

## **Livestock Data Innovation Project**

### **Facilitation of Field Work and Workshop to Identify and Rank Livestock Production Constraints**

#### **Consultancy Inception Note**

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## **Introduction**

### **Background Information**

The role of Livestock in African economies cannot be overemphasized. Livestock play a vital role in the agricultural and rural economies of the developing world. Not only do they produce food directly, they also provide key inputs to crop agriculture. For many smallholder farmers, livestock are the only ready source of cash to buy inputs for crop production - seeds, fertilizers and pesticides. Livestock income also goes towards buying things the farmers cannot make for themselves. And that includes paying for school fees, medicine and taxes. Income from cropping is highly seasonal. In contrast, small stock, with their high rates of reproduction and growth, can provide a regular source of income from sales. So can milk and milk products like butter and cheese. Larger animals such as cattle are a capital reserve, built up in good times to be used when crops are poor or when the family is facing large expenses such as the cost of a wedding or a hospital bill. Despite this contribution to poverty alleviation and national economies, 'there is... inadequate data to demonstrate quantitatively the role of animal resources in African economies, and to use such data to create broad awareness among policy-makers and investors' (AU-IBAR Strategic Plan, 2010-2014).

The African Ministers of Animal Resources in Africa have also advocated for capacity enhancement for timely collection, analysis and sharing of quality livestock data to guide policy, strategy and investment programmes' (African Union, 2010). With the current paucity of statistical data on which to base marketing, investment, or policy decisions, or with which to assess the efficacy of current commitments or policies' (Global Strategy to Improve Agricultural and Rural Statistics, 2011), it urgent to build local capacity for data collection and sharing. Such capacity can only be built if information on data elements and constraints to its collection and sharing is revealed. It is also better informed with data on constraints to livestock production at the local level. The constraints are better presented by local producers and traders in the livestock industry.

### **About the Livestock Data Innovation Project**

The improvement of livestock data in Africa is pivotal for better policies. The Livestock Data Innovation Project (LDIP - also known as Improving Livestock for Better Policies Project), is a three-year (2010-2012) project which works with national governments and institutes to pilot and develop methodologies for identifying, collecting and analyzing livestock data in three pilot countries-Uganda, Tanzania and Niger. The Livestock Data Innovation Project is sponsored by the Bill & Melinda Gates Foundation and jointly implemented by the World Bank, ILRI and FAO, in collaboration with AU-IBAR.



**Figure 1:** The Project countries

The Project supports the identification of key livestock indicators and underlining data which fosters pro-poor investment and policy formulation through the institutionalization of this data into national frameworks of agricultural statistics. Through the generation and collection of data, the setting up of instruments, platforms and analysis, effective investment interventions can be more easily identified. By building local capacity, data collection and analysis can, firstly, be institutionalized as a diagnostic tool to determine entry points for development and then, secondly, serve as an effective means of evaluation to measure the impact of interventions.

The project has the broad goal of developing a broad-based livestock data-for-development initiative. The project has two main components relating to data collection, analysis, use and distribution. One component relates explicitly to data collection and analysis and has three sub-components—household, market, and constraint analysis.

- *Sub-Component 1:* The role of livestock in poverty reduction: assessing the evidence, improving methods and fostering the use of household-level livestock survey data.
- *Sub-Component 2:* People, markets, and identifying access opportunities: identifying livestock product “hot spots” and creating opportunities for market participation by smallholder livestock keepers.
- *Sub-Component 3:* Increasing income through constraint analysis-- providing entry points for effective interventions (either public, private, or donor-led) to support smallholder access to markets.

The second component revolves around sector advocacy, communication, and database development. All components are aimed at ultimately facilitating the identification of investment opportunities that promote an equitable and efficient growth of the livestock sector.

While the Livestock Data Innovation Projects is piloting data-related activities in three sub-Saharan African countries, it will produce two major outputs of use for all sub-Saharan African countries:

1. A 'Sourcebook on Livestock Data in Africa', which is a guide towards collecting and analyzing livestock-related and poverty data with the objective of better understanding and responding to the key developmental questions facing livestock sectors.
2. An advocacy document 'Making the Case for Investing in Livestock in Africa' which provides empirical evidence on the role of livestock in the lives and livelihoods of the poor and recommends strategies to enhance the contribution of livestock to poverty reduction and economic growth.

The Project is expected to variously inventorize the existing livestock-poverty data and data sources in Uganda, Tanzania and Niger and establish communications amongst users and suppliers of livestock statistics to pilot new methods for collection, validation and analysis of data and dissemination of indicators, which facilitate both public and private investments in the livestock sector. In doing this, the project: (a) combines production, value chain and consumption data to promote better understanding of the livestock-poverty linkages; (b) identifies key indicators that provide insights not only on production and productivity but also on other livelihood-supporting services provided by livestock; (c) takes a demand-driven approach and design a targeted communication and advocacy strategy to support the mainstreaming of key livestock data / indicators into national statistical systems. A continuous approach to availability of livestock statistics is being adopted to facilitate the identification of good investment opportunities, either for the public and the private sector.

## Constraints Identification

### Issues and Approaches

Many approaches exist for identifying livestock developmental constraints when farm-household data are available. At larger spatial scales, constraint analyses have mostly been conducted by applying descriptive methods to collated information through desk reviews of the literature (Salami *et al.* 2010). Participatory rural appraisal (PRA), which involves active participation of farmers to identify constraints and plan appropriate solutions (Meganathan *et al.* 2010; Devendra 2007) also provides tools and methods for consulting and reaching consensus on constraints through many ranking and scoring scales. When detailed farm-level data are available, linear programming has often been applied to identify binding constraints (Siegel and Alwang 2005; Jansen and Wilton 1984). This approach requires that potential constraint factors are accurately included into the programming. There also exist several econometric methods to estimate agricultural supply responses, using both household and country level data, have also been used to identify productivity enhancing or hindering factors, i.e. opportunities or constraints (Heltberg and Tarp 2002). Constraints have also been identified by using data envelopment analysis (DEA) that combines farm efficiency analysis with statistical identification of the factors associated with low performance. This mirrors the two step approach above (Gelan and Muriithi 2012; Stokes *et al.* 2007).

The use of any one approach depends on the specific data that are available. Data from the Tanzania 2008 National Panel Survey (NPS), for example, show that consumption of milk and other dairy products is anticipated to increase in the coming years, providing a major business opportunity for smallholders (LDIP 2011). At the same time, a preliminary analysis of NPS farm-level data has revealed that, although dairy outputs are distinguished and valued in the database, farm inputs are not divided and allocated to different farm activities (e.g. livestock, cropping, etc). LDIP proposes to use a mix of approaches to identify and evaluate constraints, and reveal opportunities for investments in small dairy production systems in Tanzania. More specifically, field work and participatory workshops are adopted to validate the major findings from other approaches.

## Goal of Constraints Analysis

The goals of the LDIP constraint analysis are to:

- Identify the livelihood-related role and performance of smallholder dairy
- Identify and rank the constraints to its performing that role
- Identify the improvements needed in data collection, analysis and dissemination that will contribute to overcoming these constraints by way of public and private investment.

## Consultancy Methodology

### Approach to Constraints Analysis

The smallholder dairy production system in Tanzania has been identified as a high-potential target for public and private interventions to enable market-led pro-poor development. This is based on a series of analyses from the diverse available data sources including:

- Tanzania's 2008 National Panel Survey (NPS), showing that consumption of milk and other dairy products is (i) strongly positively associated with income levels and (ii) subject to high levels of willingness to pay for quality.
- Field research showing that markets exist, in both rural and urban areas, that reward quality in milk through price premia.
- Analysis of participatory exercises amongst dairy industry specialists that indicates that smallholder dairy producers and delivery systems can supply such high value markets.
- Previous ILRI analysis of the Tanzanian dairy sector that depicted vibrant markets for raw milk as sold through informal markets that serve poor producers and poor consumers alike, while employing large numbers of intermediaries that are also drawn from the poor.

The constraints analysis will focus on producers' and traders response to such market signals. Based on a partial productivity analysis already done using the NPS data (which also featured dairy production households) that provided insight into milk productivity on prevailing constraints and their contributing factors, field work and participatory processes will be used to validate current findings. Field work for the constraint analysis then proceeded in stages that

- Invited commentary on the partial analysis by producers
- Enabled individual data collection on variables not provided by the NPS
- Allowed a mapping of underlying constraints onto symptomatic constraints
- Examined symptomatic constraints in terms of specific domains lending themselves to management change and investments
- Canvassed producers' ideas on interventions to alleviate constraints
- Identified data improvement opportunities for advocacy to a range of stakeholders

Four workshops are to be convened, two at each of two locations featured in pro-poor dairy smallholder development initiatives (Morogoro and Tanga). At each workshop a mixed mode of individual data collection and group discussion was used. The data will focus on:

- Identification of performance measures
- Characterization of farm system – to improve on household data as presented in NPS
- Identification and ranking of impact of underlying constraints as characterized by Salami et al.: land, labour and knowledge, supplemented by practical considerations of water, input supply and services
- Characterization of common management or intervention domains representing symptomatic constraints (feeds, animal health, breeding and marketing)
- Mapping of underlying constraints onto such domains to identify symptomatic perceptions and impacts

- Identification of mitigating interventions and actors

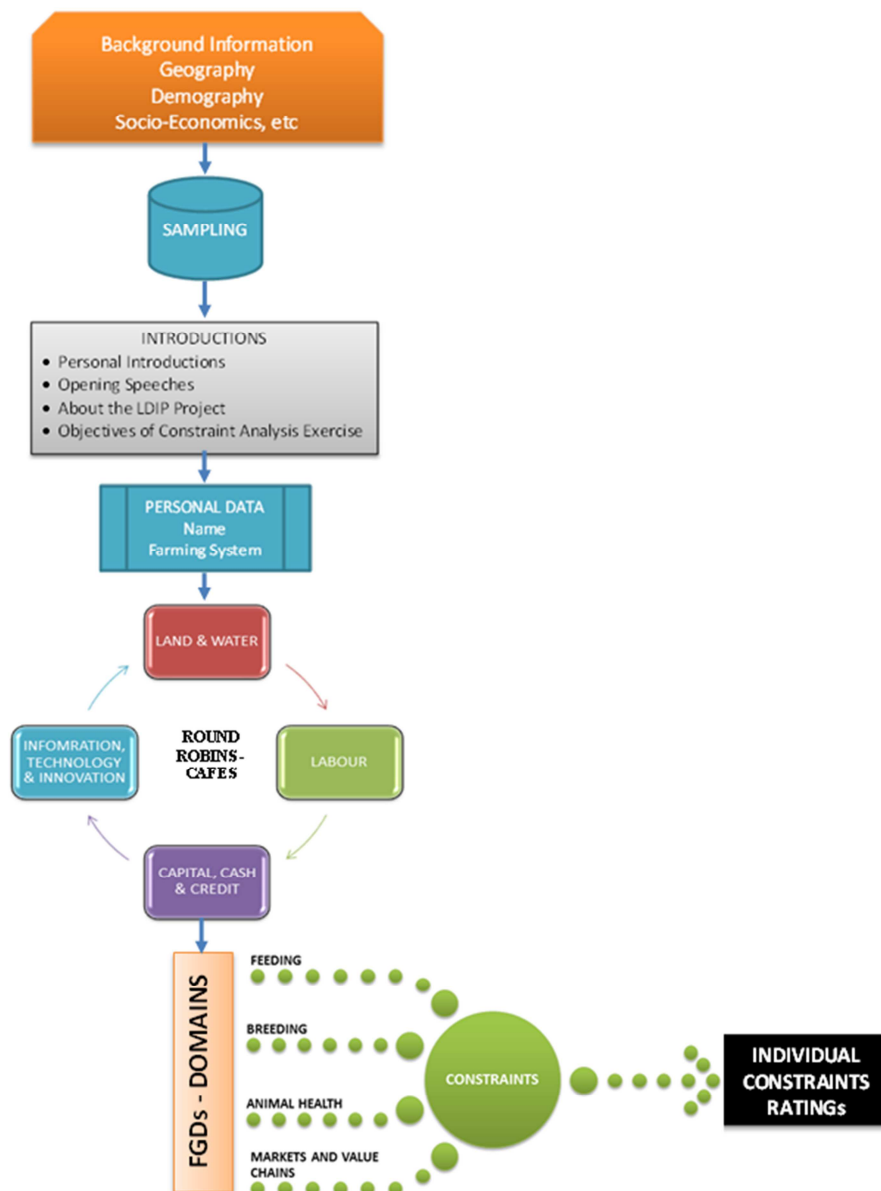
The workshops will each feature 30 producer participants (smallholder dairy - 20 with indigenous breeds only; 10 with improved breeds; also a split according to whether the householder sells milk regularly, or not). Local veterinary and extension staff, Ministry of Livestock and local government staff will participate in the workshops.

### Workshop Timetable

#### TIME

- 9:00 - INTRO TO WORKSHOP
- 9:10 - A. INITIAL DISCUSSION - INDIVIDUAL QUESTIONS
- 9:30 - PRESENTATION OF ILRI's ANALYSIS SO FAR
  - Consumption and demand
  - Milk markets and marketing
  - Characterization of households keeping cows
  - Milk productivity
  - Factors affecting milk productivity
  - Discussion
- 9:45 - BREAK
- 10:00 - INDIVIDUAL DATA COLLECTION: 45-minute session on farm system  
B. FARM SYSTEM
- 11:00 - INDIVIDUAL DATA COLLECTION
  - C. Land And Water
  - D. Labour
  - E. Capital, Cash And Credit
  - F. Information, Knowledge, Innovation And Organization
- 13:00 - LUNCH
- 13:30 - Special Domain Sessions: Group Discussions
  - Feeding
  - Breeding
  - Animal health
  - Market access and access to inputs
- 15:00 - Constraint Rating Procedure: INDIVIDUAL DATA COLLECTION
- 17:30 - END OF WORKSHOP

The workshop data collection process to follow the design below.



## Work Plan

| Day/Date  | Activity   | Comment/Remarks  |
|---|--|--|
| 1 <sup>st</sup> May – 8 <sup>th</sup> May 2018                      | <ul style="list-style-type: none"> <li>- Review of Project Documentation</li> <li>- Design of Inception Note</li> <li>- Consultancy Programming</li> <li>- Design of Tools and Approaches</li> </ul> | Done in consultation with ILRI/LDIP staff and field staff                                      |
| 9 <sup>th</sup> May 2012  | - Discussions in Nairobi with ILRI/LDIP liaison person   | Finalize approaches and tools and make final preparations for field work                       |
| Thursday 10 <sup>th</sup> May 2012                                  | - Travel to Dar es Salam   | Further field planning work and Courtesy calls on regional and district administration offices |
| Friday 11 <sup>th</sup> May 2012 – Sunday 13 <sup>th</sup> May 2012 | <ul style="list-style-type: none"> <li>- Travel to Morogoro</li> <li>- Meeting Morogoro with pilot participants</li> </ul>   | Testing of Tools and Approaches<br>Translation of questionnaire                                |

|   |   |  |
|---|---|--|
|   | - Refinement of tools and approaches                    | into Swahili   |
| Monday 14 <sup>th</sup> – Tuesday 15 <sup>th</sup> May 2012 | - Two-day workshop in Morogoro                          |  |
| Wednesday 16 <sup>th</sup> 2012                             | - Travel to Tanga/Korogwe                               | Courtesy call on District Executive Director and Livestock/veterinary Staff and finalization of plans for the two sites<br>Briefing of local staff to support data collection and language interpretation requirements |
| Thursday 17 <sup>th</sup> – Friday 18 <sup>th</sup> 2012    | - Workshop in Tanga/Korogwe<br>- Travel to Dar es Salam |  |
| Monday 21 <sup>st</sup> – Thursday 24 <sup>th</sup>         | - Writing of Workshop Report                            |  |

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## ANNEX 1: DETAILED WORKSHOP PROCESS AND TOOLS

ID

### SESSION A: BACKGROUND AND PERFORMANCE OBJECTIVES

#### KIPINDI A: TAARIFA ZA MFUGAJI NA SABABU ZA MAFANIKIO KATIKA UFUGAJI

I1 Name /Jina \_\_\_\_\_

I2 Cell phone number / Namba ya simu ya kiganja \_\_\_\_\_

I3 My farm production is / Uzalishaji shambani kwangu ni

- Livestock only / Mifugo peke yake
- Some crops but mostly livestock / Baadhi ya mazao lakini mifugo kwa wingi
- Mostly crops / Mazao kwa wingi
- Crops only / Mazao peke yake

I4 In most years, I / Kwa miaka mingi, nina

- Move my household and animals in search of pasture and water / Hamisha kaya yangu and mifugo kutafuta malisho na maji
- Move my animals, but not my household, in search of pasture and water / Hamisha mifugo, lakini sio kaya yangu, kutafuta malisho na maji
- Neither of these / Sihamishi kaya wala mifugo



**STAGE 1: INDIVIDUAL RESPONSES/MAJIBU ZA MTU BINASFI**

A1: What is the main reason you keep cattle? (rank the first three)/Taja sababu zako za kufuga ng'ombe (orodhesha tatu za kwanza)

| REASON/SABABU  | SCORE/ALAM A<br>(three only/<br>tatu pekee) | In the last 2 years, have you succeeded / are you successful? Katika miaka miwili iliopita, umefaulu? |            |            |                             |
|--|---|---|------------|------------|-----------------------------|
|  | ***<br>**<br>*                              | Circle/Chora mviringo   |            |            |                             |
| 1. Income from milk sales/Kipato kutokona na uuzaji wa maziwa  | A1.1.1                                      | A1.1.2<br>  | A1.1.3<br> | A1.1.4<br> | A1.1.5<br>Don't know /Sijui |
| 2. Income from other dairy products/Kipato kutokana na uuzaji wa mazao mengine ya maziwa                       | A1.2.1                                      | A1.2.2<br>  | A1.2.3<br> | A1.2.4<br> | A1.2.5<br>Don't know /Sijui |
| 3. Income from cattle sales/Kipato kutokana na uuzaji wa ng'ombe   | A1.3.1                                      | A1.3.2<br>  | A1.3.3<br> | A1.3.4<br> | A1.3.5<br>Don't know /Sijui |
| 4. Social Purposes (e.g. dowry, cultural events, etc)/Sababu za kijamii (kama mahari, sherehe za kimila, n.k.) | A1.4.1                                      | A1.4.2<br>  | A1.4.3<br> | A1.4.4<br> | A1.4.5<br>Don't know /Sijui |
| 5. Nutrition and Food security / Lishe na usalama wa chakula   | A1.5.1                                      | A1.5.2<br>  | A1.5.3<br> | A1.5.4<br> | A1.5.5<br>Don't know /Sijui |
| 6. Keep as assets or wealth / Mali au utajiri  | A1.6.1                                      | A1.6.2<br>  | A1.6.3<br> | A1.6.4<br> | A1.6.5<br>Don't know /Sijui |
| 7. Draft power / Wanyama kazi  | A1.7.1                                      | A1.7.2<br>  | A1.7.3<br> | A1.7.4<br> | A1.7.5<br>Don't know /Sijui |
| 8. Manure production / Mbolea  | A1.8.1                                      | A1.8.2<br>  | A1.8.3<br> | A1.8.4<br> | A1.8.5<br>Don't know /Sijui |
| 9. Other (Specify one if any) / Nyingine (Taja kama zipo)  | A1.9.1                                      | A1.9.2<br>  | A1.9.3<br> | A1.9.4<br> | A1.9.5<br>Don't know /Sijui |

**STAGE 2: GROUP DISCUSSION / MAJADILIANO KATIKA KIKUNDI**

A3 How should that success be measured?  
Jinsi gani mafanikio yanaweza kupimwa?

OPEN QUESTION  
SWALI LA WAZI

**STAGE 3: SEASONAL MAPPING/KUAINISHA MAJIRA**

Group exercise to establish the rainfall pattern and obtain local names/references to the seasons /*Majadiliano katika vikundi kubaini mtawanyiko wa mvua na kupata majina ya asili ya majira*

A4 Monthly distribution of rainfall / *Mtawanyiko wa mvua kwa kila mwezi*

|  | J | F | M | A | M | J | J | A | S | O | N | D |
|--|---|---|---|---|---|---|---|---|---|---|---|---|
| Score for level of rainfall (0-5)<br><i>Alama kwa kiwango cha mvua (0-5)</i> |   |   |   |   |   |   |   |   |   |   |   |   |

**SESSION B-F: INDIVIDUAL DATA COLLECTION (FARM SYSTEM AND PRODUCTION FACTORS)**

**VIPINDI B-F: UKUSANYAJI WA TAKWIMU ZA MTU BINASFI (MFUMO WA SHAMBA NA VIGEZO VYA UZALISHAJI)**

**STAGE 1: FARM SYSTEM / MFUMO WA SHAMBA**

|    |  |        |               |        |                      |        |                   |        |        |        |         |         |         |
|----|--|--------|---------------|--------|----------------------|--------|-------------------|--------|--------|--------|---------|---------|---------|
| B1 | Number of cattle / Idadi ya ngombe   |        | Local / Asili |        | Cross-bred / Chotara |        | Purebred / Kisasa |        |        |        |         |         |         |
|    | 1. Cows / Majike walio zaa   |        | B.1.1         |        | B.1.2                |        | B.1.3             |        |        |        |         |         |         |
|    | 2. Heifers (before 1 <sup>st</sup> calf) / Mitamba   |        | B.2.1         |        | B.2.2                |        | B.2.3             |        |        |        |         |         |         |
|    | 3. Female Calves (still suckling) / Ndama jike wanao nyonya  |        | B.3.1         |        | B.3.2                |        | B.3.3             |        |        |        |         |         |         |
|    | 4. Male Calves (still suckling) / Ndama dume wanao nyonya  |        | B.4.1         |        | B.4.2                |        | B.4.3             |        |        |        |         |         |         |
|    | 5. Breeding Bulls / Madume ya mbegu  |        | B.5.1         |        | B.5.2                |        | B.5.3             |        |        |        |         |         |         |
|    | 6. Males (not suckling, less than 2 years) / Madume wasio nyonya chini ya miaka miwili   |        | B.6.1         |        | B.6.2                |        | B.6.3             |        |        |        |         |         |         |
|    | 7. Adult Males (Non-breeding) / Madume wakubwa wasio wa mbegu  |        | B.7.1         |        | B.7.2                |        | B.7.3             |        |        |        |         |         |         |
|    |  | M      | F             | M      | F                    | M      | F                 |        |        |        |         |         |         |
| B2 | Number of calves born last year / Idadi ya ndama waliozaliwa mwaka jana  |        | B2.1          | B2.2   | B2.3                 | B2.4   | B2.5              | B2.6   |        |        |         |         |         |
| B3 | Milk produced last year (LITRES PER DAY IN EACH MONTH)   |        |               |        |                      |        |                   |        |        |        |         |         |         |
|    | BREED / KOOSAFU  | J      | F             | M      | A                    | M      | J                 | J      | A      | S      | O       | N       | D       |
|    | Local / Asili  | B3.1.1 | B3.1.2        | B3.1.3 | B3.1.4               | B3.1.5 | B3.1.6            | B3.1.7 | B3.1.8 | B3.1.9 | B3.1.10 | B3.1.11 | B3.1.12 |
|    | Crossbred / Chotara  | B3.2.1 | B3.2.2        | B3.2.3 | B3.2.4               | B3.2.5 | B3.2.6            | B3.2.7 | B3.2.8 | B3.2.9 | B3.2.10 | B3.2.11 | B3.2.12 |
|    | Purebred / Kisasa  | B3.3.1 | B3.3.2        | B3.3.3 | B3.3.4               | B3.3.5 | B3.3.6            | B3.3.7 | B3.3.8 | B3.3.9 | B3.3.10 | B3.3.11 | B3.3.12 |
| B4 | Number of cows milked last year / Idadi ya ng'ombe waliokamuliwa mwaka jana  |        |               |        |                      |        |                   |        |        |        |         |         |         |
|    | BREED / KOOSAFU  | J      | F             | M      | A                    | M      | J                 | J      | A      | S      | O       | N       | D       |
|    | Local / Asili  | B4.1.1 | B4.1.2        | B4.1.3 | B4.1.4               | B4.1.5 | B4.1.6            | B4.1.7 | B4.1.8 | B4.1.9 | B4.1.10 | B4.1.11 | B4.1.12 |
|    | Crossbred / Chotara  | B4.2.1 | B4.2.2        | B4.2.3 | B4.2.4               | B4.2.5 | B4.2.6            | B4.2.7 | B4.2.8 | B4.2.9 | B4.2.10 | B4.2.11 | B4.2.12 |
|    | Purebred / Kisasa  | B4.3.1 | B4.3.2        | B4.3.3 | B4.3.4               | B4.3.5 | B4.3.6            | B4.3.7 | B4.3.8 | B4.3.9 | B4.3.10 | B4.3.11 | B4.3.12 |
| B5 | Milk sold last year, reasons for no sale (PER DAY IN EACH MONTH) Maziwa yaliyouzwa mwaka jana, sababu za kutouza (KWA SIKU KILA MWEZI) |        |               |        |                      |        |                   |        |        |        |         |         |         |
|    |  | J      | F             | M      | A                    | M      | J                 | J      | A      | S      | O       | N       | D       |
|    | Litres per day / Lita kwa siku   | B5.1.1 | B5.1.2        | B5.1.3 | B5.1.4               | B5.1.5 | B5.1.6            | B5.1.7 | B5.1.8 | B5.1.9 | B5.1.10 | B5.1.11 | B5.1.12 |
|    | Reason for no sale (Specify month):<br>Sababu za kutouza (taja mwezi):   |        |               |        |                      |        |                   |        |        |        |         |         |         |
|    | B5.2.1   |        |               |        |                      |        |                   |        |        |        |         |         |         |

|  | —<br>B5.2.2 _____<br>—<br>B5.2.3 _____<br>—<br>B5.2.4 _____<br>—   |  |  |  |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
|--|--|--|--|--|------------------------------|----------------------------|--|--|--|--|--|--|--|--|--|--|---|--|--|--|--|---|--|--|--|--|----------------------------|--|--|--|--|
| <b>B6</b>  | <b>Milk sales outlet used</b><br><i>Maziwa yanakouzwa</i>  |  |  |  |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
|  | <table border="1"> <thead> <tr> <th></th> <th>Season 1 /<br/><i>Msimu 1</i></th> <th>Season 2 /<br/><i>Msimu 2</i></th> <th>Season 3 /<br/><i>Msimu 3</i></th> <th>Season 4<br/><i>Msimu 4</i></th> </tr> </thead> <tbody> <tr> <td>Sales to consumers by household /<br/><i>Mauzo ya maziwa na kaya kwa walaji</i></td> <td>B6.1.1<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.1.2<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.1.3<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.1.4<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> </tr> <tr> <td>Local vendors /<br/><i>Wachuuzi wa kijijini</i></td> <td>B6.2.1<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.2.2<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.2.3<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.2.4<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> </tr> <tr> <td>Distant vendors /<br/><i>Wachuuzi wa mbali</i></td> <td>B6.3.1<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.3.2<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.3.3<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.3.4<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> </tr> <tr> <td>Milk processors /<br/><i>Wasindikaji wa maziwa</i></td> <td>B6.4.1<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.4.2<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.4.3<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.4.4<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> </tr> <tr> <td>Others /<br/><i>Wengine</i></td> <td>B6.5.1<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.5.2<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.5.3<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> <td>B6.5.4<br/><input type="radio"/>Yes / <i>Ndiyo</i><br/><input type="radio"/>No / <i>Hapana</i></td> </tr> </tbody> </table> |  | Season 1 /<br><i>Msimu 1</i>   | Season 2 /<br><i>Msimu 2</i>   | Season 3 /<br><i>Msimu 3</i> | Season 4<br><i>Msimu 4</i> | Sales to consumers by household /<br><i>Mauzo ya maziwa na kaya kwa walaji</i> | B6.1.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.1.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.1.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.1.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | Local vendors /<br><i>Wachuuzi wa kijijini</i> | B6.2.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.2.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.2.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.2.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | Distant vendors /<br><i>Wachuuzi wa mbali</i> | B6.3.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.3.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.3.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.3.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | Milk processors /<br><i>Wasindikaji wa maziwa</i> | B6.4.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.4.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.4.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.4.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | Others /<br><i>Wengine</i> | B6.5.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.5.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.5.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.5.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |
|  | Season 1 /<br><i>Msimu 1</i>   | Season 2 /<br><i>Msimu 2</i>   | Season 3 /<br><i>Msimu 3</i>   | Season 4<br><i>Msimu 4</i>   |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
| Sales to consumers by household /<br><i>Mauzo ya maziwa na kaya kwa walaji</i> | B6.1.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i>   | B6.1.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.1.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.1.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
| Local vendors /<br><i>Wachuuzi wa kijijini</i>                                 | B6.2.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i>   | B6.2.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.2.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.2.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
| Distant vendors /<br><i>Wachuuzi wa mbali</i>                                  | B6.3.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i>   | B6.3.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.3.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.3.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
| Milk processors /<br><i>Wasindikaji wa maziwa</i>                              | B6.4.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i>   | B6.4.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.4.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.4.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |
| Others /<br><i>Wengine</i>   | B6.5.1<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i>   | B6.5.2<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.5.3<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> | B6.5.4<br><input type="radio"/> Yes / <i>Ndiyo</i><br><input type="radio"/> No / <i>Hapana</i> |                              |                            |  |  |  |  |  |  |  |  |  |  |   |  |  |  |  |   |  |  |  |  |                            |  |  |  |  |

|     |   |
|-----|---|
| B7  | <p>Where do you get replacement female cattle from /<br/><i>Unapata wapi ng'ombe majike wakurudishia katika kundi</i></p> <p>_____</p> <p>_____</p>   |
| B8  | <p>Who decides on which cows/ heifers are kept or culled? / <i>Ni nani hutoa uamuzi kuhusu kubakiza au kutoa ng'ombe jike au mitamba kwenye kundi</i></p> <p><input type="radio"/> Male in household / <i>Mwanaume katika kaya</i></p> <p><input type="radio"/> Female in household / <i>Mwanamke katika kaya</i></p> <p><input type="radio"/> Both / <i>Wote</i></p>   |
| B9  | <p>What do you do with calves born on the farm? / <i>Unafanya nini na ndama waliozaliwa kwenye shamba?</i></p> <p>B9.1 Male calves / <i>Ndama dume</i></p> <p>_____</p> <p>_____</p> <p>B9.2 Female calves / <i>Ndama jike</i></p> <p>_____</p> <p>_____</p>  |
| B10 | <p>Does your milk buyer inform you about milk quality requirements?<br/><i>Je, mnunuzi wa maziwa yako hukuarifu kuhusu mahitaji ya ubora wa maziwa</i></p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p>  |
| B11 | <p>Does your milk buyer accept or reject milk on the basis of quality?<br/><i>Je, mnunuzi wa maziwa yako hukubali au hukataa maziwa kutokana na sababu za ubora?</i></p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> <p>How is Quality defined? / <i>Ubora wa maziwa una maana gani?</i></p> <p>B11.1 _____</p> <p>_____</p> <p>How is Quality measured? / <i>Ubora wa maziwa unapimwaje?</i></p> <p>B11.2 _____</p> <p>_____</p> |
| B12 | <p>In the last 2 years, have you purchased feeds for milking cows?<br/><i>Katika miaka miwili iliopita, umenunua vyakula vya mifugo kwa ng'ombe wanaokamuliwa</i></p> <p><input type="radio"/> Yes, Which ones? / <i>Ndiyo, vyakula gani?</i></p> <p>B12.1.1 _____</p>  |

|     |  |
|-----|--|
|     | <p>_____</p> <p>B12.1.2 _____</p> <p>_____</p> <p>B12.1.3 _____</p> <p>_____</p> <p><input type="radio"/> No, Why not? / <i>Hapana, kwanini hapana?</i></p> <p>B12.2 _____</p> <p>_____</p>  |
| B13 | <p>In the last 2 years, did you feed crop residues to milking cows?<br/><i>Katika miaka miwili iliopita, ulilisha mabaki ya mazao ya kilimo kwa ng'ombe wanaokamuliwa?</i></p> <p><input type="radio"/> Yes, Which ones? / <i>Ndiyo, mabaki ya mazao gani?</i></p> <p>B13.1.1 _____</p> <p>_____</p> <p>B13.1.2 _____</p> <p>_____</p> <p>B13.1.3 _____</p> <p>_____</p> <p><input type="radio"/> No, Why not? / <i>Hapana, kwanini hapana?</i></p> <p>B13.2 _____</p> |
| B14 | <p>In the last 2 years, did you grow fodder crops for milking cows?<br/><i>Katika miaka miwili iliopita, ulipanda mimea lishe kwa ajili ya ng'ombe wanaokamuliwa?</i></p> <p><input type="radio"/> Yes, Which ones? / <i>Ndiyo, mimea gani?</i></p> <p>B14.1.1 _____</p> <p>_____</p> <p>B14.1.2 _____</p> <p>_____</p> <p>B14.1.3 _____</p> <p>_____</p> <p><input type="radio"/> No, Why not? / <i>Hapana, kwanini hapana?</i></p> <p>B14.2 _____</p>                |

|     |  |
|-----|--|
| B15 | <p>In the last 2 years, did you use cattle manure on crops?<br/> <i>Katika miaka miwili iliopita, ulitumia mbolea ya ng'ombe katika mazao ya kilimo?</i></p> <p><input type="radio"/> Yes / <i>Ndiyo</i><br/> <input type="radio"/> No, Why not? / <i>Hapana, Kwanini hapana?</i></p> <p>B15.1 _____</p> |
| B16 | <p>Do you use animals for ploughing or other draught power?<br/> <i>Je, Unatumia wanyama kwakulima au kazi nyingine za wanyamakazi?</i></p> <p><input type="radio"/> Yes / <i>Ndiyo</i><br/> <input type="radio"/> No, Why not? / <i>Hapana, Kwanini hapana?</i></p> <p>B16.1 _____</p>                  |
| B17 | <p>Cows' average age (months) at first calving:</p> <p>(i) Local breeds / <i>Asili</i>: B17.1 _____</p> <p>(ii) Crossbreds / <i>Chotara</i>: B17.2 _____</p> <p>(iii) Purebreds / <i>Kisasa</i> : B17.3 _____</p>  |
| B18 | <p>Average calving interval (months):</p> <p>(i) Local breeds / <i>Asili</i>:: B18.1 _____</p> <p>(ii) Cross-breds / <i>Chotara</i>: B18.1 _____</p> <p>(iii) Purebreds / <i>Kisasa</i>: B18.1 _____</p>   |









STAGE 2: PRODUCTION FACTORS / VIGEZO VYA UZALISHAJI

























































C: LAND AND WATER / ARDHI NA MAJI

|    |  |   |  |  |
|----|--|---|--|--|
| C1 |  | Total land area?<br>(Acres) / Ukubwa wa<br>eneo la ardhi (ekari)                    | Land area used for fodder<br>crops (Acres) / Ardhi<br>inayotumika kwa mimea lishe<br>(ekari) |  |
|    | 1. Owned / Ninayomiliki  | C1.1.1  | C1.1.2   |  |
|    | 2. Rented / Iliyokodishwa  | C1.2.1  | C1.2.2   |  |
|    | 3. Family / Ya familia   | C1.3.1  | C1.3.2   |  |
|    | 4. Communal / Ya jamii   | C1.4.1  | C1.4.2   |  |
|    | 5. Other / Nyingine  | C1.5.1  | C1.5.2   |  |
| C2 | If you could add more land, what would you do with it?<br><i>Kama ungeongeza ardhi zaidi, ungeitumiaje?</i>  |   |  |  |
|    | _____  |   |  |  |
|    | _____  |   |  |  |
|    | _____  |   |  |  |
| C3 | Are you concerned about having access to land for the next 2 years for:<br><i>Je, unahofia kuhusu upatikanaji wa ardhi katika miaka miwili ijayo kwa ajili ya:</i> |   |  |  |
|    |  | Food and cash crop<br>production / Uzalishaji<br>wa chakula na mazao ya<br>biashara | Fodder production<br>/ Uzalishaji wa<br>mimea lishe kwa<br>mifugo                            | Grazing /<br>Kuchungia   |
|    | Owned<br>/Inayomilikiwa  | C3.1.1<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana    | C3.1.2<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana             | C3.1.3<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana |
|    | Rented /<br>Inayokodishwa  | C3.2.1<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana    | C3.2.2<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana             | C3.2.3<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana |
|    | Family / Ya familia  | C3.3.1<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana    | C3.3.2<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana             | C3.3.3<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana |
|    | Communal / Ya<br>jamii   | C3.4.1<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana    | C3.4.2<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana             | C3.4.3<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana |
|    | Other / Nyingine   | C3.5.1<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana    | C3.5.2<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana             | C3.5.3<br><input type="radio"/> Yes / Ndiyo<br><input type="radio"/> No / Hapana |

|    |  |  |
|----|--|--|
| C4 | <p>Is irrigation available for fodder crops?<br/> <i>Je, umwagiliaji wa maji unapatikana kwa ajili ya mimea lishe ya mifugo?</i></p> <p>C4.1<br/> <input type="radio"/> Yes / <i>Niyo</i><br/> <input type="radio"/> No / <i>Hapana</i></p>  |  |
| C5 | <p>What is your source of water?<br/> <i>Nini chanzo chako cha maji?</i></p> <p>C5.1<br/> <input type="radio"/> Well / <i>Kisima cha maji yaliotuama</i><br/> <input type="radio"/> Borehole / <i>Kisima cha maji kutoka china</i><br/> <input type="radio"/> Pond / <i>Bwawa</i><br/> <input type="radio"/> Tap water / <i>Maji ya bomba</i><br/> <input type="radio"/> River/Stream / <i>Mto au mto wa msimu</i><br/> <input type="radio"/> Rainwater / <i>Maji ya mvua</i><br/> <input type="radio"/> Other / <i>Chanzo kingine</i></p> |  |
| C6 | <p>Is water for drinking by cattle easily available within 1 km?<br/> <i>Je, maji ya kunywa kwa ajili ya mifugo yanapatikana katika umbali wa kilomita moja?</i></p>   |  |
|    | <p>Individual / <i>Binasfi</i></p>   | <p>C6.1<br/> <input type="radio"/> Yes / <i>Ndiyo</i> <input type="radio"/> No / <i>Hapana</i></p> |
|    | <p>Shared or communal / <i>Yakutumika pamoja au ya Jamii</i></p>   | <p>C6.1<br/> <input type="radio"/> Yes / <i>Ndiyo</i> <input type="radio"/> No / <i>Hapana</i></p> |

D: LABOUR













|  |  |   |
|--|--|---|
| D1   | Household size, gender make-up and education<br><i>Idadi ya wanakaya, Jinsia na elimu</i>  |   |
|  |  | Number / <i>Idadi</i>   |
|  | Male (Adult) / <i>Mme</i>                                   | D1.1  |
|  | Female (Adult) / <i>Kike</i>                                | D1.2  |
|  | Male (Children – school age or below) / <i>Mtoto kiume</i>  | D1.3  |
| Female (Children – school age or below) / <i>Mtoto kike</i>  | D1.4   |   |
| D2   | Household head / <i>Mkuu wa kaya:</i>  | Sex / <i>Jinsia</i>  /  |
|  |  | Education level / <i>Kiwango cha elimu</i>  |
|  |  | D2.1  |
|  |  | D2.2  |

|  |  |  |  |  |  |  |
|--|--|--|--|--|--|--|
| D<br>3   | Household Division of Labour (tick)<br><i>Mgawanyo wa kazi katika kaya (weka alama)</i>        |  |  |  |  |  |
|  | Activity / <i>Kazi</i>   | Circle ( <i>Chora mviringo</i> )   |  |  |  |  |
|  | 1. Crop cultivation and establishment /<br><i>Kilimo cha mazao</i>                             | D3.1.1<br>    | D3.1.2<br>      | D3.1.3<br>    | D3.1.4<br>    | D3.1.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 2. Crop harvest / <i>Kuvuna mazao</i>  | D3.2.1<br>    | D3.2.2<br>      | D3.2.3<br>    | D3.2.4<br>    | D3.2.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 3. Sale of crops / <i>Kuuza mazao</i>  | D3.3.1<br>    | D3.3.2<br>      | D3.3.3<br>    | D3.3.4<br>    | D3.3.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 4. Sale of cattle / <i>Kuuza ng'ombe</i>   | D3.4.1<br>    | D3.4.2<br>      | D3.4.3<br>    | D3.4.4<br>    | D3.4.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 5. Sale of milk / <i>Kuuza maziwa</i>  | D3.5.1<br>    | D3.5.2<br>      | D3.5.3<br>    | D3.5.4<br>    | D3.5.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 6. Animal Health / <i>Afya ya wanyama</i>  | D3.6.1<br>    | D3.6.2<br>      | D3.6.3<br>    | D3.6.4<br>    | D3.6.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 7. Breeding cattle / <i>Uzalishaji wa ng'ombe</i>  | D3.7.1<br>  | D3.7.2<br>    | D3.7.3<br>  | D3.7.4<br>  | D3.7.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 8. Milking cattle / <i>Kukamua ng'ombe</i>   | D3.8.1<br>  | D3.8.2<br>    | D3.8.3<br>  | D3.8.4<br>  | D3.8.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 9. Building and Maintenance housing for cattle / <i>Ujenzi na kurekebusha zizi la ng'ombe</i>  | D3.9.1<br>  | D3.9.2<br>    | D3.9.3<br>  | D3.9.4<br>  | D3.9.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i>  |
|  | 10. Guarding cattle / <i>Kulinda ng'ombe</i>   | D3.10.1<br> | D3.10.2<br>   | D3.11.3<br> | D3.10.4<br> | D3.10.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i> |
|  | 11. Animal watering / <i>Kunyweshwa maji mifugo</i>  | D3.11.1<br> | D3.11.2<br>   | D3.11.3<br> | D3.11.4<br> | D3.11.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i> |
|  | 12. Feeding of cattle other than grazing / <i>Kulisha ng'ombe chakula zaidi ya kuchunga</i>    | D3.12.1<br> | D3.12.2<br>   | D3.12.3<br> | D3.12.4<br> | D3.12.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i> |
|  | 13. Grazing cattle / <i>Kuchunga ng'ombe</i>   | D3.13.1<br> | D3.13.2<br>   | D3.13.3<br> | D3.13.4<br> | D3.13.5<br>Hired/<br><i>Kodishwa</i><br><i>a</i> |
| 14. Other (Specify) / <i>Mengine (Taja)</i><br>_____ | D3.14.1<br> | D3.14.2<br> | D3.14.3<br> | D3.14.4<br> | D3.14.5<br>Hired /<br><i>Kodishwa</i><br><i>a</i>  |  |

|  |   |            |            |            |            |            |            |            |            |             |             |             |             |
|--|---|------------|------------|------------|------------|------------|------------|------------|------------|-------------|-------------|-------------|-------------|
| D<br>3   | How many people do you hire each month?<br><i>Unawajiri wangapi kila mwezi?</i> |            |            |            |            |            |            |            |            |             |             |             |             |
|  |   | J          | F          | M          | A          | M          | J          | J          | A          | S           | O           | N           | D           |
|  | Persons hired (part-time)<br><i>Wajiriwa wa muda</i>                            | D3.1.<br>1 | D3.1.<br>2 | D3.1.<br>3 | D3.1.<br>4 | D3.1.<br>5 | D3.1.<br>6 | D3.1.<br>7 | D3.1.<br>8 | D3.1.<br>9  | D3.1.<br>10 | D3.1.<br>11 | D3.1.<br>12 |
| Persons hired (full-time)<br><i>Wajiriwa wa kudumu</i> | D3.2.<br>1  | D3.2.<br>2 | D3.2.<br>3 | D3.2.<br>4 | D3.2.<br>5 | D3.2.<br>6 | D3.2.<br>7 | D3.2.<br>8 | D3.2.<br>9 | D3.2.<br>10 | D3.2.<br>11 | D3.2.<br>12 |             |

|   |   |        |        |        |        |        |        |        |        |         |         |         |         |
|---|---|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|
| D<br>4                                  | How do you reward hired labourers (tick all that apply)<br><i>Jinsi gani unawalipa vibarua wako (weka alama kwa jibu sahihi)</i>  |        |        |        |        |        |        |        |        |         |         |         |         |
|   | <input type="radio"/> D4.1.1 Cash payment only, rate per day / <i>Pesa taslimu pekee, kiwango kwa siku</i><br>D4.1.2 _____ TNS<br><input type="radio"/> D4.2.1 Food, housing, and cash, rate per day / <i>Chakula, malzi, na pesa taslimu, kiwango kwa siku</i> D4.2.2 _____ TNS<br><input type="radio"/> D4.3.1 Payment all/partly in the form of animals / <i>Malipo yote/kiasi kama mifugo</i><br><input type="radio"/> D4.4.1 Other / <i>Namna nyingine</i> |        |        |        |        |        |        |        |        |         |         |         |         |
| D<br>5                                  | Labour allocation (days) for / <i>Mgawanyo wa kazi (siku) kwa</i>   |        |        |        |        |        |        |        |        |         |         |         |         |
|   |   | J      | F      | M      | A      | M      | J      | J      | A      | S       | O       | N       | D       |
|   | Off-farm work as self-employed / <i>Kazi nje ya shamba za ajira binafsi</i>   | D5.1.1 | D5.1.2 | D5.1.3 | D5.1.4 | D5.1.5 | D5.1.6 | D5.1.7 | D5.1.8 | D5.1.9  | D5.1.10 | D5.1.11 | D5.1.12 |
|   | Off-farm work paid by someone else / <i>Kazi nje ya shamba za kulipwa na mtu mwingine</i>   | D5.2.1 | D5.2.2 | D5.2.3 | D5.2.4 | D5.2.5 | D5.2.6 | D5.2.7 | D5.2.8 | D5.2.9  | D5.2.10 | D5.2.11 | D5.2.12 |
|   | Crop activities / <i>Kazi za mazao</i>  | D5.3.1 | D5.3.2 | D5.3.3 | D5.3.4 | D5.3.5 | D5.3.6 | D5.3.7 | D5.3.8 | D5.3.9  | D5.3.10 | D5.3.11 | D5.3.12 |
| Cattle keeping / <i>Kazi za ufugaji</i> | D5.4.1  | D5.4.2 | D5.4.3 | D5.4.4 | D5.4.5 | D5.4.6 | D5.4.7 | D5.4.8 | D5.4.9 | D5.4.10 | D5.4.11 | D5.4.12 |         |
| D<br>6                                  | If you had more labour available in your household, how would you use it?<br><i>Je, ungepata ajira ya ziada kwa kaya yako, ungeitumiaje?</i>  |        |        |        |        |        |        |        |        |         |         |         |         |
|   | D6.1: _____<br>_____  |        |        |        |        |        |        |        |        |         |         |         |         |
|   | D6.2: _____<br>_____  |        |        |        |        |        |        |        |        |         |         |         |         |
|   | D6.3: _____<br>_____  |        |        |        |        |        |        |        |        |         |         |         |         |
|   | D6.4: _____<br>_____  |        |        |        |        |        |        |        |        |         |         |         |         |

E: CAPITAL, CASH AND CREDIT

|  |  |   |   |   |   |
|--|--|---|---|---|---|
| E1                                       | Household decisions on use of farm income<br><i>Maamuzi ya kaya kuhusu matumuzi ya mapato kutoka shambani</i>  |   |   |   |   |
|  | Source of Income<br><i>Chanzo cha mapato</i>   | Who receives the funds? / <i>Nani hupokea pesa?</i>   |   | Who makes the decision on how the funds are spent? / <i>Nani hutoa maamuzi kuhusu namna ya kumiapesa?</i> |   |
|  | Sale of crops / <i>Mauzo ya mazao</i>  | E1.1.1<br> | E1.1.2<br>   | E1.1.3<br>             | E1.1.4<br> |
|  | Sale of milk / <i>Mauzo ya maziwa</i>  | E1.2.1<br> | E1.2.2<br>   | E1.2.3<br>             | E1.2.4<br> |
| Sale of cattle / <i>Mauzo ya ng'ombe</i> | E1.3.1<br>  | E1.3.2<br> | E1.3.3<br> | E1.3.4<br>             |   |
| E2                                       | Last year, did you take a loan for buying crop inputs?<br><i>Je, ulichukua mkopo kwa ajili ya kununua pembejeo mwaka jana?</i>   |   |   | E2.1<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i>                |   |
|  | If Yes, it was / <i>Kama ndiyo, ilikuwa</i><br>E2.2 <input type="radio"/> From a bank / <i>Kutoka benki</i><br>E2.3 <input type="radio"/> From a co-operative society / <i>Kutoka chama cha ushurika</i><br>E2.4 <input type="radio"/> From a microfinance organization / <i>Kutoka asasi ya kifedha</i><br>E2.5 <input type="radio"/> From a local money-lender / <i>Kutoka wakopeshaji wa fedha vijijini</i><br>E2.6 <input type="radio"/> From family / <i>Kutoka familia</i><br>E2.7 <input type="radio"/> In the form of livestock / <i>Kwa namna ya mifugo</i><br>E2.8 <input type="radio"/> Other / <i>Kwingine</i> |   |   |   |   |



|     |   |   |   |
|-----|---|---|---|
| E3  | <p>E3.1 Frequency of payments for milk sales / Mara ngapi malipo ya maziwa hufanyika?</p> <p><input type="radio"/> Daily / <i>Kila siku</i></p> <p><input type="radio"/> Weekly / <i>Kila wiki</i></p> <p><input type="radio"/> Monthly / <i>Kila mwezi</i></p> <p><input type="radio"/> Quarterly (every 3 months) / <i>Kila robo mwaka</i></p> <p><input type="radio"/> Every 6 months / <i>Kila nusu mwaka</i></p> <p><input type="radio"/> Annually / <i>Kila mwaka</i></p> <p><input type="radio"/> Other (specify) / <i>Mara nyingine (taja):</i> E.3.2 _____</p> |   |   |
| E4  | <p>E4.1 How often is payment for milk made late? / Ni mara ngapi malipo ya maziwa hufanyika kwa kuchelewa?</p> <p><input type="radio"/> Regularly / <i>Mara kwa mara</i></p> <p><input type="radio"/> Rarely / <i>mara chache</i></p> <p><input type="radio"/> Never / <i>kamwe</i></p>   |   |   |
| E5  | <p>If you had access to a loan, what would you use it for? / <i>Kama ungekuwa unaweza kupata mkopo, je, utautumiaje?</i></p> <p>E5.1: _____</p> <p>_____</p> <p>E5.2: _____</p> <p>_____</p> <p>E5.3: _____</p> <p>_____</p>  |   |   |
| E6  | <p>At what interest rate would you be willing to take a loan to buy a dairy cow? / <i>Kwa kiwango ganii cha riba ungependa kuchukua mkopo kununua ng'ombw wa maziwa?</i></p>  | E6.1  |   |
|     | <p>If you did this, what loan period would you prefer? / <i>Kama ungechukua mkopo, ungependelea uwe wa muda gani?</i></p>   | E6.2  |   |
| E7  | <p>Is availability of credit a constraint on / <i>Je, upatikanaji wa mkopo ni tatizo kwa:</i></p>   |   |   |
|     | <p>Purchase of feeds? / <i>Kununua vyakula vya mifugo?</i></p>  | <p>Spending on animal health? / <i>Matumizi ya tiba ya mifugo?</i></p>                                      | <p>Spending on breeding services? / <i>Matumizi katika uzalishaji wa mifugo?</i></p>                        |
|     | <p>E7.1</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p>   | <p>E7.2</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> | <p>E7.3</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> |
| E8  | <p>E8.1</p> <p>Are check-off services available to you? / <i>Je, kuna huduma ya kukatwa malipo pole pole kulingana na uuzaji wa mifugo au mazao yake?</i></p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p>   |   |   |
| E9  | <p>Would you be interested in working together with a group of producers to help in selling milk? / <i>Je, ungependelea kuungana na vikundi vya uzalishaji katika kuuza maziwa?</i></p> <p>E9.1</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> <p>If No, Why not? / <i>Kama hapana, kwanini hapana?</i></p> <p>E9.2 _____</p>  |   |   |
| E10 | <p>Would you be interested in working together with a group of producers to help in buying inputs and services? / <i>Je, ungependelea kuungana na vikundi vya uzalishaji katika kununa pembejeo na huduma nyingine?</i></p>   |   |   |

|     |   |
|-----|---|
|     | <p>E10.1</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> <p>If No, Why not? / <i>Kama hapana, kwanini hapana?</i></p> <p>E10.2 _____</p>  |
| E11 | <p>Would you be interested in working together with a group of producers to help in gaining access to credit? / <i>Je, ungependelea kuungana na vikundi vya uzalishaji katika kupata mikopo?</i></p> <p>E11.1</p> <p><input type="radio"/> Yes / <i>Ndiyo</i></p> <p><input type="radio"/> No / <i>Hapana</i></p> <p>If No, Why not? / <i>Kama hapana, kwanini hapana?</i></p> <p>E11.2 _____</p> |

F: INFORMATION, KNOWLEDGE, INNOVATION AND TECHNOLOGY

F: HABARI, MAARIFA, UGUNDUZI NA TEKNOLOJIA

|    |   |  |
|----|---|--|
| F1 | In the last 2 years, did you receive information about crop production? / <i>Je, katika miaka miwili iliyopita, ulipata ushauri kuhusu uzalishaji wa mazao?</i>   | F1.1<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it relevant? / <i>Je, ulikuwa muhimu?</i>  | F1.2<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it provided in time? / <i>Je, ulitolewa kwa wakati?</i>  | F1.3<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it of value to you? / <i>Je, ulifaa?</i>   | F1.4<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Who provided it? / <i>Je, ulitolewa na nani?</i><br><br>F1.5 _____  |  |
| F2 | In the last 2 years, did you receive information about cattle production? / <i>Je, katika miaka miwili iliyopita, ulipata ushauri kuhusu uzalishaji wa ng'ombe?</i>   | F2.1<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it relevant? / <i>Je, ulikuwa muhimu?</i>  | F2.2<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it provided in time? / <i>Je, ulitolewa kwa wakati?</i>  | F2.3<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it of value to you? / <i>Je, ulifaa?</i>   | F2.4<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Who provides it? / <i>Je, ulitolewa na nani?</i><br><br>F2.5 _____  |  |
| F3 | In the last 2 years, did you receive information about hygiene and the safety of milk, and milk handling? / <i>Je, katika miaka miwili iliyopita, ulipata ushauri kuhusu usafi, usalama, na namna ya kushugulikia maziwa?</i> | F3.1<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it relevant? / <i>Je, ulikuwa muhimu?</i>  | F3.2<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it provided in time? / <i>Je, ulitolewa kwa wakati?</i>  | F3.3<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Is it of value to you? / <i>Je, ulifaa?</i>   | F3.4<br><input type="radio"/> Yes/Ndiyo<br><input type="radio"/> No/Hapana |
|    | Who provided it? / <i>Je, ulitolewa na nani?</i><br><br>F3.5 _____  |  |

|  |  |   |  |
|--|--|---|--|
| F4   | In the last 2 years, did you receive information about prices, selling and earning income from milk? / <i>Je, katika miaka miwili iliyopita, ulipata ushauri kuhusu bei, mauzo na mapato kutokana na maziwa?</i> |   | F4.1<br><input type="radio"/> Yes/Ndiy<br>o<br><input type="radio"/> No/Hapan<br>a |
|  | Is it relevant? / <i>Je, ulikuwa muhimu?</i>   |   | F4.2<br><input type="radio"/> Yes/Ndiy<br>o<br><input type="radio"/> No/Hapan<br>a |
|  | Is it provided in time? / <i>Je, ulitolewa kwa wakati?</i>   |   | F4.3<br><input type="radio"/> Yes/Ndiy<br>o<br><input type="radio"/> No/Hapan<br>a |
|  | Is it of value to you? / <i>Je, ulifaa?</i>  |   | F4.4<br><input type="radio"/> Yes/Ndiy<br>o<br><input type="radio"/> No/Hapan<br>a |
| Who provided it? / <i>Je, ulitolewa na nani?</i> |  |   |  |
| F4.5 _____                                       |  |   |  |
| F5   | Name any changes you have made in feeding dairy cattle in the last 2 years / <i>Eleza mabadiliko yoyote uliyofanya kutokana na kulisha ng'ombe wa maziwa katika miaka miwili iliyopita</i>                       |   |  |
|  | <b>CHANGE/BADILIKO</b>   | <b>REASON FOR CHANGE / SABABU YA BADILIKO</b>                               | <b>WERE YOU SUCCESSFUL? / JE, ULIFANIKIWA?</b>                                     |
|  | 1 F5.1.1   | F5.1.2  | F5.1.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana        |
|  | 2 F5.2.1   | F5.2.2  | F5.2.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana        |
| 3 F5.3.1   | F5.3.3   | F5.3.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana |  |
| F6   | Name any changes you have made in cattle breeding in the last 2 years / <i>Eleza mabadiliko yoyote uliyofanya kutokana na kuzalisha ng'ombe katika miaka miwili iliyopita</i>                                    |   |  |
|  | <b>CHANGE/BADILIKO</b>   | <b>REASON FOR CHANGE / SABABU YA BADILIKO</b>                               | <b>WERE YOU SUCCESSFUL? / JE, ULIFANIKIWA?</b>                                     |
|  | 1 F6.1.1   | F6.1.2  | F6.1.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana        |
|  | 2 F6.2.1   | F6.2.2  | F6.2.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana        |
| 3 F6.3.1   | F6.3.3   | F6.3.3<br><input type="radio"/> Yes/Ndiy<br><input type="radio"/> No/Hapana |  |

|          |   |  |  |
|----------|---|--|--|
| F7       | Name any changes you have made regarding the health of your cattle in the last 2 years / <i>Eleza mabadiliko yoyote uliyofanya kutokana na afya ya ng'ombe katika miaka miwili iliyopita</i>  |  |  |
|          | <b>CHANGE/BADILIKO</b>  | <b>REASON FOR CHANGE / SABABU YA BADILIKO</b>  | <b>WERE YOU SUCCESSFUL? / JE, ULIFANIKIWA?</b>   |
|          | 1 F7.1.1  | F7.1.2   | F7.1.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
|          | 2 F7.2.1  | F7.2.2   | F7.2.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
| 3 F7.3.1 | F7.3.3  | F7.3.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |  |
| F8       | Name any changes you have made in sales of milk in the last 2 years / <i>Eleza mabadiliko yoyote uliyofanya kutokana na uuzaji wa maziwa katika miaka miwili iliyopita</i>  |  |  |
|          | <b>CHANGE/BADILIKO</b>  | <b>REASON FOR CHANGE / SABABU YA BADILIKO</b>  | <b>WERE YOU SUCCESSFUL? / JE, ULIFANIKIWA?</b>   |
|          | 1 F8.1.1  | F8.1.2   | F8.1.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
|          | 2 F8.2.1  | F8.2.2   | F8.2.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
| 3 F8.3.1 | F8.3.3  | F8.3.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |  |
| F9       | Name any changes you have made regarding hygiene and the handling of milk in the last 2 years. Reason for change / <i>Eleza mabadiliko yoyote uliyofanya kutokana na usafi na kushugulikia maziwa katika miaka miwili iliyopita</i> |  |  |
|          | <b>CHANGE/BADILIKO</b>  | <b>REASON FOR CHANGE / SABABU YA BADILIKO</b>  | <b>WERE YOU SUCCESSFUL? / JE, ULIFANIKIWA?</b>   |
|          | 1 F9.1.1  | F9.1.2   | F9.1.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
|          | 2 F9.2.1  | F9.2.2   | F9.2.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |
| 3 F9.3.1 | F9.3.3  | F9.3.3<br><input type="radio"/> Yes/ <i>Ndiyo</i><br><input type="radio"/> No/ <i>Hapana</i> |  |

### **SPECIAL DOMAIN SESSIONS: GROUP DISCUSSIONS**

The special group discussion session will be organized around four groups based on domains of livestock production facilitated by experts in each area. The facilitation will be guided by special tools for each FGD (See separate domain tools). The domains include:

- FEEDING
- BREEDING
- ANIMAL HEALTH
- MARKET ACCESS AND ACCESS TO INPUTS

Formation of groups

Proportionate/adequate representation based on three criteria

- Cattle breeds
- Markets
- Source of fodder

Each discussion session will conclude with 4-5 main constraints under each domain to be used in the ranking exercise at individual level.

## **CONSTRAINTS ANALYSIS AND RANKING: INDIVIDUAL DATA COLLECTION**

In order to generate a ranking of livestock production constraints, the following ranking matrix will be used. The constraints generated in group session are cauterized each domain

- Feeding
- Breeding
- Animal Health
- Market access



RATING OF CONSTRAINTS ASSOCIATED WITH FIRST OBJECTIVE - \*\*\*

KUORODHESA MATATIZO YANAYOHUSIANA NA LENGU LA KWANZA - \*\*\*

First objective is /Lengu la kwanza ni \_\_\_\_\_

| Constraint/Tatizo  | Land and water / Ardhi na maji | Labour / Nguvu kazi | Capital / Miaji | Knowledge/ Information Maarifa / Ushauri | Other     |
|--|--------------------------------|---------------------|-----------------|--|-----------|
| <b>Feeding / Ulishaji</b>  |                                |                     |                 |  |           |
| <i>Constraint 1 / Tatizo 1</i>                                   | FC1.LD.F                       | FC1.LB.F            | FC1.CP.F        | FC1.KI.F                                 | FC1.OTH.F |
| <i>Constraint 2 / Tatizo 2</i>                                   | FC2.LD.F                       | FC2.LB.F            | FC2.CP.F        | FC2.KI.F                                 | FC2.OTH.F |
| <i>Constraint 3/ Tatizo 3</i>                                    | FC3.LD.F                       | FC3.LB.F            | FC3.CP.F        | FC3.KI.F                                 | FC3.OTH.F |
| <i>Constraint 4/ Tatizo 4</i>                                    | FC4.LD.F                       | FC4.LB.F            | FC4.CP.F        | FC4.KI.F                                 | FC4.OTH.F |
| <b>Breeding / Uzalishaji</b>                                     |                                |                     |                 |  |           |
| <i>Constraint 1 / Tatizo 1</i>                                   | BR1.LD.F                       | BR1.LB.F            | BR1.CP.F        | BR1.KI.F                                 | BR1.OTH.F |
| <i>Constraint 2 / Tatizo 2</i>                                   | BR2.LD.F                       | BR2.LB.F            | BR2.CP.F        | BR2.KI.F                                 | BR2.OTH.F |
| <i>Constraint 3/ Tatizo 3</i>                                    | BR3.LD.F                       | BR3.LB.F            | BR3.CP.F        | BR3.KI.F                                 | BR3.OTH.F |
| <i>Constraint 4/ Tatizo 4</i>                                    | BR4.LD.F                       | BR4.LB.F            | BR4.CP.F        | BR4.KI.F                                 | BR4.OTH.F |
| <b>Animal Health / Afya ya wanyama</b>                           |                                |                     |                 |  |           |
| <i>Constraint 1 / Tatizo 1</i>                                   | AH1.LD.F                       | AH1.LB.F            | AH1.CP.F        | AH1.KI.F                                 | AH1.OTH.F |
| <i>Constraint 2 / Tatizo 2</i>                                   | AH2.LD.F                       | AH2.LB.F            | AH2.CP.F        | AH2.KI.F                                 | AH2.OTH.F |
| <i>Constraint 3/ Tatizo 3</i>                                    | AH3.LD.F                       | AH3.LB.F            | AH3.CP.F        | AH3.KI.F                                 | AH3.OTH.F |
| <i>Constraint 4/ Tatizo 4</i>                                    | AH4.LD.F                       | AH4.LB.F            | AH4.CP.F        | AH4.KI.F                                 | AH4.OTH.F |
| <b>Markets, Inputs and Services / Masoko, pembejeo na huduma</b> |                                |                     |                 |  |           |
| <i>Constraint 1 / Tatizo 1</i>                                   | MI1.LD.F                       | MI1.LB.F            | MI1.CP.F        | MI1.KI.F                                 | MI1.OTH.F |
| <i>Constraint 2 / Tatizo 2</i>                                   | MI2.LD.F                       | MI2.LB.F            | MI2.CP.F        | MI2.KI.F                                 | MI2.OTH.F |
| <i>Constraint 3/ Tatizo 3</i>                                    | MI3.LD.F                       | MI3.LB.F            | MI3.CP.F        | MI3.KI.F                                 | MI3.OTH.F |
| <i>Constraint 4/ Tatizo 4</i>                                    | MI4.LD.F                       | MI4.LB.F            | MI4.CP.F        | MI4.KI.F                                 | MI4.OTH.F |

NB: Use the rating scale 0-3 (BLANK no effect, ● less effect; ●● moderate effect; ●●● high effect)

Tumia alama 0 -3 (wazi – hakuna tatizo, ● tatizo kidogo; ●● tatizo la wastani; ●●● tatizo kubwa)

RATING OF CONSTRAINTS ASSOCIATED WITH SECOND OBJECTIVE - \*\*

KUORODHESA MATATIZO YANAYOHUSIANA NA LENGO LA PILI - \*\*

Second objective is /Lengo la pili ni \_\_\_\_\_

| Constraint/Tatizo  | Land and water / Ardhi na maji | Labour / Nguvu kazi | Capital / Miaji | Knowledge/ Information Maarifa / Ushauri | Other     |
|--|--------------------------------|---------------------|-----------------|--|-----------|
| <b>Feeding / Ulishaji</b>  |                                |                     |                 |  |           |
| <i>Constraint 1</i>  | FC1.LD.S                       | FC1.LB.S            | FC1.CP.S        | FC1.KI.S                                 | FC1.OTH.S |
| <i>Constraint 2</i>  | FC2.LD.S                       | FC2.LB.S            | FC2.CP.S        | FC2.KI.S                                 | FC2.OTH.S |
| <i>Constraint 3</i>  | FC3.LD.S                       | FC3.LB.S            | FC3.CP.S        | FC3.KI.S                                 | FC3.OTH.S |
| <i>Constraint 4</i>  | FC4.LD.S                       | FC4.LB.S            | FC4.CP.S        | FC4.KI.S                                 | FC4.OTH.S |
| <b>Breeding / Uzalishaji</b>                                     |                                |                     |                 |  |           |
| <i>Constraint 1</i>  | BR1.LD.S                       | BR1.LB.S            | BR1.CP.S        | BR1.KI.S                                 | BR1.OTH.S |
| <i>Constraint 2</i>  | BR2.LD.S                       | BR2.LB.S            | BR2.CP.S        | BR2.KI.S                                 | BR2.OTH.S |
| <i>Constraint 3</i>  | BR3.LD.S                       | BR3.LB.S            | BR3.CP.S        | BR3.KI.S                                 | BR3.OTH.S |
| <i>Constraint 4</i>  | BR4.LD.S                       | BR4.LB.S            | BR4.CP.S        | BR4.KI.S                                 | BR4.OTH.S |
| <b>Animal Health / Afya ya wanyama</b>                           |                                |                     |                 |  |           |
| <i>Constraint 1</i>  | AH1.LD.S                       | AH1.LB.S            | AH1.CP.S        | AH1.KI.S                                 | AH1.OTH.S |
| <i>Constraint 2</i>  | AH2.LD.S                       | AH2.LB.S            | AH2.CP.S        | AH2.KI.S                                 | AH2.OTH.S |
| <i>Constraint 3</i>  | AH3.LD.S                       | AH3.LB.S            | AH3.CP.S        | AH3.KI.S                                 | AH3.OTH.S |
| <i>Constraint 4</i>  | AH4.LD.S                       | AH4.LB.S            | AH4.CP.S        | AH4.KI.S                                 | AH4.OTH.S |
| <b>Markets, Inputs and Services / Masoko, pembejeo na huduma</b> |                                |                     |                 |  |           |
| <i>Constraint 1</i>  | MI1.LD.S                       | MI1.LB.S            | MI1.CP.S        | MI1.KI.S                                 | MI1.OTH.S |
| <i>Constraint 2</i>  | MI2.LD.S                       | MI2.LB.S            | MI2.CP.S        | MI2.KI.S                                 | MI2.OTH.S |
| <i>Constraint 3</i>  | MI3.LD.S                       | MI3.LB.S            | MI3.CP.S        | MI3.KI.S                                 | MI3.OTH.S |
| <i>Constraint 4</i>  | MI4.LD.S                       | MI4.LB.S            | MI4.CP.S        | MI4.KI.S                                 | MI4.OTH.S |

NB: Use the rating scale 0-3 (BLANK no effect, ● less effect; ●● moderate effect; ●●● high effect)

Tumia alama 0 -3 (wazi – hakuna tatizo, ● tatizo kidogo; ●● tatizo la wastani; ●●● tatizo kubwa)

