept_x_y] Female		
EXOTIC/CROSS				
Calves				
Bulls				
Oxen				
Heifer				
Cows				
INDIGENOUS				
Calves				
Bulls				
Oxen				
Heifer				
Cows				

Type of Livestock	13. [s2illdie_x] During the past 12 months, how many of your [LIVESTOCK] died?	14a. [s2exchyeshesno_x] During the past twelve months, did you exchange some [LIVESTOCK]? 1= Yes 0= No >> 15	14b. [s2exch1_type_x_y] During the last 12 months, did you receive any [LIVESTOCK] [TYPE_LIV] from an exchange? 1= Yes 0= No >> 14d	14c. [s2exch1_type_num] During the last 12 months, how many [LIVESTOCK] [TYPE_LIV] did you RECEIVE from an exchange? 1= Yes 0= No >> 14f	14d. [s2exch2_type_x_y] During the last 12 months, did you GIVE any [LIVESTOCK] [TYPE_LIV] for an exchange? 1= Yes 0= No >> 14f	14e. [s2exch2_type_num_x_y] During the last 12 months, how many [LIVESTOCK] [TYPE_LIV] did you GIVE for an exchange? 1= Yes 0= No >> 14i	14f. [s2exch1_type_oth_x] During the last 12 months, did you receive any other [LIVESTOCK] from an exchange? 1= Yes 0= No >> 14i	14g. [s2exch1_typeothname_x] Please specify other	14h. [s2exch1_type_num_oth_x] During the last 12 months, how many any other [LIVESTOCK] have you RECEIVE D from an exchange?	14i. [s2exch2_type_oth_x] During the last 12 months, did you give any other [LIVESTOCK] for an exchange? 1= Yes 0= No >> 15/next type	14j. [s2exch2_typeothname_x] Please specify other	14k. [s2exch2_type_num_oth_x] During the last 12 months, how many any other [LIVESTOCK] did you give for an exchange?	15. [s2giftgive_x] During the past 12 months, how many [LIVESTOCK] were given away as gifts or inheritance?	16. [s2giftreceive_x] During the past 12 months, how many [LIVESTOCK] were received as gift or inheritance?	17. [s2buytoraise_x] Did you buy any [LIVESTOCK] to raise during the past 12 months?		
															[s2buytoraise_x] Total purchase value of all bought in the last 12 months IF NONE WRITE 0 INCLUDING VALUE OF IN-KIND PAYMENTS US\$		
EXOTIC /CROSS																	
INDIGENOUS																	

Type of Livestock	18.[s2_male_x]In the past 12 months, how many MALE [LIVESTOCK] calves have been born ?	19.[s2_female_x]In the past 12 months, how many FEMALE [LIVESTOCK] calves have been born ?	20. [s2sell_m_calf_x] Did you sell any of your MALE [LIVESTOCK] calves in the last 12 months? 1=yes 0=no >>23	21. [s2_number_mcalf_x] How many male [LIVESTOCK] calves did you sell in the LAST 12 MONTHS?	22. [s2_money_mcalf_x] How much did you sell your male [LIVESTOCK] calves for in the LAST 12 MONTHS?	23.[s2sell_fcalf_x] Did you sell any of your FEMALE [LIVESTOCK] calves in the last 12 months? 1=yes 0=no >> 26	24. [s2_number_fcalf_x] How many female [LIVESTOCK] calves did you sell in the LAST 12 MONTHS?
EXOTIC/CROSS							
INDIGENOUS							

Type of Livestock	25.How much did you sell your FEMALE [LIVESTOCK] calves for in the LAST 12 MONTHS? [s2_money_fcalf_x] Female	26. [s2sell_male_x] Did you sell any other MALE [LIVESTOCK] in the last 12 months? 1=yes 0=no >>29	27. [s2sell_male_num_x] How many any other MALE [LIVESTOCK] did you sell in the LAST 12 MONTHS?	28. [s2sellvalue_male_x] Total sale value of all other MALE [LIVESTOCK] sold in the last 12 months (INCLUDING VALUE OF IN-KIND PAYMENTS) UShs	29. [s2sell_female_x] Did you sell any other FEMALE [LIVESTOCK] in the last 12 months? 1=yes 0=no >>32	30. [s2sell_female_num_x] How many any other FEMALE [LIVESTOCK] did you sell in the LAST 12 MONTHS?	31. [s2sellvalue_female_x] Total sale value of all other FEMALE [LIVESTOCK] sold in the last 12 months (INCLUDING VALUE OF IN-KIND PAYMENTS) UShs	32. [pasture_x] How do you pasture your [LIVESTOCK]? 1=zero grazing 2=tethering 3=paddock 4=grazing on farmer's own land 5=grazing on public land 9=Other
EXOTIC/CROSS								
INDIGENOUS								

33. [water_acc_dry] How many times a day do your cows have access to water in the current dry season, july-august 2017?
(answer options: 1, 2, 3, all the time, No cows in that period, other[Specify] [water_dry_oth])

34. [water_acc_wet] How many times a day did your cows have access to water in the last wet season, march-june 2017?
(answer options: 1, 2, 3, all the time, No cows in that period , other[Specify] [water_wet_oth])

2.1.2 MILK PRODUCTION

We are now going to ask you about your milk production over the past year for all cows you kept. As you know, milk production sometimes fluctuates quite a bit, so we will have to ask you questions about different periods.

1a-[s3milk_produce] Have you produced any milk in this household in the past 12 months?

1=yes >> 2

0=no

ENUMERATOR, PLEASE PROBE FURTHER. ARE YOU CERTAIN THE RESPONDENT HAS NOT PRODUCED ANY MILK IN THIS HOUSEHOLD IN THE PAST 12 MONTHS?

1b-[s3milk_produce2] Have you produced any milk in this household in the past 12 months?

1=yes >> 2

0=no>> question 55

[s3milk_produce3]2-Did you collect milk in the past three days? Y / N(>>question 12)

[s3milk_prodyes1a]3a- Did you collect milk yesterday morning? Y/N (if No>>4a)

[s3milk_prodyes1b]3b- At what time ? _____ time

[s3milk_prodyes2a]4a- Did you collect milk yesterday evening? Y/N (if No>>5a)

[s3milk_prodyes2b]4b- At what time ? _____ time

[s3milk_prod2day1a]5a- Did you collect milk the day before yesterday morning? Y/N (if No>>6a)

[s3milk_prod2day1b]5b- At what time ? _____ time

[s3milk_prod2day2a]6a- Did you collect milk the day before yesterday evening? Y/N (if No>>7a)

[s3milk_prod2day2b]6b- At what time ? _____ time

[s3milk_prod3day1a]7a- Did you collect milk three days ago in the morning? Y/N (if No>>8a)

[s3milk_prod3day1b]7b- At what time ? _____ time

[s3milk_prod3day2a]8a - Did you collect milk three days ago in the evening? Y/N (if No>>9a)

[s3milk_prod3day2b]8b - At what time ? _____ time

[min_morning_yesno]In the last 14 days, did you ever milk before [TIME] in the morning ? Y/N

[min_morning] - At what time ? _____ time?

[min_evening_yesno]In the last 14 days, did you ever milk before [TIME] for the evening ? Y/N

[min_evening] - At what time ? _____ time?

[s3milk_muchyest] What was the total quantity you collected from your herd yesterday, considering both the morning and evening milk? (SKIP if 3a=0 & 4a=0) 	[s3milk_muchyest]..... total quantity	9	
	[s3milk_muchyest_b] unit..... (1- Cup 2-Liter >>q10)		
	[s3milk_muchyest_c] Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup)		
[s3milk_much2days] What was the total quantity of milk you collected from your herd the day before yesterday, considering both the morning and evening milk? (SKIP if 5a=0 & 6a=0)	[s3milk_much2days]..... total quantity	10	
	[s3milk_much2days_b]..... Unit (1 Cup 2 Liter>>q11) (Enumerator, probe if unit given is different from the one given at first)		
	[s3milk_much2days_c] Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3milk_much3days] What was the total quantity you collected from your herd three days ago, considering both the morning and evening milk? (SKIP if 7a=0 & 8a=0)	[s3milk_much3days]..... total quantity	11	
	[s3milk_much3days_b]..... Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	[s3milk_much3days_c] Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		

In the current dry season, from July 2017 to August 2017			
[s3dry_numcows] How many cows produced milk during the current dry season?	Number (if 0 >> q23)	12	
	[s3dry_q1] Quantity	13	

[s3dry_q1]In the current dry season, what was the total milk quantity collected from the herd on a usual day?	[s3dry_q1_b]..... Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	[s3dry_q1_c] Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3dry_q2]In the current dry season, what was the total milk quantity collected from the herd on a good day?	[s3dry_q2] Quantity	14	
	[s3dry_q2_b]..... Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	[s3dry_q2_c] Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3dry_q3]In the current dry season, what was the total milk quantity collected from the herd on a bad day?	[s3dry_q3] Quantity	15	
	[s3dry_q3_b] Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3dry_sell_usual] How much milk did you sell on a usual day during the current dry season, from July-August 2017?	Quantity (if 0 >>19a)	16	
	[s3dry_sell_usual_b] Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3dry_earnusual] How much did you earn from selling milk on a usual day during the current dry season, from July-August 2017?	(UShs)	17	
[s3dry_price_acknowledge]ENUMERATOR, it means that on average one [UNIT] of milk on a usual day in the current dry season was sold at ... UShs. Can you confirm that? If not, go back and make a change.		18	
[s3dry_process] In addition, did you sell any processed milk products you produced such as Yoghurt, Bongo, or Ghee in the current dry season?	1=Yes 0=No (>>20)	19a	
What is the total value of processed milk product you sold in the current dry season?	[s3dry_processvalue] UShs	19b	
	[s3dry_processunit] Per	19c	
	1=Day 2=Week 3=Month		

	4=The whole season		
[s3dry_products] What type of milk products did you sell?	1=Yogurt 2=Cheese 3=Butter 4=Ghee 5=Bongo 6=Other (specify)	19d	
[s3dry_forhome] Did you keep any milk for the consumption of your household on a usual day during the current dry season?	1=Yes 0=No (>>22)	20	
[s3dry_litrehome] How many liters did you keep for the consumption of your household on a usual day during the current dry season?	Quantity	21	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_dry_give] Did you give any milk away as gift or in exchange of services?	1=yes 0=No (>>23)	22a	
[s3_dry_daily_occ] During the current dry season, from March –May 2017, did you give milk away as gift or in exchange of services daily or occasionally?	1=daily 2=occasionally (>>22d)	22b	
[s3_dry_given_amount] How many liters were given away as gift or in exchange of services daily?	 Quantity	22c	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first) (>>23)		
[s3_dry_given] How many liters were given away in the current dry season from July to August 2017?	 Quantity	22d	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		

In the last wet season (March 2017 - June 2017)

[s3wet_numcows] How many cows produced milk during the last wet season, from March to June 2017?	Number_(if 0 >>question 34)	23	
[s3wet_q1] In the last wet season, what was the total milk quantity collected from the herd on a usual day?	Quantity	24	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3wet_q2] In the last wet season, what was the total milk quantity collected from the herd on a good day?	Quantity	25	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3wet_q3] In the last wet season, what was the total milk quantity collected from the herd on a bad day?	 Quantity	26	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3wet_sell_usual] How much milk did you sell on a usual day during the last wet season, from March to June 2017, considering both the morning and evening milk?	Quantity	27	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3wet_earnusual] How much did you earn from selling milk on a usual day during the last wet season, from March to June 2017?	(UShs)	28	
ENUMERATOR, it means that on average one [UNIT] of milk on a usual day in the last wet season was sold at ... UShs. Can you confirm that? If not, go back and make a change.		29	
[s3wet_process] In addition, did you sell any processed milk products such as Yoghurt, Bongo, or Ghee in the last wet season?	1=Yes 0=No (>>31)	30a	
[s3wet_products] What type of processed milk products did you sell?	1=Yogurt 2=Cheese	30b	

	3=Butter 4=Ghee 5=Bongo 6=Other (specify)		
What is the total value of processed milk product you sold during the last wet season?	[s3wet_processvalue] UShs	30c	
	[s3wet_procesunit] Per 1=Day 2=Week 3=Month 4= The whole season	30d	
[s3wet_forhome] Did you keep any milk for the consumption of your household on a usual day during the last wet season, from March to June 2017?	1=Yes 0=No(>>33)	31	
[If yes to previous question] [s3_litrehome] How many liters did you keep for the consumption of your household on a usual day during the last wet season, from March to June 2017?	----- Quantity	32	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_wet_give] During the last wet season, from March to June 2017, did you give any milk away as gift or in exchange of services?	1=yes 0=No(>>34)	33a	
[s3_wet_daily_occ] During the last wet season, from March to June 2017, did you give milk away as gift or in exchange of services daily or occasionally?	1=daily 2=occasionally (>>33d)	33b	
[s3_wet_given_amount] How many liters were given away as gift or in exchange of services daily?	Quantity	33c	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first) (>>34)		
	Quantity	33d	

[s3_wet_given] How many liters were given away as gift or in exchange of services in total in the last wet season, from March to June 2017?	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
In the last dry season (December 2016- February 2017)			
s3ldry_numcows] How many cows produced milk during the last dry season, from December 2016 – February 2017?	(if 0 >>question 41)	34	
[s3ldry_q1]In the last dry season, what was the total milk quantity collected from the herd on a usual day?	quantity	35	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3ldry_q2]In the last dry season, what was the total milk quantity collected from the herd on a good day?	quantity	36	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3ldry_q3]In the last dry season, what was the total milk quantity collected from the herd on a bad day?	quantity	37	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_ldry_sell_usual] How much milk did you sell on a usual day during the last dry season, from Dec 2016-Feb 2017?	quantity	38	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_ldry_earn_usual] How much did you earn from selling milk on a usual day during the last dry season, from Dec 2016- Feb 2017?	(UShs)	39	
ENUMERATOR, it means that on average one [UNIT] of milk on a usual day in the last dry season was sold at ... UShs. Can you confirm that? If not, go back and make a change.		40	

In the previous wet season (September-November 2016)			
[s3pwet_numcows]How many cows produced milk during the previous wet season, from September 2016 – November 2016?		41	
[s3pwet_q1]In the previous wet season, what was the total milk quantity collected from the herd on a usual day?	quantity	42	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3pwet_q2]In the previous wet season, what was the total milk quantity collected from the herd on a good day?	quantity	43	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
	Precise the type of cup..... (1- Mug (half a liter) 2-Small Cup) (if not asked so far)		
[s3pwet_q3]In the previous wet season, what was the total milk quantity collected from the herd on a bad day?	quantity	44	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_pwet_sell_usual] How much milk did you sell on a usual day during the previous wet season, from September to November 2016?	quantity	45	
	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		
[s3_pwet_earn_usual] How much did you earn from selling milk on a usual day during the previous wet season, from September to November 2016?	(UShs)	46	
ENUMERATOR, it means that on average one [UNIT] of milk on a usual day in the previous (2016) wet season was sold at ... UShs. Can you confirm that? If not, go back and make a change.		47	

Now I would like us to talk about your experience in the last 12 months with selling the milk that you produce

[s3milk_sell] Did you sell milk in the last 12 twelve months?	1=Yes 0=No (>>55)	48a					
[s3milk_localcoop] Do you usually sell your milk to a local cooperative	1=Yes 0=No => 50	48					
What was the price per liter in the cooperative in	[s3milk_pricecoopa] the current dry season? UShs	49a					
	[s3milk_pricecoopb] the last wet season? UShs	49b					
[s3milk_elsewhere] Do you also sell your milk elsewhere?	1=Yes 0=No (>>53)	50					
[s3milk_whereelse] Where else do you sell your milk? <i>[probe for both morning and evening milk]</i>	2= Private company collector 3= Private trader 5= Consumer at market 6= Neighbor/ Relative 9= Other (specify) Circle all those apply	51	2 - 3 - 5 - 6 9				
What was the price per liter in	[placedry_price_x] the current dry season? UShs	52a	2	3	5	6	9
	[placewet_price_x]the last wet season? UShs	52b	2	3	5	6	9
How much income do you get from selling your milk in a usual month of...	[income_usual_dry_x] the dry season? UShs	53a					
	[income_usual_wet_x] the wet season? UShs	53b					
[income_last_month] What was your income last month from selling milk?	UShs	54					

55 In the last 12 months, considering all your cattle, did you earn some money from

- 55a[earn_manurea] Sale of manure? (1-Yes 0-No (>>55b))
- 55b[earn_oxena] Hiring out oxen? ? (1-Yes 0-No (>>55c))
- 55c[earn_impregna] Fees for impregnation of cows? ? (1-Yes 0-No (>>56))

[earn_manureb]how much?.....

[earn_oxenb]how much?.....

[earn_impregnb]how much?.....

56a. [spend_compensationa] In the last 12 months, considering all your cattle, did you have to pay compensations for animal destructions of other farmer's crops? (1.YES 0. NO (>>next subsection))

56b. [spend_compensationb] How much did you pay ?

2.1.3 HEALTH

1. [s2deworm] During the past 12 months have you used anthelmintics (deworming) on your livestock? 1= Yes 0= No >> 4	2. [s2deworm_type] Was the treatment for exotic animals, local animals, or both? 1=exotic/cross 2=indigenous 3=both	3. [s2dewormcost] What was the cost of using anthelmintics (deworming) for all your livestock? Ushs	4. [s2spraydip] During the past 12 months were your livestock sprayed/dipped against ticks? 1= Yes 0=No >> 8	5[s2spray_type] Was the treatment for exotic animals, local animals, or both? 1=exotic/cross 2=indigenous 3=both	6. [s2whospraydip] Who provided the service for the livestock? 1= Private Vet 2= Public governmental Vet/Animal health worker 3= Extension Agent 4=Farmer trainee 5=Other farler from the village 6=CAVE 7=Members of the HH 9= Other [Specify]	7. [s2spraycost] What was the cost of spraying your livestock against ticks? Ushs
---	---	---	---	--	---	---

Type of Livestock	8. [s2_vaccine_oth_x] Are your [LIVESTOCK] vaccinated? 1= Yes 0=No >> 11	9. [s2vaccinecost_oth_x] What was the cost of vaccinating your [LIVESTOCK]? In the past 12 months Ushs	10.[s2vaccinecost_oth_cow_x] How much of this went to the [LIVESTOCK] cows (as opposed to calves, heifers or bulls)? UShs 999 I cannot put aside the share of the cows 888 Only cows were actually vaccinated	11. [s2curative_oth_x] During the past 12 months did your [LIVESTOCK] receive curative treatments. 1= Yes 0= No >> 14	12. [s2curativecost_oth_x] What was the cost of providing the curative treatment for your [LIVESTOCK]? (Please include both the cost of the medicine and the cost of the visit) Ushs 888= the cost is included in vaccination or other costs already noted	13. [s2curativecost_oth_cow_x] How much of this was for the [LIVESTOCK] cows (as opposed to calves, heifers or bulls)? UShs 999 I cannot put aside the share of the cows 888 Only cows got curative treatments
EXOTIC/CROSS						
INDIGENOUS						

Type of Livestock	14. [s2healthstate_oth_x] During the past 12 months, did anybody check the health status of [LIVESTOCK] without providing treatment? 1=Yes 0=No >> next line	15. [s2healthcost_oth_x] What was the cost of checking the health status of your [LIVESTOCK]? Ushs 888= the cost is included in vaccination or other costs already noted	16. [s2healthcost_oth_cow_x] How much of this was for checking [LIVESTOCK] cows (as opposed to calves, heifers or bulls)? UShs 999 I cannot put aside the share of the cows 888 Only cows were actually checked
EXOTIC/CROSS			
INDIGENOUS			

2.2 COW ROSTER

Now , I would like us to talk more specifically about the cows in your herd of cattle.

1.[nb_cows1] How many COWS does your household keep now? (Enter the number given by the respondent)

If > 10 >> ENUMERATOR, we are now going to enter the names of up to 10 cows. IF MORE THAN TEN COWS, Please enter the names of first MILKING CROSS-BRED, then MILKING INDIGENOUS, then NON-MILKING CROSS-BRED, and lastly NON-MILKING INDIGENOUS cows.

COW	2. [cow_name_x] Name of cows	4. [milking_x] Is [COW] milking?	5. [ind_exo_x] Is [COW] indigenous or exotic/cross bred?	6. [age_cow_x] How old is [COW] ?	7. [years_cow_x] For how many years have you owned or kept [COW] ?	8. [obtain_cow_x] How did you get [COW] ? 1=Naturally born after artificial insemination >> 12 2=Naturally born after natural conception >> 12 3=Purchased on a local market >>9 4=Purchased in another region >>9 5=Inherited >> 12 6=Received as a gift >> 12 7=Received as part of the brides price [as wedding gift] >> 12 8=Received from an aid program >12 9=Given by the owner for caretaking only >> 12 10=Exchange >>12 11=Purchased from a relative/fellow farmer >>10 19=Other >> 10	9. [pregnant_cow] Was [COW] pregnant when you bought her ?	10. [cost_cow] How much did you pay for [COW] ?
1								
2								
3				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
4				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
5				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
6				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
7				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
8				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
9				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX
10				XXXX	XXXXXX	XXXXXX	XXXXXX	XXXXXX

C O W	12. [price_cow_x] If you were to sell [COW] today, at what price could you sell [COW] ?	13. [pasture_cow_x] How do you pasture [COW] ? 1=zero grazing 2=tethering 3=paddock 4=grazing on farmer's own land 5=grazing on public land 9=Other	[milk_cow_1d]How much milk did [COW] produce yesterday, considering both the morning and evening milk?		[milk_cow_2d]How much milk did [COW] produce the day before yesterday, considering both the morning and evening milk?	
			quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)	Quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)
1						
2						

C O W	[milk_cow_3d]How much milk did [COW] produce three days ago, considering both the morning and evening milk?		14. When is the last time that [COW] had a calf? [month_calf_x] Month [year_calf_x] Year	15. [sex_calf_x] Was [COW]'s calf a male or a female? 1=Male 2=Female	[milk_usual_x1]On a usual day, in the 1 st month after the calf birth how much milk did you collect form [COW] Quantity Unit (1 Cup 2 Liter) (probe if...)		[calf_suck_x1]During that 1 st month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x2]On a usual day, in the 2 nd month after the calf birth how much milk did you collect form [COW] quantity Unit (1 Cup 2 Liter) (probe if...)		[calf_suck_x2]During that 2 nd month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x3]On a usual day, in the 3 rd month after the calf birth how much milk did you collect form [COW] quantity Unit (1 Cup 2 Liter) (probe if...)		[calf_suck_x3]During that 3 rd month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x4]On a usual day, in the 4 th month after the calf birth how much milk did you collect form [COW] Quantity Unit (1 Cup 2 Liter) (probe if...)	
	Quan tity	Unit (1 Cup 2 Liter) (probe if)			Quan tity	Unit (1 Cup 2 Liter) (probe if...)		qua ntity	Unit (1 Cup 2 Liter) (probe if...)		quan tity	Unit (1 Cup 2 Liter) (probe if...)		Quan tity	Unit (1 Cup 2 Liter) (probe if...)
1															
2															

C O W	[calf_suck_x4]During that 4 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x5]On a usual day, in the 5 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x5]During that 5 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x6]On a usual day, in the 6 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x6]During that 6 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x7]On a usual day, in the 7 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x7]During that 7 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x8]On a usual day, in the 8 th month after the calf birth how much milk did you collect form [COW]	
		Quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)
1												
2												

COW	[calf_suck_x8] During that 8 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x9]On a usual day, in the 9 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x9]During that 9 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x10]On a usual day, in the 10 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x10]During that 10 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x11]On a usual day, in the 11 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x11]During that 11 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no	[milk_usual_x12]On a usual day, in the 12 th month after the calf birth how much milk did you collect form [COW]		[calf_suck_x12]During that 12 th month, was the calf suckling the milk from [COW] ? 1 = yes 0 = no
		Quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)		Quantity	Unit (1 Cup 2 Liter) (Enumerator, probe if unit given is different from the one given at first)	
1													
2													

HEALTH EXPENSES: Now think about the health expenditures you have encountered in the last 12 months for [COW] such as health checkups, providing curative treatments, vaccination, and reproduction techniques.

C O W	45. [s2insemination_x] In the last 12 months, did you use any artificial insemination technique for [COW]?	46. [s2insemcost_x] How much did you pay for artificial insemination of [COW]?	47. [s2crossbreed_x] In the past 12 months, did you use any other method of controlled breeding or reproduction for [COW]?	48. [s2methcross_x] Which method did you use for [COW]? 1 Breeding within own herd with an exotic/cross-bred bull >>52 2 Breeding with exotic/cross-bred bull from other farmer 3 Breeding within own herd with a local bull 4 Breeding with local bull from other farmer 5 Implantation of embryo – crossbred 6 Other
1				
2				

C O W	49. [s2_meth_pay_x] How much did you pay in the last 12 months for the methods of controlled breeding or reproduction for [COW]?	52. [s2_assist_birth_x] Who assisted [COW] the last time it gave birth? 1 Private vet 2 Public government/ Vet/Animal health worker 3 Extension agent 4 Farmer trainer 5 Other farmer from the village 6 Community Agroveter Entrepreneur - CAVE 7 Members of the household >>54 9 Other	53. [s2_cost_birth_x] What was the cost related to the assistance received for the birth of [COW]'s calf?	54. [s2_vaccine_x] Is [COW] vaccinated to prevent diseases? 1=yes 0=no >> 58
1				
2				

C O W	55. [s2diseasevac_x] Against which diseases was [COW] vaccinated? 1 = Foot and Mouth Disease ("FMD") 2= Contagious Bovine Pleural Pneumonia ("CBPP") 3= Brucellosis ("nabuguma") 4= Rinderpest ("kawali") 5= Anthrax ("kalusu") 6=Lumpy skin ("ekifuluto") 7= Trypanosomiasis 8= East Coast Fever 9= Other Specify 999=Don't know	56. [s2_occur_x] Did any of these vaccinations occur in the last 12 months for [COW] ? 1=yes 0=no >> 58	57. [s2vaccinecost_x] In the last 12 months, what was the cost of vaccinating [COW] ? UShs	58. [s2curativecost_x] In the last 12 months has [COW] received curative treatments? DO NOT INCLUDE VISITS FOR VACCINATIONS, SPRAYING OR DEWORMING 1=yes 0=no >> 22	59. [s2curativecost_x] What was the cost of providing curative treatments for [COW] ? (Please include both the cost of the medicine and the cost of the visit) UShs	60. [s2healthstate_x] In the last 12 months, did anybody check the health status of [COW] without providing treatment? 1=yes 0=no >> next cow	61. [s2healthcost_x] What was the cost of this visit to check the health status of [COW] ?
1							
2							

ENUMERATOR, here are for your record the symptoms associated to the different illnesses against which cows may be vaccinated:

- Foot and Mouth Disease (or FMD) (Kalusu). Sore hooves and mouth, cattle salivates and cannot walk well.
- Contagious Bovine Pleural Pneumonia (or CBPP). Congests the lungs of the cattle (mostly calves). Generates difficulty breathing. Tail loses its hair. Most animals die.
- Brucellosis (nabuguma). Spread by bulls. Cows abort before 5 months of pregnancy.
- Rinderpest (kawali). Not common in Uganda anymore
- Anthrax. Cattle bleeds from everywhere and dies in a few day.
- Lumpy skin (ekifuluto). Generates swelling on the skin that turns into a wound.
- Trypanosomiasis is brought by tsetse flies
- East Coast Fever is known as "malaria for animals" (Amakebe)

2.3 LIVESTOCK LABOUR

	1. [act_dum my_x] In the LAST 12 MONTHS, did anyone do ACTIVIT Y for your livestock ? 1=Yes 0= No >> next activity	SKIP IF HH HAS ONLY LOCAL OR ONLY EXOTIC ANIMALS 1.b [s2_labour_type_x] Did you do this activity for: (<i>read all options</i>) 1. only your exotic/cross animals 2. mostly your exotic/cross animals 3. both your exotic/cross and your local animals 4 mostly your local animals 5. only your local animals	2. [s2_id] In the LAST 12 MONTHS who did ACTIVITY for your livestock? 1=HH members 99=Someon e from outside >>4 77=Hired Labour >>4	3. [s2_ss2_who_ act_x] Which household member has done ACTIVITY for your livestock? IDs	4. [s2_act_days_x_ y] In the LAST 7 DAYS how many DAYS did ID spend ACTIVITY for your livestock?	4b. [s2_act_months_ x_y] In the LAST 12 months how many DAYS did ID spend ACTIVITY for your livestock?	5a. How many HOURS in a day did ID spend ACTIVITY for your livestock during the past 7 days? [s2_act_timea_ x_y] amount of time [s2_act_unita_ x_y] unit of time 1=minutes 2=hours-	5b. How many HOURS in a day did ID spend ACTIVITY for your livestock during the past 12 months? [s2_act_time b_x_y] amount of time [s2_act_unit b_x_y] unit of time 1=minutes 2=hours
Herding						XXXXXX		XXXXXX
Milking						XXXXXX		XXXXXX
Cleaning milking equipment						XXXXXX		XXXXXX
Feeding						XXXXXX		XXXXXX
Watering						XXXXXX		XXXXXX
Spraying						XXXXXX		XXXXXX
Selling milk						XXXXXX		XXXXXX
Clearing the land for pasturing					XXXXXX		XXXXXX	
Fencing the paddocks					XXXXXX		XXXXXX	

6. [s2_number_hired] In the LAST 12 MONTHS, how many WORKERS did you hire for livestock activities ? (any livestock activities including those just mentioned) <i>0 = no labor hired for livestock activities >> 12</i>	7. Considering ALL livestock activities for which you hired labor, in the LAST 12 MONTHS, for HOW LONG did you hire workers? [s2_time] Amount of time [s2_timeunit] Unit of time 1 Months 2 Weeks 3 Days 4 Hours	8. [s2labour_pay] HOW MUCH did you pay them all in all in the LAST 12 MONTHS only for your livestock?	9. [s2labour_inkind] Did you provide any in-kind payment to the hired workers related to your livestock? 1=yes 0=No >> 11	10. [s2labour_money] How much is the TOTAL VALUE of your IN-KIND payment?	11. [s2labour_stayin] Do these workers who are hired for your livestock LIVE on YOUR COMPOUND? 1=Yes 0= No
---	--	--	--	--	--

12. [add_act] In the last 12 months, in addition to these labor costs, did you have any expenses on fencing, paddocking, barns, or storage facilities ?
(1=YES ; 0=NO>>Next subsection)

13. [add_act_cost] How much did you spend on fencing, paddocking, barns, or storage facilities in the last 12 months ?

2.4 DAIRY ASSETS

Now I would like to ask you about dairy production assets owned by your household.

Type of assets	Asset code	1. [ss9_asset] Does any member of your household own [ASSET] at present? 1=Yes 0=No
Fabricated chopper	1	
Plough	2	
Thresher	3	
Pulverizer	4	
Milk tank	5	
Wheelbarrow	6	
Spray pump	7	
Feed troughs	8	
Water troughs	9	
Metallic water tank	10	
Polythen sheet for water harvesting	11	
Roof gutters	12	
Barn	13	
Other dairy production asset	14	

2.5 DAIRY EXTENSION SERVICES

Let us talk about extension services you or another member of your household might have received for your DAIRY ACTIVITIES

SOURCE	1. [_5s_es_3q] In the past 12 months, did anyone in this household receive advice/information for about dairy activities from [SOURCE]? 1 = Yes 0 = No >> Next Source	2. [s2_8_who_adv] Which household members received advice/information? RECORD PERSON IDs ID				3. [_5s_es_5q_x] In the past 12 months, how many times did you or anyone in your household receive advice/information about dairy activities from [SOURCE]? Number	4. [_5s_es_5q_x] In the past 12 months, did anyone in the household pay anything in order to receive advices about dairy activity from [SOURCE]? 1 = Yes 0 = No >> 6	5. [pay_agr_dairy_x] Was it CASH or IN-KIND payment for the advice/information received about dairy activities from this [SOURCE]? 1=Cash 2=In-kind 3=Both 999=Don't know/ Not sure			6. [_5s_es_8q] How would you rate the advice received? <i>Read all options</i> 1 = Very useful 2= Useful 3 = Average 4=Somewhat useful 5 = Not useful at all
								In cash Ushs	In kind		
NATIONAL AGRICULTURAL ADVISORY SERVICES (NAADS)											
INPUT SUPPLIER											
NGO	[_5s_es_3q3] 1=Yes >>SPECIFY WHICH ONE										
COOPERATIVE/FARMER GROUP	[_5s_es_3q4] 1=Yes >>SPECIFY WHICH ONE										
FELLOW FARMER	[_5s_es_3q5] 1=Yes >> Was this fellow farmer [FT]?										
LOCAL VET SHOP											
OTHER											

7. [_5s_esb_11q_] Have you heard about training programs for cattle management in your district? 1 = Yes 2 = No >>11	8. [_5s_esb_12q_] Has any member of your household participated in a training program organized about cattle management in the past 12 months? 1 = Yes 2 = No >>11	9. [s2_8_who_training] Who has participated in training programs organized about cattle management in the past 12 months? ID	10 [_5s_esb_14q] The training organized by whom? 1= NAADS 2= Development program or NGO >> SPECIFY [_5s_esb_14q_ngo] 3= Research center 4= Church-related organisation 5= Government agency 6=Fellow farmer 7=Milk processor/ buyer 8=Cooperative/ farmer group 10=Agro vet 9= Other >> SPECIFY 999= Don't know/Don't remember	11. [s2_5_info] Have you received information or participated in a training about artificial insemination in the past 12months? 1 = Yes 2 = No >>13	12. [s2_5_info_who] Who provided the information or organized the training? 1= NAADS 2= Development program or NGO >> SPECIFY [s2_5_info_ngo] 3= Research center 4= Church-related organisation 5= Government agency 6=Fellow farmer 7=Milk processor/ buyer 8=Cooperative/ farmer group 10=Agro vet 9= Other >> SPECIFY 999= Don't know/Don't remember
--	--	---	--	---	---

13. [talk_dfarming] Is there someone in the village to whom you have <u>talked</u> about dairy farming in the last 30 days? 1=yes 0=no >> 16	14. [talk_dfarmin g_who] How many persons in the village have you talked to about dairy farming in the last 30 days?	15. [last_time_talk _df] How many days ago did you talk to someone about dairy farming for the last time? <i>Number of days</i>	16. [advice_dfarmi ng] Is there someone in the village to whom you have <u>asked advice</u> on dairy farming in the last 30 days? 1=yes 0=no >> 19	17. [advice_dfarmin g_who] How many persons in the village have you asked advice to about dairy farming in the last 30 days?	18. [last_time_dfar ming] How many days ago did you ask advice to someone in the village about dairy farming for the last time? <i>Number of days</i>	19. [advice_cattlefeed] Is there someone in the village to whom you have <u>asked advice on cattle feeding</u> in the last 30 days? 1=yes 0=no >> next section	20. [advice_cattlefed_who] How many persons in the village have you asked advice to about cattle feeding in the last 30 days?	21. [last_time_cattle] How many days ago did you ask advice to someone in the village about cattle feeding for the last time?
--	---	---	--	---	---	--	--	--

2.6 OTHER ANIMALS

We would like to ask you now whether you or someone in your household have any animal animals and poultry, and whether you have been selling them in the last 12 months.

Type of Livestock	1. [_q3_sa] During the past 12 months, has any member of your household raised or owned any [ANIMALS]? 1= Yes 0= No >> next animal	2. How many of [ANIMALS] are: a) [_q5a_sa] owned by your household now (present at your farm or away? b) [_q5b_sa] kept but not owned by your household now? If 2a = 0 >> next animal		3. [_q6a_sa] Who owns the majority of [ANIMALS] ? IDs	4. [_q7a_sa] What is the value of [ANIMALS]? UShs	5. [_q8a_sa] In the past 12 months, did you sell any [ANIMALS]? 1= Yes 0= No >> next animal	6. [_q10a_sa] What was the value of the [ANIMALS] you sold in the past 12 months? UShs
Donkeys							
Goats							
Sheep							
Pigs							
Small animals (such as poultry)							
Bees							

2.7 KNOWLEDGE TEST

Instruction for the entire section: *In this section you are not allowed to explain anything nor to rephrase any questions. If the respondent does not understand, repeat the question slowly and put the emphasis on the key words. If the respondent still does not understand afterwards, choose the “don't know” option and continue to the next question.*

Read instruction:

I am now going to ask you some questions regarding feeding practices. Please answer to the best of your knowledge, but don't worry if you are unsure about the answer. Some of the questions will be about practices you don't know. You do not need to worry about this, and can just tell me you don't know. I will not be able to explain the questions.

[what_katiti] What is katiti ?

1-Animal Feed 2-Don't know 3- Other

[what_katiti_oth]Please specify

FEED <i>If the respondent does not know a crop, do not explain beyond mentioning the different names in different languages</i>			1. [feed_type_x] Is [FEED] a grass, herbaceous legume, or a fodder tree? 1=grass 2=herbaceous legume 3=fodder-tree? 8=don't know the crop 999=don't know	2. [correct_name_x] <i>ENUMERATOR: Point the image with your finger AND ASK</i> “What is the name of this crop?” NAMES CORRECTLY? 1=yes 0=No	3. [feed_source1_x] [feed_source_cotton] [feed_source3_bran] <i>ENUMERATOR: Point the image with your finger</i> This is an image of [FEED], Do you think [FEED] is a source of energy, protein, mineral, or vitamin? 1=energy 2=protein 3=mineral 4=vitamin? <i>(multiple answers allowed)</i> 999=don't know
English	Luganda	Lusoga	1	2	3
1-Calliandra	Calliandra	Calliandra			

2-Rhodes/Chloris	Rhodes/Golo	Rhodes/Guyana			XXX
3-Lablab	Lablab	Lablab/Ebidandali			
4-Elephant Grass	Ebisangazi	Engada	XXX		
5-Gliricidia	Gliricidia/Katiti	Katiti /Gasiya omuzungu			XXX
6-Cotton seed cake	Cotton	Cotton seed cake	XXX	XXXX	
7-Maize bran	Chachu	Chachu/Ebilkuta	XXX	XXXX	

4. [water_freq] How often a day should dairy cows have access to water during the wet season:
(read all options)

- 1=1
- 2=2
- 3=3
- 4=all the time; ad lib

5. [advisable_paddock] Is it advisable for a farmer with 0.5 acres to paddock? 1=yes 0=no 999=don't know

6. [lablab_rhodes] Imagine a farmer already has elephant grass and a fodder tree on his land. He has an opportunity to either get seeds for lablab[point on the showcard], or get seeds for Rhodes grass [point on the showcard]. Which would be best to add to increase milk productivity?
(read options1-4)

- 1=lablab
- 2= Rhodes
- 3= either lablab or Rhodes
- 4 =none

999=don't know because doesn't know lablab, or other reasons

7. [twoacre_cow] Imagine a farmer has 2 acres for animal food and pastures. How many exotic cows can he keep without buying feeds throughout the year while maintaining milk productivity?

____(number of cows)

8. [molaplus_wait] Imagine a farmer has prepared silage without molar plus. How long should he wait before using it as feed?

_____days

9. [feed_cowkg] Imagine a farmer is feeding a cow of 300 kg on dry elephant grass. How many kg of feed should he give her daily?
_____kg/day

10. [advisable_kgcow] A cow is giving 2 liter per day. Is it advisable to feed it commercial feed?

11.[beneficial_practice4 _x] I'm going to ask you about a series of dairy practices. Please tell me how beneficial each is for milk productivity. Is [PRACTICE] 1=not beneficial at all, 2=not beneficial; 3=more or less beneficial (neither not beneficial, nor beneficial); 4=beneficial or 5 very beneficial?

PRACTICE:

a=feeding cows with a mix of commercial feed and grass

b=free grazing

c=feeding wilted sweet potatoe vines

d= Control water access

e=feeding cows with Katiti

f= change breeds from local to cross

g=feeding cassava peel

h=Giving mineral licks

i=Storing dry grass for dry season

12. Of all the practices listed

[most_ben] Which one is the most beneficial?

[second_ben] Which one is the 2nd most beneficial?

13. [how_improve]How best can you improve your farm pastures? (**read all options** and allow for several answers)

1. Removing bushes and unwanted pastures (lantana camala, sprobolous...)

2. Slashing the grass many times

3. Burning pastures

4. Fencing

14. [best_feed]Is it more beneficial to feed a cow with fresh or dry grass?

1. Fresh grass

2. Dry grass

3. Doesn't make a difference

15. [s2_7_stop]When should you stop giving a calf milk?

ENUMERATORS: read only options 1 to 5; note as 6 if the farmer sticks to other answers, select 6)

1. 2 weeks

2. 4 months

3. 8 months

4. 12 months

5. More than 12 months

6. Other answer preferred by the farmer (e.g. "When the cow kicks the calf away", "When the cow gets pregnant")

16. [heard_katiti2] Have you heard of Katiti from a fellow farmer or a trainer as a nickname for a cattle feed?

0. No 1. Yes 999. Don't know

2.8 KNOWLEDGE, SOURCE OF KNOWLEDGE, USAGE AND PURCHASE

1. [know_feed1a_x] [know_feed2a_x] [know_feed3a_x] Do you know [FEED] as a feed/ practice to better feed animals? 1=Yes >>3 0=No 2=just heard about it	SHOW PICTURE OR GIVE DESCRIPTION: 2. [know_feed1b_x] [know_feed2b_x] [know_feed3b_x] Do you know [FEED] as a feed practice to better feed animals? 1=Yes 0=No >>Next feed	3. [know_use_feed1_x] [know_use_feed2_x] [know_use_feed3_x] Do you know how to use [FEED] for feeding your animals? 1=Yes 0=No >> 9	4. [learn_new_feed1_x] [learn_new_feed2_x] [learn_new_feed3_x] In the past 12 months, have you learned something new about [FEED]? 1=Yes 0=No >> 9	5. [shown_feed1_x] [shown_feed2_x] [shown_feed3_x] In the past 12 months were you practically shown how to implement [FEED] ? 1=Yes 0=No >> 11	If 5=No and 4=No >> 7 6. [learn_feed1_x] [learn_feed2_x] [learn_feed3_x] From whom did you learn about [FEED] or who showed you how to implement it? 1= Farmer from the same village 2=farmer from another village 3= Extension Agent, Vet 4= Other trainers during a training program >> feeding practices 5=Spouse 6= Leadership of Cooperative 7= School 8=radio/TV/newspaper 9= Other >> specify	TABLE CONTINUE S NEXT PAGE ➔ follow on same row

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7. [use_feed1_x] [use_feed2_x] [use_feed3_x] Have you used [FEED] for feeding your animals in the last 12 months? 1=Yes >> 5 0=No >> next feed	8. [april_feed1_x] [april_feed2_x] [april_feed3_x] Since July 2016, has your use of [FEED]: <i>(read all options)</i> 1= increased 2= decreased 3= stayed the same	9. [purchase_feed1_x] [purchase_feed2_x] [purchase_feed3_x] [purchase_prac1_x] [purchase_prac2_x] [purchase_prac3_x] In the last 3 months, have you purchased any of/ spent on [FEED]? 1=Yes>>9b 0=No>>10	9b. [cost_feed1_x] [cost_feed2_x] [cost_feed3_x] In the last 3 months, how much did you spend for [FEED] ? (UShs)	10. [dry_purchase_feed1_x] [dry_purchase_feed2_x] [dry_purchase_feed3_x] [dry_purchase_prac1_x] [dry_purchase_prac2_x] [dry_purchase_prac3_x] In the long dry season (December to March) months, have you purchased any of / spent on [FEED] ? 1=Yes>>10b 0=No>>next feed	10b. [cost_purchase1] [cost_purchase2] [cost_purchase3] In the last long dry season (from December to March), how much did you spend for [FEED] ? (UShs)

FEEDS/FEEDING PRACTICES TABLE

Note: for farmers, only a subpart of the list below is asked.

1- Calliandra	20-Chopping/Okutema tema xx
2-Rhodes/Cloris/Golo/Guyana	21- Crop residues/ Ebifilca Kumere/ Ebisigalira
3- Elephant grass/Napier/Engada/Ebisangazi	
4- Mucuna/Ebidandali bye'nte	22- Feed formulation/ Okutabula emere xx
5- Setaria/Kakira Kambwa	23- Bush clearing and weed control/ Okulongosa famu xx
6- Bracheria/Kifuta/Kiryama	24- Perimeter fencing/ Okusiba famu xx
7- Lucerne	
8- Sweet potato vines/ Amakaba gemboli/ Amalagala	25- Paddock/Okusiba Ebisenge or Obusenge xx
9- Desmodium/Mutasuka Kubo	26- Oversowing/ Okusiga eisubi eilungi mwiisubi eriri mufamu / Okusiga omuddo omulungi munuddo omugyomufamu xx
10-Lablab/ Ebidandali bye'nte	27- Water harvesting/ Okutereka/Okulembeka amadi xx
11-Guatemala grass	
12- Centrosema/Obuguyaguya/Centro	28- Molasse/Sukali guluxx
13- Siratro	29- Mola plus microbes / Obusirikitu XX
14- Gliricidia/Katiti/Gasiya omuzungu	30- Maize, wheat, rice bran/ Chachu/Ebilkuta xx
15- Sorghum/Muwemba/Omuwemba	31- Cotton seed cake/cotton xx
16- Local grass:Lufafa/Star grass, Mukonzi/Ebisubi ebyemeza byonka/ Omuddo ogwemeza gwoka	32- Mineral licks or blocks/ Omunyo gwente XX
17- Other fodder shrubs: Lubilizi/ Mululuza, Ficus/ Omutuba/ Mugaire	33- Dairy meal xx
18- Silage making/ Emmere Envundikize/ Omuddo omuvundikize	
19- Hay making/ Omuddo omukalu	34- Home-made rations/ Emere ye'nte gyo'tabulila eweka
	35- Compost making/Nakuwundira

[If at least one answer is "1" or "2" in question 6]

[place_teach1] [place_teach2] [place_teach3] You said you learned feeds or technologies from another farmer. Was it during:

1= an individual discussion

2=group discussion

3= a group training organized by this farmer

4= a group training organized by somebody else

5=other

[teach_out1] [teach_out2] [teach_out3] Had this fellow farmer recently received training on feed practices outside the community?

1=yes

0=no

2=don't

know

[teach_ft1] [teach_ft2] [teach_ft3] Was this fellow farmer (or one of these fellow farmers) [FT]?

1=yes

0=no

2=don't

know

[If at least one answer is "3" in question 6]

14. [ea_village1] [ea_village2] [ea_village3] You said you learned about some feeds or technologies from an extension agent / vet. Did the EA come to your village? 1=yes 0=no >>16	15. [why_ea1] [why_ea2] [why_ea3] Why did the EA come? 1=Own initiative 2=training organized by EADD 3=training organized by PO/dairy 4=training organized by other organization 5= called by me 6-called by another farmer 999=don't know	Ask only if 14 = 0 16.[where_ea1] [where_ea2][where_ea3] Where did you see the EA? 1=neighbouring village 2=at dairy/PO 3=subcounty 4=other 999=don't know	17. [see_ea1] [see_ea2] [see_ea3] Was it part of a group training? 1=yes 0=no	18. [program_ea1] [program_ea2] [program_ea3] What program was it? 1. EADD 2. NAADS 3. Heifer 4. other
---	---	--	--	--

Seeds

ENUMERATOR READ, SHOWING THE PICTURE CALLIANDRA: We are now going to talk about seeds or seedlings to grow cattle feed, including for example, elephant grass cuttings, or calliandra seeds [show picture].

Seed purchases

19. In the past 12 months, have you **PURCHASED** any seeds of seedlings to grow feeds for your cattle?
[purchase_seed] 1. Yes 2. No

[If purchase_seed=1]

19b. Which seeds or seedlings did you purchase?

ENUMERATOR, several possible answers, please circle

[seed_purchase_XX, each with options 1. Yes 2.No]

- | | |
|--|--|
| 1 Calliandra | Calliandra |
| 2 Rhodes/Chloris/Golo/Guyana | Rhodes/Chloris/Golo/Guyana |
| 3 Elephant grass/Napier/Engada/Ebisangazi | Elephant grass/Napier/Engada/Ebisangazi |
| 4 Mucuna/Ebidandali bye'nte | Mucuna/Ebidandali bye'nte |
| 5 Setaria/Kakira Kambwa | Setaria/Kakira Kambwa |
| 6 Bracheria/Kifuta/Kiryama | Bracheria/Kifuta/Kiryama |
| 7 Lucerne | Lucerne |
| 8 Sweet potato vines/ Amakaba gemboli/ Amalagala | Sweet potato vines/ Amakaba gemboli/ Amalagala |
| 9 Desmodium/Mutasuka Kubo | Desmodium/Mutasuka Kubo |
| 10 Lablab/ Ebidandali | Lablab/ Ebidandali |
| 11 Guatemala grass | Guatemala grass |
| 12 Centrosema/Obuguyaguya/Centro | Centrosema/Obuguyaguya/Centro |
| 13 Siratro | Siratro |
| 14 Gliricidia/Katiti/Gasiya omuzungu | Gliricidia/Katiti/Gasiya omuzungu |

[If purchase_seed=1]

19c. What was the total value of the seeds / seedlings you purchased (in the past 12 months)?

[value_purchase_seed] _____ (UShs)

[If purchase_seed=1]

19d. From whom did you purchase those seeds or seedlings?

ENUMERATOR, several possible options, please circle

[source_purchase], each with options 1. Yes 2.No

1. A fellow farmer. 2. A demonstration farm 3. A shop. 4. A local market. 5. An agro-vet dealer. 6. Other [specify]

[For each of these options]

19e. How long does it take to go from your home to this [SOURCE] from which you bought?

[time_purchase] _____ **ENUMERATOR, write 0 if the seller came to the farm**

[unit_time_purch] _____ 1. Minutes 2. Hours

19e1. By which means of transport?

[transport_purch] 1. Walk. 2. Bicycle. 3. Motorbike. 4. Taxi. 9. Other [specify]

Seeds received

20. In the past 12 months, were you **GIVEN FOR FREE** any seeds of seedlings to grow feeds for your cattle?

[given_seed] 1. Yes 2. No

[If given_seed=1]

20b. Which seeds or seedlings were you given?

ENUMERATOR, several possible answers, please circle [seed_given_XX, each with options 1. Yes 2.No]

- | | |
|--|--|
| 1 Calliandra | Calliandra |
| 2 Rhodes/Chloris/Golo/Guyana | Rhodes/Chloris/Golo/Guyana |
| 3 Elephant grass/Napier/Engada/Ebisangazi | Elephant grass/Napier/Engada/Ebisangazi |
| 4 Mucuna/Ebidandali bye'nte | Mucuna/Ebidandali bye'nte |
| 5 Setaria/Kakira Kambwa | Setaria/Kakira Kambwa |
| 6 Bracheria/Kifuta/Kiryama | Bracheria/Kifuta/Kiryama |
| 7 Lucerne | Lucerne |
| 8 Sweet potato vines/ Amakaba gemboli/ Amalagala | Sweet potato vines/ Amakaba gemboli/ Amalagala |
| 9 Desmodium/Mutasuka Kubo | Desmodium/Mutasuka Kubo |
| 10 Lablab/ Ebidandali | Lablab/ Ebidandali |
| 11 Guatemala grass | Guatemala grass |
| 12 Centrosema/Obuguyaguya/Centro | Centrosema/Obuguyaguya/Centro |

13 Siratro
14 Gliricidia/Katiti/Gasiya omuzungu

Siratro
Gliricidia/Katiti/Gasiya omuzungu

[If given_seed=1]

20c. Who gave you those seeds or seedlings?

ENUMERATOR, several possible options, please circle

[source_given_seed_XX, each with options 1. Yes 2.No] 1. A fellow farmer. 2. A relative. 3. A demonstration farm 4. An extension agent. 5. An NGO / a development program. 6. An agro-vet dealer. 7. Other [specify]

[If source_given_seed_5==1: the seeds / seedlings were given by an NGO / development program]

20c1. Which NGO or NGO staff gave you seeds / seedlings

ENUMERATOR, write down as explained by farmer

[source_given_ngo] _____

[If given_seed=1]

20d. How long did it take to go from your home to the place where the seeds / seedlings were distributed?

[time_given] _____ **ENUMERATOR, write 0 if the distribution came to the farm**

[unit_time_given] _____ 1. Minutes 2. Hours

20d1. By which means of transport?

[transport_given] 1. Walk. 2. Bicycle. 3. Motorbike. 4. Taxi. 5. Other [specify]

[If given_seed=1]

20e. If you were to pay for these seeds / seedlings you received, how much would you pay?

[value_given_seed] _____ (US\$)

[If given_seed=1]

20f. Was the quantity of seeds / seedlings you received sufficient compared to what you wanted to plant?

[sufficient_given_seed] 1. More than sufficient. 2. Sufficient. 3. Almost sufficient. 4. Not at all sufficient.

Where to find seeds

21. Where would you find calliandra seeds to purchase?

ENUMERATOR, show again pictures of calliandra

[where_cal] 1. At a fellow farmer. 2. At a demonstration farm. 3. In a shop. 4. In a local market. 5. From an agro-vet dealer. **6. Nowhere. 7. No idea**

ENUMERATOR, don't force an answer and choose "nowhere" or "no idea" if this is the farmer's first reaction.

[If where_purchase_calliandra=1to4]

21b. How long would it take to go from your farm to the closest of these sellers?

[time_purch_cal] _____ **ENUMERATOR, write 0 if the seller came to the farm**

[unit_time_cal] _____ 1. Minutes 2. Hours

[transport_cal] 1. Walk. 2. Bicycle. 3. Motorbike. 4. Taxi. 9. Other [specify]

[If time_purch_cal>0]

21c. Is there a risk if you travel to this seller that he has run out of calliandra seeds?

[run_out_calliandra] 1. Quite possible. 2. Unlikely. 3. Very unlikely

2.9 EXPECTATIONS

[If usual_last_dry is null or NA]

Q1. When was the last time your cows produced milk?

[ss9_month] ----- (month, 1 to 12; write 99 if herd has never produced any milk)

[ss9_year] ----- (year, 4 digits)

Q1. How much milk did your cows produce on a usual day during that month?

ENUMERATOR: note the quantity and then the unit as stated by the farmer

[ss9_qt] ----- (number of units)

[ss9_qt_b] Unit : 1. Cup 2. Liter (Please probe if Unit is different)

Q2. EXPECTATIONS WITH HAY

[If usual_last_dry>0]

You have told us that on a usual day of the last dry season, you collected [usual_last_dry] [unit_last_dry] of milk from your cows,

or

[If usual_reference>0]

You have told us that in the last month your cows produced milk, you collected [quantity_reference] [unit_reference] of milk from your cows,

[then in both cases]

Now, imagine that you had been able to feed your animals daily with hay during that period. How many [unit_usual_dry/unit_reference] do you think your cows would have produced per day instead of [quantity_usual_dry/quantity_reference]?

[quantity_hay_dry] [quantity_hay_new] ----- (number of units; 999 if "no idea")

Hint: ENUMERATOR, if the respondent does not remember what hay is, explain: "Hay is fresh grass that has been collected, dried and packed so as to be fed to the animal in the dry season, when there is less fresh grass"

Q2b. [explain_hay] ENUMERATOR, did the respondent ask you to remind him / explain what hay is? Y/N

[If quantity_hay~=999]

Q2b. How do you know you would get that quantity?

[know_hay] 1. Personal experience. 2. Training I received. 3. Saw from other farmer. 4. Heard from professional (extension agent, vet, trainer,...). 5. Heard from other farmer. 6. Built upon your explanation. 7. Just guessed 8. Other [specify]

Q2c. Are you very confident, rather confident or not so sure, that you would get this quantity by feeding your cows with hay?

[confident_hay] 1. Very confident. 2. Rather confident. 3. Not so sure.

Q3. EXPECTATIONS WITH CROP RESIDUES

[If usual_last_dry>0]

You have told us that on a usual day of the last dry season, you collected [usual_last_dry] [unit_last_dry] of milk from your cows,

or

[If usual_reference>0]

You have told us that in the last month you cows produced milk, you collected [quantity_reference] [unit_reference] of milk from your cows,

[then in both cases]

[quantity_res_dry][quantity_res_new]Now, imagine that you had been able to feed your animals daily with crop residues (maize bran, potato peels,...) during that period. How many [unit_usual_dry/unit_reference] do you think your cows would have produced per day instead of [quantity_usual_dry/quantity_reference]?

Q3b. How do you know you would get that quantity?

[know_res] 1. Personal experience. 2. Training I received. 3. Saw from other farmer. 4. Heard from professional (extension agent, vet, trainer,...). 5. Heard from other farmers. 6. Built upon your explanation. 7. Just guessed 8. Other [specify]

Q3c. Are you very confident, rather confident or not so sure, that you would get this quantity by feeding your cows with crop residues?

[confident_res] 1. Very confident. 2. Rather confident. 3. Not so sure.

2.10 WILLINGNESS TO PAY

ENUMERATOR, The respondent we aim at is the same as in the second section about dairy farming: either the specific person we asked for, or the household member owning the cattle or most knowledgeable about the livestock owned by the household.

Read:

"We are now going to ask you about your interest in buying different feeds or implement different dairy-related practices. Please think of your own situation, and about what decisions you would make if you were offered different options."

- 1) [s4_q1_wtp] Imagine you have 50.000 shilling revenue from milk sales. Would you rather use it to
 - a. Buy animal drugs
 - b. Buy seeds or seedlings for animal feeds
 - c. Pay for artificial insemination
 - d. Invest in another business or activity

- 2) [s4_q2_wtp] Imagine you have 50.000 shilling revenue from milk sales. Would you rather use it to

- a. Spend it to hire labor for herding
- b. Use it for school fees for your children
- c. Buy commercial feed for the animals
- d. Pay for artificial insemination

3) [s4_q3_wtp] Imagine you have 50.000 shilling to spend on feeding your animals. Would you rather:

- a. Buy elephant grass seeds
- b. Buy Caliandra seeds
- c. Buy cotton seed cake
- d. Spend it to hire labor for herding

4) [s4_q4_wtp] Imagine you have 500.000 shilling to spend on your animals. Would you rather:

- a. Build a hay barn
- b. Save it for animal health emergencies
- c. Buy a heifer

5) [s4_q5_wtp] Imagine you have 2 million shilling to spend on your animals. Would you rather:

- a. Buy a cow
- b. Use it for fencing
- c. Save it for animal health emergencies

6) [s4_q6_wtp] Imagine you have 2 million shilling to spend on your animals. Would you rather:

- a. Invest in a water-harvesting system
- b. Buy a cow
- c. Save it for animal health emergencies

Section 3. LAND AND CROPPING ACTIVITIES

***[TO BE ANSWERED BY HEAD OF HOUSEHOLD AND IN HIS/HER ABSENCE,
BY AN ADULT MEMBER OF THE HOUSEHOLD]***

We would now like to ask some a few questions about all the land that our household currently owns or cultivates. These questions will help us understand which feeds you grow for your cattle. We will also briefly ask you about crops you harvested in the past wet season. This part will not take long and we would like to ask you further questions on dairy farming right after it. However, if you feel that another member of your household would find it easier to answer questions on land and crops, could you please suggest his or her name?

ENUMERATOR, In the case the current respondent calls somebody else, please ask him or her to stay around so that you can call her for the next sections -- and thank her again for her time!

[s3_respondent]ENUMERATOR: select the name of the household member responding to this section

"We would like to ask some questions about all the land for which the household currently has ownership or cultivates. Please include land belonging to this household that was rented or lent out to another household. Please also include any land the household cultivates, under any arrangement, including when renting it in. These questions will help us understand which feeds you grow for you cattle. Let me remind you that all your answers will remain fully confidential."

3.1 LAND, PASTURE AND PARCELS

Q1a: [sc0q1_] What is the total size of your land ?

Q1b [sc0q1_metric] Unit 1=hectares, 2=acres, 3= feet, 4=meters, 5=sticks, 6=Other

Q1c. [length_stick1] If Stick, how long is it (in feet)?

Q1d [size_land_dim]Other dimension (feet, meters, stick, other)

Q2a: [sc0q2_] What is the size of land under pasture?

Q2b [sc0q2_metric] Unit 1=hectares, 2=acres, 3= feet, 4=meters, 5=sticks, 6=Other

Q2c. [length_stick2] If Stick, how long is it (in feet)?

Q2d [size_pastureland_dim] Other dimension (feet, meters, stick, other)

Q3a: [sc0q3] What is the size of land under cultivation (including banana and trees)?

Q3b [sc0q3_metric] Unit 1=hectares, 2=acres, 3= feet, 4=meters, 5=sticks, 6=Other

Q3c. [length_stick3] If Stick, how long is it (in feet)?

Q3d [size_cultivated_dim] Other dimension (feet, meters, stick, other)

Q4a: [sc0q4_a] Do your pastures have a water source? 1 = Yes; 0 = No

Q4b: [sc0q4_b] What type of water source is there on your pasture?

1 = Natural Spring, 2 = Lakes, 3 = Swamp, 4 = Well, 5 = Dam, 9= Other [Specify]

Q4c: [sc0q4_c] Is it available in the dry season? 1 = Yes; 0 = No

Q5. [manure] Have you used any animal manure/compost in the last 12 months? 1=yes 0=no

Q6a. [manure_crops] On which crops have you used animal manure? CROP LIST

Q6b [manure_animal] From which animals did you collect the manure?

ENUMERATOR: Please ask the respondent to make a MAP of his/her farm on which he/she indicates all parcels and plots. Make sure the parcel where the compound is located is also included. Write down a number for each parcel.

Q7. [number_parcel] How many parcels does your household have in total?

	Q8.What is the size of the parcel? Q8a. [par_sc0q4_] Size Q8b. [par_sc0q4_metric] Unit		Q8.c [length_stick4] If Stick, how long is it (in feet)?	Q9. [size_parcel_dim] Other dimension
Parcel # 1				
Parcel # 2				
Parcel # 3				

3.2 FEEDS GROWN ON PARCELS

Let's first talk about the parcels or pieces of land on which you grow any grass, tree or other crop specifically for animal feeding at any point in the last 12 months. This includes fields that you have planted but not yet harvested or used. It also includes fields in which you have other crops, in addition to animal feeds, or smaller pieces of land that may be on the compound or elsewhere. Please also include parcels with only scattered fodder trees or feeds planted on the borders only.

Now, please think about all parcels where you have grown ANIMAL FEEDS in the last 12 months including the compound where you reside. Please indicate all parcels that had ANIMAL FEEDS at some point during the last 12 months, whether they were planted in this period or not.

		Parce l 1	Parce l 2	Parce l 3	Parce l 4	Parce l 5
5	[parcel_feed_x] In the last 12 months, have you grown any animal feeds on your PARCEL?					
6	[grow_feed_past_x] Was PARCEL already planted with animal feed 12 months ago?					
8	[feed1_x] What was the main feed on PARCEL in the last 12 months?					
9	[feed1_month_x] [feed1_year_x] When did you plant this [feed 1] on PARCEL?					
10	[how_obtained_feed1_x] How did you obtain the seed/cutting/seedlings of [feed 1] on PARCEL?					
11	[feed1_scattered_x] Was there a specific surface dedicated to [feed 1] on PARCEL, or was [feed 1] scattered throughout or on the border only?					
13	[size_max1] [unit_max1] What was the maximum size of the area dedicated to [feed1] on PARCEL in the last 12 months?					
13 b	[max_size_feed1_dim_x] Other dimension					
14	[feed1_during_month_x] During which months did you grow [feed1] on PARCEL?					
15	[times_harvest1_x] How many times did you harvest [feed1] during those months?					
16	[times_replant1_x] How many times did you plant more and/or re-plant [feed1] during those months?					

17	[another_feed2_x] Was there another feed on PARCEL in the last 12 months?					
18	[feed2_x] Which feed was on PARCEL?					
19	[feed2_month_x] [feed2_year_x] When did you plant this [feed 2] on PARCEL?					
20	[how_obtained_feed2_x] How did you obtain the seed/cutting/seedlings of [feed 2] on PARCEL?	Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5
21	[feed2_scattered_x] Was [feed2] on a separate surface, scattered, on the border of the plot, or mixed with [feed1] or [feed2]?					
23	[size_max2] [unit_max2] What was the maximum size of the area dedicated to [feed2] on PARCEL in the last 12 months?					
23b	[max_size_feed2_dim_x] Other dimension					
24	[feed2_during_month_x] During which months did you grow [feed2] on PARCEL?					
25	[times_harvest2_x] How many times did you harvest [feed2] during those months?					
26	[times_replant2_x] How many times did you plant and/or re-plant [feed2] during those months?					
27	[another_feed3_x] In addition to the feeds already listed, did you grow any other feed on PARCEL in the last 12 months?					
28	[feed3_x] Which feed was on PARCEL?					
29	[feed3_month_x] [feed3_year_x] When did you plant this [feed3] on PARCEL?					
30	[how_obtained_feed3_x] How did you obtain the seed/cutting/seedlings of [feed3] on PARCEL?					
31	[feed3_scattered_x] Was there a specific surface dedicated to [feed3] on PARCEL, or was [feed3] scattered throughout or on the border only?					
33	[size_max3] [unit_max3] What was the maximum size of the area dedicated to [feed3] on PARCEL in the last 12 months?					
33b	[max_size_feed3_dim_x] Other dimension					
34	[feed3_during_month_x] During which months did you grow [feed3] on PARCEL?					
35	[times_harvest3_x] How many times did you harvest [feed3] during those months?					
36	[times_replant3_x] How many times did you plant more and/or re-plant [feed3] during those months?					
37	[another_feed4_x] Was there another feed on PARCEL in the last 12 months?					
38	[feed4_x] Which feed was on PARCEL?					
39	[feed4_month_x] [feed4_year_x] When did you plant this [feed 4] on PARCEL?					

40	[how_obtained_feed4_x] How did you obtain the seed/cutting/seedlings of [feed4] on PARCEL?					
41	[feed4_scattered_x] Was there a specific surface dedicated to [feed4] on PARCEL, or was [feed4] scattered throughout or on the border only?					
43	[size_max4] [unit_max4] What was the maximum size of the area dedicated to [feed4] on PARCEL in the last 12 months?					
43b	[max_size_feed4_dim_x] Other dimension					
44	[feed4_during_month_x] During which months did you grow [feed4] on PARCEL?					

		Parcel 1	Parcel 2	Parcel 3	Parcel 4	Parcel 5
45	[times_harvest4_x] How many times did you harvest [feed4] during those months?					
46	[times_replant4_x] How many times did you plant more and/or re-plant [feed4] during those months?					
53	[another_feed5_x] Was there any other feeding crop on the borders of parcel \${parcel_name} or scattered on the PARCEL?					
54	[feed5_x] Which feed was on PARCEL?					
55	[fed_animals1_x] Was all the [feed1, feed2, feed3, feed4, feed5] on PARCEL harvested during the last 12 months fed to the animals of your household?					
56	[feed_beans1_x] Show 10 beans. If these 10 beans represent all the [feed1, feed2, feed3, feed4, feed5] harvested on PARCEL during the last 12 months, how many beans represent the feed fed to the animals of your household?					
57	[sell_feed1_x] Did you sell part of the [feed1, feed2, feed3, feed4, feed5] from PARCEL?					
58	[amount_feed_sale1_x] What was the total amount you received for [feed1, feed2, feed3, feed4] from PARCEL?					
59	[who_bought_feed1_x] Who bought the [feed1, feed2, feed3, feed3 feed4, feed5] from PARCEL?					
60	[reimbursed_feed1_x] Was any of the [feed1, feed2, feed3, feed4, feed5] on PARCEL given for free or as reimbursements for land, labor, or oxen ?					
61	[stored_feed1_x] Was any of the [feed1, feed2, feed3, feed4, feed5] harvested on this PARCEL first stored, used for hay or silage making ?					

3.3 CROPS AND HARVEST DURING LAST CROPPING SEASON

We are now going to ask you about the use of ALL of your parcels, and the crops you have grown.

P A R C E L I D	Q1. [crop_harvest_x] During the last cropping season (March to June 2016); did you harvest any crop on [PARCEL]?	Q2. [crp_sc2q6_x] Which crops did you harvest during the last cropping season?
	1=Yes 0=no	Crop Name

Ask for all crop listed on one of the parcels

	Q1. [har_sc4q7_] What was the value of the harvest sold? UShs	Q2. [har_value] If you had to value the CROP harvested that was not sold, at how much would you value it? UShs
CROP		

23. [plant_tree] Have you planted any trees apart from fodder trees in the last 12 months?

1=Yes

2=No >> next section

24. [number_tree] How many trees have you planted?

25. [where_tree] Where did you get the seeds or seedlings?

1. Fellow farmer

2. EADD

3. NAADS

5= Bought himself / herself

6= From his/her own farm

4. Other [SPECIFY]

Section 4. SOCIAL POSITION AND HOUSEHOLD WELL-BEING

4.1 PRO-SOCIAL MOTIVATION

I am going to read you some statements about how you have felt in the last 7 days. Some of these statements may sound a bit odd. I apologize in advance but it's my job to read these questions.

R E S P O N D E N T I D	1. [happy_days] In the last 7 days, how many days have you been happy because you could provide somebody with advice?	2. [selfish_days] In the last 7 days, how many days did you act selfishly?	3. [help_days] In the last 7 days, how many days did you feel good because you were able to help other farmers?	4. [annoyed_days] In the last 7 days, how many days were you annoyed because you had to do something for somebody else?	5. [forward_days] In the last 7 days, how many days did you feel like you were moving forward in life?	6. [hopeful_days] In the last 7 days, how many days were you hopeful about the future?
	Number of days	Number of days	Number of days	Number of days	Number of days	Number of days

4.2 COMMUNITY PARTICIPATION AND LEADERSHIP

R E S P O N D E N T I D	1. [s1_24aq_a] Are you or any member of your household a committee member of an LC1, LC2 or LC3? 1=yes 0=no >> 6	2. [s1_24aq_b] Which member of your household? IDs	3. [s1_24aq_cx] For how many years has NAME been a committee member of LC1, LC2 or LC3? Number of years			6. [s1_25aq_a] Do you or any member of your household currently hold a volunteer position? 1=yes 0=no>>8	6b. [s1_25aq_b] Which member of your household? IDs 1=yes 0=no		
--	--	--	---	--	--	--	---	--	--

8. [s1_25dq_a] Do you or any member of your household currently occupy another leadership position or provide service in the community? 1=yes 0=no >> 9	8b. [s1_25dq_b] Which member of your household? IDs	8c. [s1_25dq_cx] Which position or service? 1=Village Health Team 2=Teacher 3=Agrovet 4=Artificial Insemination specialist 5=Other[Specify]			11. [member_credit] Are you or any member of your household a member of credit or savings group? 1=yes 0=no	12. [member_religious] Are you or any member of your household a member of a religious group, a neighborhood association, a school group, a burial group or another local/village group? 1=yes 0=no=> next subsection	13. [member_local]What type of group 1. religious group, 2. neighborhood association, 3. school group, 4. burial group 5. another local/village group. Specify. (multiple answers allowed)
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4.3 CREDIT AND TRANSFERS

We would now like to ask you about saving and credit services that any member of the household has been using in the past 12 months as well as informal transfers received.

1. In the past 12 months, has any member of your household...				
[micro_fin] used a COMMERCIAL BANK, A CREDIT UNION, or MICROFINANCE INSTITUTION to save money ? 1=yes 0=no	[saving_gr] used a saving and loans association or another savings club to save money? 1=Yes 0=no	[ss8_4q] received transfers from family members not living in this household? 1=yes 0=no	[ss8_5q] received transfers from other community members? 1=yes 0=no	

2. In the past 12 months, has any member of your household...						
[comm_bank] borrowed any money or taken out a loan from a COMMERCIAL BANK? 1=yes 0=no	[gov_agency] borrowed any money or taken out a loan from a GOVERNMENT AGENCY? 1=yes 0=no	[microf] borrowed any money or taken out a loan from a MICRO FINANCE INSTITUTION OR A CREDIT UNION? 1=yes 0=no	[employer] borrowed any money or taken out a loan from an EMPLOYER? 1=yes 0=no	[informal_credit] borrowed any money or taken out a loan from a saving and loans association or another savings club? 1=Yes 0=No	[relative_friend] borrowed any money or taken out a loan from a RELATIVE or FRIEND? 1=yes 0=no	[moneylender] borrowed any money or taken out a loan from a MONEY LENDER? 1=yes 0=no

<i>If at least a "Yes" in question 2</i> 3. [ss8_15q] Did you take any for livestock production in the last 12 months? 1=yes 0=no >> Next Subsection	4. [ss8_16q] What was the total amount of money you borrowed for livestock production? UShs
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4.4 FOOD DIVERSITY

PART 1: DIETARY DIVERSITY					
Identify respondent If main respondent is female → No change of respondent If main respondent is male → Best choice is wife of HH head. If not available, replace with another other adult female HH member. If no adult female HH members → ask the male household head, or any other male household member					
L.1.1	[s4_respondent]Is an adult female HH member available?	1= Yes 2= No			
Enumerator Instructions: Ask the respondent to describe the foods (meals and snacks) the women ate or drank yesterday during the day and night. Start with the first food or drink of the morning. Write down all foods and drinks mentioned. When composite dishes are mentioned, ask for the list of ingredients. When the respondent has finished, please probe for meals and snacks not mentioned.					
[s4_resp_name]Respo ndent Name					
[s4_list_break]Breakfa st	[s4_list_snack1]Sn ack	[s4_list_lunch]Lunch	[s4_list_snack2]Snac k	[s4_list_dinner]Dinner	[s4_list_snack3]Sn ack
Enumerator Instructions: When the respondent has recalled all meals, please fill in the table of food groups below. Enter "YES" if any item belonging to the food group appears above. After finishing, probe: for any food groups not mentioned, ask the respondent if any food item from this food group was consumed. Be sure to use examples!					
	Food Group	Examples			Respon se 1=Yes 2=No
L.1.2	[s4_cereal]CEREALS	Corn/maize, Rice, Wheat, Sorghum, Millet or any other grains or foods made from these (e.g. Ugali, Bread, Noodles, Porridge or other grain products)			
L.1.3	[s4_root_tuber]WHITE ROOTS AND TUBERS IBINYABIJUMBA	Irish Potatoes, White Yam, White Cassava, or other foods made from roots			
L.1.4	[s4_yel_oran_veg]YELLOW/ORANGE VEGETABLES AND TUBERS	Pumpkin, Carrot, Squash, or Sweet Potato that are orange inside + other locally available vitamin A rich vegetables (e.g. Red Sweet Pepper)			

L.1.5	[s4_green_veg]DARK GREEN LEAFY VEGETABLES	Dark green leafy vegetables, including wild forms + locally available vitamin A rich leaves such as Amaranth, Cassava leaves, Kale, Spinach	
L.1.6	[s4_oth_veg]OTHER VEGETABLES	Other vegetables (e.g. Tomato, Onion, Eggplant, Green beans) + other local vegetables	
L.1.7	[s4_vitamin]VITAMIN A RICH FRUITS	Ripe Mango, Ripe papaya, Dried Peach, Bananas, Jackfruit and 100% fruit juice from these + other locally available Vitamin A rich fruits	
L.1.8	[s4_oth_fruit]OTHER FRUITS	Other fruits, including wild fruits and 100% fruit juice made from these	
L.1.9	[s4_organ_meat]ORGAN MEAT	Liver, Kidney, heart or other organ meats or blood-based foods	
L.1.10	[s4_flesh_meat]FLESH MEAT	Beef, Pork, Lamb, Goat, Rabbit, Game, Chicken, Duck, Other birds, Insects	
L.1.11	[s4_egg]EGGS	Eggs from Chicken, Duck, Guinea fowl or any other egg	
L.1.12	[s4_fish]FISH	Fresh or dried fish	
L.1.13	[s4_leg_nut_seed]LEGUMES, NUTS AND SEEDS	Dried Beans, Dried Peas, Lentils, Nuts, Seeds or foods made from these (eg. Peanut butter) amavuta y'ubunyobwa	

L.1.14	[s4_milk]MILK AND MILK PRODUCTS	Milk, Cheese, Yogurt or other milk products	
L.1.15	[s4_oil_fat]OILS AND FATS	Oil, Fats or Butter added to food or used for cooking	
L.1.16	[s4_sweet]SWEETS	Sugar, Honey, Sweetened soda or sweetened juice drinks, Sugary foods such as Chocolates, Candies, Cookies and Cakes	
L.1.17	[s4_spices]SPICES, CONDIMENTS AND BEVERAGES	Spices (Black Pepper, Salt), Condiments (Soy Sauce, Hot Sauce), Coffee, Tea, Alcoholic beverages	
L.1.18	[s4_eatyes]Did you or anyone in your household eat anything (meal or snack) OUTSIDE of the home yesterday?		1 = Yes 2 = No

PART 2: HOUSEHOLD HUNGER SCALE

L.3.1	[s4_eat4w]In the past [4 weeks/30 days], was there ever no food to eat of any kind in your house because of lack of resources to get food?	1=Yes 0=No		
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- [s4_mealnorm] In normal time, how many meals do you have per day?
- [s4_mealhunger] How many meals do you have per day during a hunger gap?
- [s4_hunger7d] In the past 7 days, how many days have you or someone in your household had to go to sleep at night hungry because there is not enough food ?

4.5 SHOCKS & COPING STRATEGIES

We would like to ask you about the shocks that the household has gone through in the past 12 months and the consequences on household's welfare.

Shock	1. [ss10q_x] Did you experience [SHOCK] in the past 12 months?	2. [shock_other] In the last 12 months you experienced 1=Flood 2= Landslide/erosion 3=Reduction in the earnings of currently employed household members 4= Theft of money/valuables/assets 5= Conflict/violence 6= Fire 7=Other shock [Specify] 9=No shock	[ss10_1q_X] When did the [SHOCK] first occur?	[ss10_2q_X]How long did [SHOCK] last? Number of months	5. As a result of the [SHOCK], was there a decline in your household's			
	1 = Yes 0 = No >> next shock		Months		1 = Yes 0 = No			
					[ss10b1_x]Income			[ss10b1_x] Milk production
Drought/Irregular Rains								
Crop Pests or Livestock Disease								
Price shock (unusually high agricultural input/food prices or unusually low output prices)								
Serious Illness, Accident or Death of Household Member(s)								

Section 5. DAIRY PROGRAMS

We are now going to ask you about dairy development programs that are taking place in your communities. Please respond according to your knowledge and your opinion about these programs.

[s5_respondent]ENUMERATOR: select the name of the household member responding to this section

5.1 EADD (ALL)

1. [heard_eadd] Have you heard of EADD, the East Africa Dairy Development program? 1=yes 0=no	2. [heard_heifer] Have you heard of Heifer International? 1=yes 0=no >> q7 if q1=0	3. [activity_eadd] What type of activities does EADD or Heifer do in your subcounty? See Activity Table below	4. [part_eadd] Has anybody from your household participated in or benefitted from [EADD activities]? 1=yes 0=no >>5	5. [benefit_eadd] Outside of these activities, has anybody from your household indirectly benefitted from EADD ? 1=yes 0=no >>q7	5a.[benefit_eadd_who] [If yes] Which member or members of the HH ?	6. [how_eadd] How did you benefit? 1=Higher prices in cooperatives 2= Guaranteed sales of milk in cooperatives 3=Improved breeding 4=Better relationships with other farmers 6=Knowledge/Learning new things 5=Other
---	---	---	---	--	---	--

1-Training on dairy feeding practices by farmer from the village (Farmer Training program)	10-Exchange visits to other dairy farms
2-Other training on dairy feeding practices	11-Other training
3-Support of the dairy cooperative/PO with material (cooling plants, generator etc.)	12-Saving groups
4-Institutional strengthening of the dairy cooperative/PO	13-Loans for milk equipment
5-Trainings on breeding for dairy cattle	14-Loans for animal drugs/treatment
6-Trainings on animal health for dairy cattle	15-Distribution of improved dairy cattle
7-Trainings on crop cultivation	16-Distribution of seeds/planting material for feeds
8-Trainings on poultry or other livestock	17-Access to AI (Artificial Insemination)
9-Training in group formation, social capital, leadership	18-Other activity
	999-Don't know/Not sure

7. Are you (or is one member of your household) a member of a dairy producer organization / dairy cooperative?

[PO_member] 1. Yes 2.No >>q12

[If PO_member==1] 8. What is the name of this dairy cooperative?

[PO_name] 1. Kagulu. 2. Buyende 3. Balawoli 4. Namwenda. 5. Other [specify]

[If PO_member==1]

9. When did you (or the member of your household) become a member of this dairy cooperative?

[PO_month] _____ (month, 1 to 12)

[PO_year] _____ (year, four digits)

[If PO_member==1]

10. Have you paid membership fees?

[PO_fees] 1. Yes 2.No

10-a [PO_amount] If YES, how much ?

[If PO_member==1]

11. Have you paid shares to become a full member?

[PO_shares] 1. Yes 2.No

12. Are you (or the member of your household) a member of a group of dairy farmers in your village or parish?

[dig_member] 1. Yes. 2. No

[If dig_member==1]

13. When did you (or the member of your household) become a member of this group?

[dig_month] _____ (month, 1 to 12)

[dig_year] _____ (year, four digits)

5.2 ATTENDING TRAINING (NON-FTs ONLY)

14. [know_nameft] Do you know [name of FT or potential FT]? 1=yes 0=no >> next subsection 2=deceased>> next subsection 3= Heard about FT but doesn't know personally	15. [knowledge_feeding] How knowledgeable is [name FT or potential FT] in FEEDING PRACTICES? <i>Read options 1 to 5</i> 1= not knowledgeable at all 2= only a bit knowledgeable 3= more or less knowledgeable 4= knowledgeable 5=very knowledgeable 999= don't know	16. [knowledge_other] How knowledgeable is [name FT or potential FT] in OTHER ASPECTS of dairy farming, such as breeding or animal health? <i>Read options 1 to 5</i> 1= not knowledgeable at all 2= only a bit knowledgeable 3= more or less knowledgeable 4= knowledgeable 5=very knowledgeable 999= don't know	17. [helpful_advice] How helpful is the advice [name FT or potential FT] gives to fellow farmers ? <i>Read options 1 to 5</i> 1= not helpful at all 2= only a bit helpful 3= more or less helpful 4= helpful 5= very helpful 999= don't know	18. [approp_advice] Now consider that different practices are useful for different farmers, as the situation of each farmer is different. Consider your own situations and needs. Is the advice of [name FT or potential FT] appropriate? 1=yes 0=no 999= don't know
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19. [neighbors] Is [FT name] one of your close neighbors? 1=yes 0=no	20. [friends] Is [FT name] one of your close friends? 1=yes 0=no	21. [talk] Do you talk to [FT name] frequently? 1=yes 0=no	22.How long ago was the last time you talked to [FT name]? [miz_lsttime] amount [miz_unit] Unit time				
23. [days30seek] In the last 30 days, has [FT name] come to seek your advice on dairy farming? 1=yes 0=no	24. [month12ask] In the past 12 months Have you asked for advice from [Ft_name] on dairy farming? 1=yes 0=no	25. [days30ask] In the last 30 days, have you asked for advice from [FT name] on dairy farming? 1=yes 0=no	26. [learnrnew] Do you think you can learn anything new from [FT name] in dairy farming? 1=yes 0=no	27. [teachnew] Do you think [FT name] could learn anything new from you in dairy farming? 1=yes 0=no	28. [borrow4rm] In case of abrupt need can you borrow money from [FT name] ? 1=yes 0=no	29. [lendmoney] In case of abrupt need, can [FT name] borrow money from you? 1=yes 0=no	30. [talkchurch] Do you talk to [FT name] at church or mosque? 1=yes 0=no

31. [ft_train_know] To your knowledge, does [FT] train other farmers on dairy farming activities? 1=yes 0=no >>40 999=don't know_>>40	32. [attend_training_byft] Have you, or another member of your household, ever attended a training on dairy farming led by [FT]? 1=yes 0=no >>40	33. [sb_else] Was there somebody else that led the last training together with [FT]? 1=yes 0=no >>35
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34. [whoelse] Who led the training with [FT]? 1=FT from another village [Specify] 2=Other farmer from the village 3=Other farmer from another village 4=Extension Agent 6=Agro-vet 5=Other	35. [s5_ss2_who_attend] Who among the members of your household attended the training of [FT]? IDs	36. [s5_ss2_whenattend] When was the last time you, or another member of your household, attended a training led by [FT]? Month Year	37. [times_att] Over the past 12 months, how many times have you, or another member of your household, attended a training led by [FT]? Number	38. [number_farmer_att] In general, how many farmers attend these trainings? Number
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39. [topic_training]What were the topics covered during those trainings? See Table Please probe and select all that apply	40. [visit] Has [FT] ever visited your home to talk about dairy farming? 1=yes 0=no >>45	40b. [hhm_discuss] Did anyone from your household attend the discussion with [FT] ? 1=yes 0=no >>42	41. [s5_ss2_who_discuss] Who among the members of your household participated in the discussion? IDs	42. When was the last time [FT] visited your home to talk about dairy farming? [month_visit] Month [year_visit] Year	43. [visit_time] Over the past 12 months, how many times [FT]visited you at home to talk about dairy farming?	44. [topic_discussion] What were the topics covered during those visits? See Table <i>Please probe and select all that apply</i>	45. [demonstrate_visit] During the trainings or the visit to your home, did [FT] demonstrate how to plant or practically implement any particular feeding practice? 1=yes 0=no >> 47	46. [demonstrate_topic] Which feed or feeding practice did he demonstrate? See Table <i>Please probe and select all that apply</i>	47.. [useful_visit] What is the most useful lesson you, or another member of your household, have learned from these trainings or visits? See Table
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1-Changing breeds from indigenous to cross	13-Sweet potato vines	25-Fruits and fruit leaves	37-Mineral licks/block
2-Regulating the number of cows: the fewer the better	14-Desmodium	26-Silage making	38-Making salt locally
3-Regulating milking	15-Lablab	27-Hay making	39-Other Supplements and commercial feeds
4-Use manure for planting	16-Guatemala grass	28-Feed formulation	40-Molasses
5-Respect spacing when planting	17-Centrocema	29-Bush clearing and weed control	41-mola plus microbes
6-Calliandra	18-Siratro	30-Termites control	42-maize, wheat, rice bran
7-Rhodes Grass/Cloris	19-Katiti /gliricidia	31-Spraying against ticks	43-cotton seed cake
8-Elephant Grass	20-Sorghum	32-Perimeter fencing	44-dairy meal
9-Mucuna	21-Natural grasses	33-Constructing stalls	45-calf pellets
10-Setaria	22-Other Fodder shrubs	34-Paddockging	46-home-made rations
11-Bracharia	23-Chopping	35-Oversowing	47-compost making
12-Lucerne	24-Crop residues	36-Water harvesting	99- Other

48. [rec_seed] Have you ever received seeds, cuttings or seedlings for feeds from [FT] in your village? 1=yes 0=no >> 51	49a. [num_rec_seed] How many times have you ever received seeds, cuttings or seedlings for feeds from [FT]? -----	49b. When did you receive these seeds, cuttings or seedlings? [seed_month1] Month [seed_year1] Year	49c. When did you receive these seeds, cuttings or seedlings for the last time? [seed_month2] Month [seed_year2] Year	50. [which_seeds] For which feeds did you receive these seeds, cuttings or seedlings? See Table <i>Please probe and select all that apply</i>	51. [rec_training] Has [FT] received training from a program in order to train other farmers from the village in cattle feeding? 1=yes 0=no 999=don't know	SKIP TO 55 if control village 52. [spost] Does [FT] have a signpost in front of his/her compound indicating he is a farmer trainer? 1=yes 0=no >> 55
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53. [adv_spost] What is the main advantage of this signpost? 1=shows the importance of the task 2=shows progress in training 3=shows what to aspire to 4=accountability 5= info on how to contact FT 6=confirms status FT 7=none 8=other	54. [disadv_spost] What is the main disadvantage of this signpost? 1=shows wrong information on the FT 2=shows wrong info in training 3=image is an unrealistic goal (cow/feed) 4=creates envy among other FT 5=creates envy among farmers from the same village 6=none 7=other	55. [ea] [ea_led] Has [FT] received any visits from an extension agent in the last 12 months? 1=yes 0=no >> 58 999=don't know>>58	56. [adv_ea] What is the main advantage of these EA visits? 1=shows the importance of The FT task 2=helps FT with training 3=increases knowledge of FT 4=accountability and monitoring work of FT 5=check FT's animals 6=none 7=other	57. [disadv_ea] What is the main disadvantage of these EA visits? 1=only assist FT creates inequality 2=extension agent knows less than FT 3=visit too short-only monitors 4=creates envy among other FT 5=creates envy among farmers from the same village 6=none 7=other
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58. [needs] Has [FT] ever talked to you individually about practices that would be most suited for your farm, given the amount of land and animals you have? 1=yes 2=no >> 60	59. [recommend] Which practices did he recommend for your specific situation? See Table <i>Please probe and select all that apply</i>	SKIP TO subsection 5.4 if control village 60. [pos_change] Are there any positive changes in the village related to the FT program? 1=yes 2=no >>62	61. [which_pos_change] Which positive changes? 1=more interest in dairy farming 2=more unity/less Conflict 3=higher milk Productivity 4=less animal Diseases 5=higher sales and animal prices 9=other	62. [neg_change] Are there any negative changes in the village related to the FT program? 1=yes 2=no >> 64	63. [which_neg_change] Which negative changes? 1=more envy towards FT 2=more conflict related to dairy animals 3=lower milk productivity 4=other
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Consider the following possible reasons that can motivate somebody to train other farmers in dairy activities:

- a. [help_1] Help other farmers from the village [HELP OTHERS]
- b. [knowledge_2] Acquire new knowledge [KNOWLEDGE]
- c. [known_3] Being known, establish new relationships with other farmers; earn respect and status in the community. [BEING KNOWN]
- d. [input_4] Receive free inputs (such as seeds) [FREE INPUTS]
- e. [future_5] Hope to receive future benefits [FUTURE BENEFITS]

64. In your opinion, what motivates [FT] to train other farmers in dairy activities?

Please allocate these 20 beans between these different reasons, putting more beans on those that are more relevant. Think of the 20 beans as marks for each of the reasons.

65. [motivation_other] Are there other reasons, besides the ones already mentioned, that might motivate [FT] train other farmers in dairy activities?
[motivation_reason] Please specify.

5.3 ORGANIZING TRAINING (FTs ONLY)

1. [eadd_tr] Have you ever attended a training session on dairy farming organized by EADD? 1=yes 0=no	2. [farmer_tr] Have you received training from a program in order to train other farmers from the village in cattle feeding? 1=yes 0=no	3. [led_tr] Have you ever led a training session on dairy farming for other farmers in your village? 1=yes 0=no >> 16	4. [sbelse_led_ft] Was there somebody else that led the training together with you? 1=yes 0=no >> 6a	5. [whoelse_led_ft] Who led the training with you? 1=FT from another village [Specify] 2= another farmer from the village 3=another farmer from neighbouring village 4=extension agent 5=other	6a. [hbm_attend_ft] Did anyone from your household attend the training ? 1=yes 0=no >> 7	6b. [hhid_attend_ft]Who among the members of your household attended? IDs	7. When was the last time you led a training for farmers from your village? [s5_ss2_month_led]Month [s5_ss2_year_led]Year	8. [times_led] Over the past 12 months, how many times have you led a training for farmers from your village?	9. [number_farmers_led] In general, how many farmers attend these trainings?	10. [topic_training_led_tr] What were the topics covered during those trainings ? See Table above <i>Please probe and select all that apply</i>
11. [demonstrate_ft] Did you demonstrate how to practically implement [TOPIC]? 1=yes 0=no	12. [useful_training_ft] According to you, what is the most useful lesson the people attending the training have learned from participating in the trainings? See Table	Skip to 16 if control FT 13. [not_covered] Are there any topics that you learned in the EADD training you have not yet covered in the trainings for the farmers in your village? 1=yes 0=no >> 16	14. [not_covered_topics] Which topics? See Table <i>Please probe and select all that apply</i>	15. [whynot_cover] Why have you not covered those? 1=lack of knowledge 2= not appropriate because too expensive 3=not appropriate because too complicated 4=other	16. [visit_ft] Have you ever visited the home of other farmers to talk about dairy farming? 1=yes 0=no >> 22	17. [] When was the last time you visited the home of another farmer to talk about dairy farming? [s5_ss2_month_visit]Month [s5_ss2_year_visit]Year	18. [visit_time_ft] Over the past 12 months, how many times have you visited the home of another farmer to talk about dairy farming? <i>Number</i>	19. [topic_discuss_ft] What were the topics covered during those visits? See Table above <i>Please probe and select all that apply</i>		

20. [demonstrate_visit_ft] Did you demonstrate how to practically implement [TOPIC]? 1=yes 0=no	21. [useful_visit_ft] What is the most useful lesson the people you visited learned from these visits? See Table	22. [rec_seed_ft] Have you ever received seeds, cuttings or seedlings for feeds from EADD? 1=yes 0=no >> 28	23. When did you receive these seeds, cuttings or seedlings? [month_seed_ft] Month [year_seed_ft] Year	24. [which_feeds_ft] For which feeds did you receive these seeds, cuttings or seedlings? See Table <i>Please probe and select all that apply</i>	25. [distribute_seed] Have you ever distributed seeds, cuttings or seedlings for feeds to other farmers from your village? 1=yes 0=no >>28	26. []When did you distribute these seeds, cuttings or seedlings? [distribute_month] Month [distribute_year] Year	27. [which_feeds_distribute] For which feeding plants did you distribute these seeds, cuttings or seedlings? See Table <i>Please probe and select all that apply</i>
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SKIP to 31 if control FT 28. [spost_ft] Do you have a signpost in front of your compound indicating you are a farmer trainer? 1=yes 0=no >> 31	29. [adv_spost] What is the main advantage of this signpost? 1=shows the importance of FT task 2=shows progress in training 3=shows what to aspire to 4=accountability 5= info on how to contact FT 6=confirms status FT 7=none 8=other	30. [disadv_spost] What is the main disadvantage of this signpost? 1=shows wrong information on FT 2=shows wrong info in training 3=image is an unrealistic goal (cow/feed) 4=creates envy among other FT 5=creates envy among farmers from the same village 6=none 7=other
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31. [ea_ft] Have you received any visits from an extension agent in the last 12 months? 1=yes 2=no>>35	32. [number_ea_ft] How many visits from an extension agent have you received? Number of visits	33. [adv_ea_ft] What is the main advantage of these visits? 1=shows the importance of the FT task 2=helps FT with training 3=increases knowledge of FT 4=accountability and monitoring work of FT 5=check FT's animals 6=none 7=other	34. [disadv_ea_ft] What is the main disadvantage of these visits? 1=only assist FT-creates inequality 2=extension agent knows less than FT 3=visit too short-only monitors 4=creates envy among other FT 5=creates envy among farmers from the same village 6=none 7=other
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35. [talk_farmers_ft] Have you ever talked to individual farmers about practices that would be most suited for their farm, given the amount of land and animals they have? 1=yes 0=no >>37	36. [needsass] Did you fill in a needs assessment form ? 1=yes 0=no	Skip to end questionnaire if control village 37. [pos_change_ft] Are there any positive changes in the village related to the FT program? 1=yes 0=no >> 39	38. [which_pos_change_ft] Which positive changes? 1=more interest in dairy farming 2=more unity/less conflict 3=higher milk productivity 4=less animal diseases 5=higher sales and animal prices 9=other	39. [neg_change_ft] Are there any negative changes in the village related to the FT program? 1=yes 0=no >> 41	40. [which_neg_change_ft] Which negative changes? 1=more envy towards FT 2=more conflict related to dairy animals 3=lower milk productivity 4=other
--	---	---	--	---	---

Consider the following possible reasons that can motivate you to train other farmer in dairy farming activities:

- a. [help_ft_1] Help other farmers from the village [HELP OTHERS]
- b. [knowledge_ft_2] Acquire new knowledge [KNOWLEDGE]
- c. [known_ft_3] Being known, establish new relationships with other farmers; earn respect and status in the community. [BEING KNOWN]
- d. [input_ft_4] Receive free inputs (such as seeds) [FREE INPUTS]
- e. [future_ft_5] Hope to receive future benefits [FUTURE BENEFITS]

If 3=1 or 16=1

41. In your opinion, what motivates you to train other farmers for dairy activities?

Please allocate these 20 beans between these different reasons, putting more beans on those that are more relevant. Think of the 20 beans as marks for each of the reasons.

If 3=1 or 16=1

42. [motivation_ft_other] Are there other reasons, besides the ones already mentioned, that might motivate you to train other farmers for dairy activities?

[motivation_ft_reason] Please specify.

5.4 RECEIVING SUPPORT FROM CFs, CAVEs AND OTHER FTs

[Next questions only if area has CF or CAVE]

1. Have you received any support from [LOCAL_CF] in your milking activities?

[support_CF] 1. Yes 2.No

[If support_CF=1]

2. What kind of support did you receive from [LOCAL_CF]?

[type_support_CF_xx] **ENUMERATOR Several options possible, please circle.** 1. Advice on animal feeding. 2. Advice on animal health. 3. Seeds, seedlings or cuttings of cattle feeds. 4. Other [specify]

[If support_CF=1]

3. When was the last time you received that support?

[month_support_CF] _____ (month, 1 to 12)

[year_support_CF] _____ (year, four digits)

4. Have you received any support from [LOCAL_CAVE] in your milking activities?
[support_CAVE] 1. Yes 2.No

[If support_CAVE=1]

5. What kind of support did you receive from [LOCAL_CAVE]?

[type_support_CAVE_xx] **ENUMERATOR Several options possible, please circle.** 1. Advice on animal feeding. 2. Advice on animal health. 3. Seeds, seedlings or cuttings of cattle feeds. 4. Drugs for your animals. 5. Other inputs for your animals 6.Other [specify]

[If support_CAVE=1]

6. When was the last time you received that support?

[month_support_CAVE] _____ (month, 1 to 12)

[year_support_CAVE] _____ (year, four digits)

	7. Do you know who [NEIGHBORING_FT] is? [know_ngb_FT_xx] 1. Yes. 2. No >> next row	8. Have you, or any member of your household, ever attended a training session on dairy farming led by [NEIGHBORING_FT]? [attend_train_xx] 1. Yes. 2. No >> 5	9. When was the last time you, or another member of your household, attended a training led by [NEIGHBORING_FT]? [month_xx] [year_xx]	10. Over the past 12 months, how many times have you, or another member of your household, attended a training led by [NEIGHBORING_FT]? [number_attend_xx]	TABLE CONTINUES, PLEASE FOLLOW EACH ROW IN NEXT TABLE
[NEIGHBORING_FT]					
xx=1					
xx= ...					
xx=25					

	11. [visitt] Has [[NEIGHBORING_FT]] ever visited your home to talk about dairy farming? 1=yes 0=no >>8	12. When was the last time [[NEIGHBORING_FT]] visited your home to talk about dairy farming? [visit_month_xx] [visit_year_xx]	13.[number_visit] Over the past 12 months, how many times [[NEIGHBORING_FT]] visited you at home to talk about dairy farming?	14.[advice] Have you received advice from [[NEIGHBORING_FT]] on dairy farming in any other circumstances? 1=yes 0=no >> Next row	15. When was the last time you received advice from [[NEIGHBORING_FT]] on dairy farming in these circumstances? [advice_month_xx] [advice_year_xx]	
[NEIGHBORING_FT]						
xx=1						
xx= ...						
xx=25						