



Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) Project, Mozambique ENDLINE EVALUATION

JUNE 2021

Program: Food for Progress

Agreement Number: FCC-656-2016/007-00

Funding Year: Fiscal Year 2021

Project Duration: 2/14/2017 - 7/23/2021

Implemented by: Land O'Lakes Venture37

Evaluation Authored by:

Uttara Balakrishnan

Vanessa Hoffman

Adam Taube

Mahrusah Zahin

ACKNOWLEDGEMENTS

The IMPAQ team would like to thank Land O’Lakes Venture37 (Venture37) and the US Department of Agriculture (USDA) for their financial support. We also would like to thank the Venture37 staff in the USA and Mozambique for supporting and facilitating the rollout of the Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) project’s endline evaluation. Special thanks go to Jose Caravela for his regional insights and his extensive technical support. The authors also thank the Incomati team for their professionalism and flexibility with data collection, including Helder Martins, Belmira Seuane, and all the enumerators for their excellent work in the field.

TABLE OF CONTENTS

ACKNOWLEDGEMENTS	i
TABLE OF CONTENTS	ii
ACRONYMS AND ABBREVIATIONS	vii
LIST OF EXHIBITS	viii
EXECUTIVE SUMMARY	I
Methods	I
Findings	II
<i>Herd Size and Production Practices</i>	II
<i>Animal Health Services</i>	II
<i>Milk Production and Sales by Farmers</i>	II
<i>Milk Procurement by Cooperatives and Processors</i>	III
<i>Processing of Milk</i>	III
<i>Sales of Milk and Milk Products by Cooperatives and Processors</i>	III
<i>Milk Quality</i>	III
<i>Effects of External Shocks</i>	IV
Recommendations	V
<i>Best Practices with Respect to Current Activities</i>	V
<i>Recommendations for Sustainability and Future Programming</i>	V
SECTION 1. INTRODUCTION	1
1.1. Overview of Mozambique's Dairy Sector	1
1.2. Previous Venture37 Projects in Mozambique	2
1.3. Venture37 MERCADO Intervention and Results Framework	3
1.3.1 MERCADO's Policy Interventions	6
1.3.2 MERCADO's Work on Demand Creation	7
1.3.3 MERCADO's Role in Commercialization of the Dairy Sector	8
1.4 External Factors and MERCADO	9
SECTION 2. ENDLINE EVALUATION METHODOLOGY	11
2.1. Endline Evaluation Methodology	11
2.1.1 Endline Evaluation Objectives and Questions	11
2.1.2 Data Sources	13
2.1.3 Sampling and Data Collection	13
2.1.4 Data Collection Instruments	15
2.1.5 Data Analysis	17
2.2. Field Implementation	19
2.2.1 Enumerator Training	19
2.2.2 Logistics	19
2.2.3 Data Collection Challenges	20
SECTION 3. QUANTITATIVE RESULTS (TRIANGULATION WITH QUALITATIVE FINDINGS)	22
3.1 Quantitative Results from Farmer Sample	22
3.1.1 Distribution of Farms	22
3.1.2 Matching Respondents Across Three Data Collection Rounds	24
3.1.3 Main Income Sources	25
3.1.4 Herd Composition and Record Keeping	26

3.1.5	Production Practices.....	28
3.1.6	Animal Health Services.....	35
3.1.7	Engagement with MERCADO	40
3.1.8	Milk Production, Disposition, and Revenue	44
3.1.9	Effects of External Shocks	51
3.1.10	Women’s Participation in MERCADO Dairy Projects	54
3.2	Quantitative Results from Semi-Structured Surveys	57
3.2.1	Overview of Sample	57
3.2.2	Engagement with MERCADO	58
3.2.3	Procurement and Sales	59
3.2.4	Milk Quality Testing	66
3.2.5	Equipment	68
SECTION 4. QUALITATIVE FINDINGS.....		69
4.1	Relevance	69
4.1.1	Stakeholder Satisfaction with Project	69
4.1.2	Project Alignment with Government Priorities.....	69
4.1.3	Barriers to Growth in the Dairy Industry.....	70
4.2	Effectiveness.....	71
4.2.1	Project Implementation of Training	71
4.2.2	Project Implementation of Financial Assistance	71
4.2.3	Project Implementation of Capacity Building	72
4.2.4	Strengths: Project Components Working Well.....	72
4.2.5	Weaknesses: Challenges with Project Components	73
4.2.6	Lessons Learned and Recommendations for Improvement	74
4.3	Efficiency	74
4.3.1	Project Management and Monitoring.....	75
4.3.2	Achievement of Project Timeline	75
4.3.3	Collaboration of Project with Stakeholders	76
4.4	Perceived Impacts	77
4.4.1	Challenges and Changes in Practices	77
4.4.2	Dairy Value Chain Linkages	79
4.4.3	Milk Quality	81
4.4.4	Milk Value and Quantity	81
4.4.5	Access to Finance.....	82
4.4.6	Role of Marketing and Advertising.....	82
4.4.7	Dairy Policy and Regulatory Framework	82
4.4.8	External and Internal Factors.....	83
4.5	Sustainability	84
4.5.1	Expected Sustainability of Project Activities and Benefits	84
4.5.2	Future Plans.....	86
4.6	Gender Equality and Equity	86
SECTION 5. CONCLUSIONS AND RECOMMENDATIONS		88
5.1	Key Analytical Findings	88
	<i>Herd Size and Production Practices</i>	88
	<i>Animal Health Services</i>	89
	<i>Milk Production and Sales by Farmers</i>	89
	<i>Milk Procurement by Cooperatives and Processors.....</i>	89

<i>Processing of Milk</i>	89
<i>Sales of Milk and Milk Products by Cooperatives and Processors</i>	90
<i>Milk Quality</i>	90
<i>Effects of External Shocks</i>	90
5.2 Key Findings with Respect to Evaluation Criteria	90
5.2.1 Relevance	90
5.2.2 Effectiveness	91
5.2.3 Efficiency	92
5.2.4 Perceived Impacts	92
5.2.5 Sustainability	93
5.2.6 Gender Equality and Equity	94
5.3 Study Limitations	94
<i>Small Sample Sizes</i>	94
<i>Reliance on Self-Reported Data</i>	95
<i>Inability to Attribute Causation</i>	95
Concurrent Collection of Qualitative and Quantitative Data	95
Farmer Recruitment for Qualitative Data	95
Changes in Farmer Composition from Baseline to Endline	95
5.4 Recommendations	95
<i>Best Practices with Respect to Current Activities</i>	95
<i>Recommendations for Sustainability and Future Programming</i>	96
ANNEX A. PERFORMANCE MANAGEMENT PLAN	1
ANNEX B. MERCADO FFPR RESULTS FRAMEWORK	1
ANNEX C. EVALUATION QUESTIONS, DATA COLLECTION METHODS, AND DATA SOURCES	1
ANNEX D. INCEPTION REPORT	1
Venture37's MERCADO Intervention and Results Framework	2
External Factors	3
Evaluation Objectives	5
Research Questions	6
Data Sources	6
Data Collection Methods	8
Data Analysis	10
Field Procedures	12
Quality Control Measures	13
Communication Protocol	13
Timeline (activities, responsible party, outputs, and timing)	15
ANNEX E. TERMS OF REFERENCE	1
ANNEX F. SURVEY INSTRUMENTS	1
MERCADO FINAL EVALUATION FARMER SURVEY	1
SECTION 0. BASIC INFORMATION	1
SECTION 1: HOUSEHOLD CHARACTERISTICS	8
SECTION 2: CURRENT DAIRY PRODUCTION	20
SECTION 3: PRODUCTION, DISPOSITION AND REVENUE	36
SECTION 4A: EFFECTS OF COVID-19	50
SECTION 4B: EFFECTS OF CYCLONE IDAI	54
SECTION 4C: EFFECTS OF MILITARY HOSTILITIES	60

SECTION 5: PRODUCTION PRACTICES.....	63
SECTION 6: ANIMAL HEALTH SERVICES	82
SECTION 7: TRAINING AND KNOWLEDGE.....	105
Controlling the weeds Controlo de ervas daninhas.....	109
1 Yes Sim.....	109
1 Yes Sim.....	109
1 Yes Sim.....	109
1 Yes Sim.....	109
1 Yes Sim.....	110
1 Yes Sim.....	110
1 Yes Sim.....	110
1 Yes Sim.....	110
1 Yes Sim.....	110
1 Yes Sim.....	110
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	111
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	112
1 Yes Sim.....	113
1 Yes Sim.....	113
1 Yes Sim.....	113
1 Yes Sim.....	113
1 Yes	113
1 Yes Sim.....	113
1 Yes Sim.....	113

1 Yes Sim.....	113
SECTION 8: LABOR, ROLES, AND RESPONSIBILITIES.....	116
SECTION 9: FINANCE AND INVESTMENTS.....	126
SECTION 10: EXPERIENCE WITH MERCADO.....	128
SECTION 11: CONCLUSION.....	132
MERCADO FINAL EVALUATION SEMI-STRUCTURED INTERVIEW PROTOCOLS	0
Aggregation & Value Addition Facilities (Cooperatives) Semi-Structured Survey.....	0
SECTION 0: BACKGROUND ON COOPERATIVE AND ENGAGEMENT WITH MERCADO	2
SECTION 1: RECORD KEEPING	4
SECTION 2: PROCUREMENT AND SALES	12
SECTION 3: MILK QUALITY TESTING	38
SECTION 4: EQUIPMENT, FINANCE, AND INVESTMENTS	43
SECTION 5: STAFFING	50
SECTION 6: ADDITIONAL OPEN-ENDED QUESTIONS QUESTÕES ABERTAS ADICIONAIS	54
Processor Semi-Structured Survey	55
SECTION 0: BACKGROUND ON BUSINESS AND ENGAGEMENT WITH MERCADO	57
SECTION 1: RECORD KEEPING	59
SECTION 2: PROCUREMENT, PROCESSING, AND SALES	68
SECTION 3: MILK QUALITY TESTING	104
SECTION 4: EQUIPMENT, FINANCE, AND INVESTMENTS	109
SECTION 5: STAFFING.....	117
SECTION 6: ADDITIONAL OPEN-ENDED QUESTIONS QUESTÕES ABERTAS ADICIONAIS	121
MERCADO FINAL EVALUATION: BREEDER SEMI-STRUCTURED SURVEY	122
SECTION 1: PROCUREMENT, SALES, AND FUTURE PLANS AQUISIÇÕES, VENDAS E PLANOS FUTUROS	122
SECTION 2: ADDITIONAL OPEN-ENDED QUESTIONS QUESTÕES ABERTAS ADICIONAIS	135
Dairy Farmers Focus Group Discussion Guide – Guião de discussão de Grupos Focais de Produtores de Leite	136
Community Livestock Workers Interview Guide – Guião de Entrevista aos Promotores.....	142
Student Intern Interview Guide - Guião de Entrevistas a Estudantes Estagiários	148
Lecturer Interview Guide – Guião de Entrevista ao Professor	153
Retailer Interview Guide – Guião de Entrevista ao Retalhista	157
Project Staff/Partners Interview Guide – Guião de Entrevista ao Pessoal/Parceiros do Projecto...161	161
Producer Interview Guide – Guião de Entrevista ao Produtor	167
Government Stakeholders Interview Guide - Guião de Entrevista aos Intervenientes do Governo	172
Veterinary Shops Interview Guide - Guião de Entrevista a Lojas Veterinárias.....	176
Feed Suppliers Interview Guide - Guião de Entrevista aos Fornecedores de Rações.....	181

ACRONYMS AND ABBREVIATIONS

ADEL	Associação para o Desenvolvimento Económico Local – Sofala
ADEM	Associação para o Desenvolvimento Económico de Manica
AI	Artificial Insemination
CLW	Community Livestock Workers/Paravets
CMT	California Mastitis Test
COVID-19	Coronavirus disease 2019
DHF	Dairy Herd Fund
DIF	Dairy Innovation Fund
DINAV	National Veterinary Directorate
DNDP	Directorate for Livestock Development
FFPr	Food for Progress
FGD	Focus Group Discussions
GDP	Gross Domestic Product
KII	Key Informant Interviews
Venture37	Land O’Lakes Venture37
M&E	Monitoring and Evaluation
MADER	Ministry of Agriculture and Rural Development
MDDP	Mozambique Dairy Development Program
MEL	Monitoring, Evaluation & Learning
MERCADO	Mozambique Expansion of Rural Cattle and Dairy Opportunities
MSDDP	Manica Smallholder Dairy Development Program
NGO	Nongovernmental Organization
OECD-DAC	Development Assistance Committee of the Economic Cooperation and Development
SO	Strategic Objectives
SOW	Scope of Work
TOR	Terms of Reference
UCM	Catholic University of Mozambique
USDA	US Department of Agriculture
VSLA	Village savings and loans associations

LIST OF EXHIBITS

Exhibit 1. Target Provinces of MERCADO Project.....	3
Exhibit 2. Project Activities	4
Exhibit 3. Evaluation Criteria and Questions.....	12
Exhibit 4. Quantitative Data Sources.....	14
Exhibit 5. Farmer Surveys Completed, by Province and District	14
Exhibit 6. Qualitative Data Sources	15
Exhibit 7. Distribution of Farms by Scale	23
Exhibit 8. Distribution of Farms by Alternate Definition of Farm Scale	23
Exhibit 9. Distribution of Farms by Type at Endline Evaluation	24
Exhibit 10. Farms That No Longer Had Dairy Cows.....	24
Exhibit 11. Matching Farmers between Three Data Collection Rounds.....	25
Exhibit 12. Income Sources by Farm Scale	26
Exhibit 13. Herd Composition by Farm Scale	27
Exhibit 14. Farmer Record Keeping	27
Exhibit 15. Type of Grazing System for Matched Sample	28
Exhibit 16. Use of Fodder for Matched Sample.....	29
Exhibit 17. Sources of Fodder for Matched Sample.....	29
Exhibit 18. Ease of Access to Fodder for Matched Sample	30
Exhibit 19. Type of Water Access for Farmers.....	31
Exhibit 20. Use, Sources, and Ease of Access for Milking Machines	31
Exhibit 21. Use, Sources, and Ease of Access for Stainless Steel Cans	32
Exhibit 22. Use and Sources for Milk Chilling Equipment, Milk Filters, and Milk Feeders	34
Exhibit 23. Use of and Ease of Access to Breeding Methods.....	35
Exhibit 24. Use of and Service Providers for Animal Health Testing.....	36
Exhibit 25. Animal Health Issues Tested	37
Exhibit 26. Frequency of Vaccinations	38
Exhibit 27. Type of Mastitis Testing.....	39
Exhibit 28. Sources of Mastitis Testing Kit	39
Exhibit 29. Ease of Access to Cattle Health Services	40
Exhibit 30. Engagement with MERCADO Project.....	41
Exhibit 31. Changes in Dairy Production and Access Based on Experience with MERCADO	41
Exhibit 32. Changes in Housing for Cows Based on Experience with MERCADO.....	42
Exhibit 33. Changes in Breeding and Animal Health Services due to MERCADO.....	43
Exhibit 34. Knowledge of Improved Dairy Practices	44
Exhibit 35. Daily Milk Production per Cow, Rainy Season (in Liters) for Matched Sample	45
Exhibit 36. Daily Milk Production per Cow, Dry Season (in Liters) for Matched Sample	45
Exhibit 37. Milk Production per Cow, Yesterday (in Liters).....	46
Exhibit 38. Volume of Milk Sales, Rainy Season (in Liters per Day)	47
Exhibit 39. Volume of Milk Sales, Dry Season (in Liters per Day)	47
Exhibit 40. Volume of Milk Sales, Yesterday (in Liters per Day)	48
Exhibit 41. Daily Value of Milk Sales, Rainy Season (in USD)	49
Exhibit 42. Daily Value of Milk Sales, Dry Season (in USD)	49

Exhibit 43. Endline Daily Value of Milk Sales, Yesterday (in USD).....	50
Exhibit 44. Milk Rejection	50
Exhibit 45. Lingering Impacts on Dairy Business due to Cyclone Idai	52
Exhibit 46. Impacts of COVID-19	53
Exhibit 47. Impact of Local Security Concerns.....	54
Exhibit 48. Women’s Participation in the MERCADO Project.....	54
Exhibit 49. Distribution of Farms at Endline by Scale and Gender	55
Exhibit 50. Herd Composition by Gender for Matched Farmers	55
Exhibit 51. Gender Breakdown of Household Decision-Making for Matched Sample.....	56
Exhibit 52. Daily Yield of Milk Output per Cow for Men and Women (in Liters).....	56
Exhibit 53. Endline Sample of Cooperatives, Processors, and Breeder.....	57
Exhibit 54. Topics of Trainings for Cooperatives and Processors	58
Exhibit 55. Record Keeping by Cooperatives and Processors.....	59
Exhibit 56. Volume and Value of Milk Procurement by Cooperatives and Processors	60
Exhibit 57. Changes in Milk Procurement due to MERCADO	62
Exhibit 58. Impacts of COVID-19 on Milk Procurement	63
Exhibit 59. Volume and Value of Sales for Cooperatives and Processors, by Season	63
Exhibit 60. Changes in Cooperative and Processor Milk Sales due to MERCADO	65
Exhibit 61. Impacts of COVID-19 on Milk Sales	66
Exhibit 62. Milk and Milk Product Quality Checks by Cooperatives and Processors	67
Exhibit 63. Milk Rejection Rates and Volume Rejected for Cooperatives and Processors.....	67
Exhibit 64. Types of Major Equipment Owned by Cooperatives and Processors	68
Exhibit 65. Dairy Value Chain Linkages	79
Exhibit A-1. Performance Management Plan	A-1
Exhibit D-1. MERCADO Project Activities.....	D-3
Exhibit D-2. Quantitative Data Sources	D-7
Exhibit D-3. Qualitative Data Sources.....	D-8
Exhibit D-4. Methods for Data Collection Quality Control	D-13
Exhibit D-5. Communication Roles and Reporting Processes.....	D-14
Exhibit D-6. Final Evaluation and Timeline	D-15

EXECUTIVE SUMMARY

Land O'Lakes Venture37 (Venture37) contracted with IMPAQ International, LLC (IMPAQ) to implement the evaluation of the five-year Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) project, funded by the United States Department of Agriculture (USDA). The evaluation consists of three components: baseline and gender analysis (2016), midterm (2019), and endline (2021) evaluations. This endline evaluation report measures progress made in achieving the intended outcomes from baseline by documenting the endline state of key dairy value-chain actors that are MERCADO project participants; establishing endline values for key performance indicators; examining sustainability; and providing recommendations to help future programming in the dairy sector in Mozambique.

The MERCADO project is Venture37's third Mozambican dairy sector development initiative. The five-year project, which began in October 2016, seeks to address critical weaknesses that currently impede or threaten the competitiveness and sustainability of the dairy market system. MERCADO used a private-sector driven market systems approach to establish a commercial-oriented, sustainable, and competitive dairy market system in Mozambique that can be competitive locally, regionally, and nationally. To accomplish this goal, the project worked to increase dairy productivity and quality at the farm level to help meet unmet demand for liquid milk by the processing industry, while also promoting quality, efficiency, and business viability along the value chain. The dual emphasis on farm-level productivity and value-chain development corresponds with the USDA Food for Progress (FFPr) strategic objectives (SOs) of increased agricultural productivity (SO1) and expanded trade of agricultural products (SO2). Venture37 implemented MERCADO project activities in the dairy-producing areas of the Beira corridor, focusing on the districts in Manica and Sofala provinces and the peri-urban areas of Beira city.

During the endline evaluation, the IMPAQ team conducted a performance evaluation to meet the evaluation objectives and answer the evaluation questions. Our mixed-methods approach frames the endline evaluation through the lens of Mozambique's dairy market system, considering how MERCADO's interventions contributed to development of a sustainable dairy market system driven by the private sector. Our inquiries at multiple levels of the value chain—dairy farmers, cooperatives, processors, student interns, paravets, retailers, veterinary shops, and other stakeholders—paint a broad picture of MERCADO's relevance, impact, effectiveness, and efficiency and examine the sustainability and gender equity of the project.

Methods

The IMPAQ team organized the endline evaluation using a mixed-methods approach, comparing progress on key outcomes over time for project participants. We collected quantitative and qualitative data from a broad population of dairy value-chain actors. Our non-experimental design administered a longitudinal survey to collect quantitative data from dairy farmers who were beneficiaries of the MERCADO project. We also collected a repeated cross-sectional semi-structured survey with aggregation and value-addition facilities (cooperatives), processors, and dairy breeders. Further, we used focus group discussions to collect qualitative information from farmers and key informant interviews to collect qualitative information from other value-chain actors—cooperatives, processors, breeders, paravets, lecturers, student interns, government representatives, retailers, veterinary shops, feed suppliers, and project staff. Since we can examine only trends or changes in outcomes without a comparison group, we are unable to attribute the findings *causally* to the MERCADO project. There could be non-project related factors, such as other projects or government programs in the region that are correlated with but not causally connected to the observed outcomes, which we are unable to disentangle from the true impact of MERCADO. That being said, we used qualitative methods, to the extent possible, to provide insights into the connections between MERCADO practices and desired outcomes, such as quality and sales.

Findings

Below we summarize key outcome indicators from both qualitative and quantitative data in the endline performance evaluation. As used here, the word ‘significant’ denotes statistical significance. We also include noteworthy outcomes that are not statistically significant because of small sample sizes.

Herd Size and Production Practices

- The proportion of medium-scale farmers (four to 19 cows) increased from 6 percent at baseline to almost 19 percent at endline.
- There was a significant increase in herd size for small-scale farmers from two cattle at baseline to three cattle at endline, and medium-scale farmers saw their herds grow from 14 cattle at baseline to 17 cattle at endline.
- The proportion of small-scale farmers who practiced zero grazing declined significantly, from 96 percent at baseline to 75 percent at endline; medium-scale farmers were also significantly less likely to practice zero-grazing at endline.
- The proportion of small-scale farmers who cultivated their own fodder increased significantly from 25 percent at baseline to 41 percent at endline.
- The proportion of small-scale farmers with continuous access to water increased significantly, from around 2 percent at baseline to 10 percent at endline.
- Small-scale farmers were also significantly more likely to use milking machines between baseline and endline.
- There was a significant decline in small-scale farmers using AI for breeding, and a significant increase in the use of natural breeding, when comparing baseline to endline. Ease of access to buying a heifer declined from 32 percent of small-scale farmers finding it easy to access a heifer at baseline compared to 20 percent at endline.
- For dairy farm equipment like stainless steel cans, milk chilling equipment, milk filters, and milk feeders, the majority of farmers continued to rely on Venture37 for replacement of this equipment.

Animal Health Services

- The ease of access to animal health testing increased significantly, from 36 percent at baseline to 59 percent of small-scale farmers finding it easy to access testing at endline.
- For almost all diseases—brucellosis, mastitis, and tick-borne diseases—small-scale farmers were significantly more likely to test for their prevalence at endline compared to baseline.
- There was an increase in the proportion of small-scale farmers who vaccinated their cows, from 79 percent at baseline to 83 percent at endline.
- Small-scale farmers reported a significant increase in ease of access to health services, with those reporting that access was easy or very easy increasing from 36 percent at baseline to 43 percent at endline.

Milk Production and Sales by Farmers

- There was a general increase in the daily milk production per cow for all categories of farmers from baseline to endline in the rainy season, for all the subgroups in our analysis. Cows produced on average 7.79 liters of milk per day at baseline for the rainy season and 8.31 liters per day at endline. Women and small-scale farmers saw significant increases in milk production in the rainy season. In the dry season, the daily milk production per cow declined from 7.80 liters per cow at baseline to 6.93 liters per cow at endline.

- The daily volume of milk sales in the rainy season increased from 11.43 liters at baseline to 13.32 liters at endline. Women and small-scale farmers saw significant increases in milk sales volumes in the rainy season. The volume of milk sales in the dry season also increased from 12 liters at baseline to 15 liters at endline.
- The value of daily milk sales in the rainy season increased from USD 5.09 at baseline to USD 9.29 at endline. Once again, women and small-scale farmers saw significant increases.

Milk Procurement by Cooperatives and Processors

- On average, cooperatives procured more raw milk during the rainy season; they procured 17,391 liters (with a value of USD 6,609) over the rainy season at midterm, versus 23,196 liters (with a value of USD 8,190) at endline for the same period.
- In the dry season, cooperatives procured more raw milk at midterm compared to endline; they procured an average of 26,007 liters of raw milk during the dry season at midterm and 17,582 liters at endline for the same period.
- On average, processors procured more milk at endline compared to midterm for the rainy season; they procured a little over 9,500 liters of raw milk in the rainy season (valued at USD 3,993) at midterm, versus 14,237 liters (valued at USD 5,194) at endline. Dry season procurement for processors did not change from midterm to endline.
- The average price per liter of milk procured by cooperatives and processors was similar in both seasons.

Processing of Milk

- On average at endline, processors had a larger processing capacity of 102,639 liters in the rainy season, compared to 87,857 liters in the dry season.
- Processors processed a similar amount of milk in the rainy season (58,286 liters) and the dry season (54,554 liters) at endline.

Sales of Milk and Milk Products by Cooperatives and Processors

- The average volume of milk sold by cooperatives in the rainy season was similar at midterm (16,173 liters) compared to endline (16,473 liters). In the dry season, sales were 17,874 at endline.
- For processors, the volume of milk and milk products sold in the rainy season was 9,750 liters and in the dry season was 10,096 liters.
- There were small seasonal differences in the average price per liter of raw milk sold by cooperatives and processors.

Milk Quality

- The number of times small-scale farmers had their milk rejected in the 12 months prior to the survey decreased from five times on average at baseline to four times on average at endline. Medium-scale farmers had their milk rejected three times at endline compared to eight times at baseline. This finding suggests an overall reduction in the frequency of milk rejection between baseline and endline.
- Quality checks and instruments varied among the cooperatives and processors, with few universal practices beyond the most fundamental. Testing for butterfat content, mastitis, acidity, and freshness were the most common quality checks.

Effects of External Shocks

- Lingering impacts on herd losses because of cattle illnesses after Cyclone Idai continued to be felt. Around 15 percent of small-scale farmers and 17 percent of medium-scale farmers reported that their cattle succumbed to disease because of the cyclone. The average number of cattle lost after the cyclone was 1.67 for small-scale farmers and 5.5 cattle for medium-scale farmers. There were also lingering impacts of the cyclone felt on milk production.
- For small-scale farmers, access to feed supplies (53 percent of farmers) and transportation of products to buyers (50 percent of farmers) were most impacted by the COVID-19 pandemic. Communication or visits from dairy business input vendors and from dairy buyers were also adversely impacted for almost 40 percent of small-scale farmers. Access to animal health/veterinary services was impacted to a lesser extent (around 30 percent of small-scale farmers). The findings were similar for medium-scale farmers.

The qualitative data offers context for the quantitative results. We examine the performance of the project in six categories: relevance, effectiveness, efficiency, gender equality and equity, sustainability and impact (perceived). The graphic below summarizes outcomes in those areas to highlight the main takeaways.

Relevance
▪ MERCADO aligned with the US and Mozambican governments' strategic goals and expectations for the dairy sector. ▪ Major barriers to growth in the dairy industry included lack of knowledge on new methods, connections between different dairy sector actors, access to finance, and legislation, as well as dependence on imported animals and inputs. ▪ Farmers, cooperatives, and processors reported being pleased with support provided by MERCADO (for example, infrastructure, equipment, and training).
Efficiency
▪ There were delays in project implementation, primarily due to external factors such as foot and mouth disease, cyclones, and COVID-19; as well as internal challenges—with less funding than expected each year and the project ending a year earlier than anticipated. ▪ Venture37 used an adaptive management approach to be flexible given external challenges. ▪ Project staff used monitoring and evaluation data to adjust activities (for example, starting community savings groups to increase access to credit). ▪ Government officials described close collaboration on legislation and noted that coordination could be improved with district focal points in Manica.
Effectiveness
▪ Lecturers reported revisions made to the dairy curriculum; student interns appreciated having practical experience. ▪ Stakeholders reported project implementation strengths as including facilitation of dairy value chain linkages, increased milk production, and government buy-in. ▪ Challenges included project implementation, given multiple external and internal factors such as cyclones and COVID-19. ▪ Lessons learned included investments in the private sector and youth for sustainability. ▪ Farmers requested additional help with feed, mineral blocks, and assistance with maintaining animal health.
Perceived Impact
▪ Farmers, paravets, and student interns reported increased milk production, improved milk quality, and better animal health and feeding practices after training and project assistance. ▪ Cooperatives and processors described challenges in getting adequate quantities of milk, but reported improved record keeping and access to equipment and machinery. ▪ The breeder reported success with cross breeding and artificial insemination, with help from the project in navigating expenses and government bureaucracy.

Gender Equality and Equity
- While many respondents did not believe women faced additional challenges, those who did said that this included questioning knowledge of women, engaging in labor-intensive work, and time available given other responsibilities in the household. - The program encouraged participation of women in trainings, and prioritized women in financial assistance by awarding additional points when reviewing applications.
Sustainability
- Areas identified to continue after the project ended included milk production, continued overall operations, and policy and regulations. - Challenges for sustainability included maintaining animal health, access to materials and inputs, and dairy value chain linkages. - When asked about future plans, nearly all stakeholders said they planned to continue their work and expand operations.

Recommendations

Based on our triangulation of findings, analysis, and lessons learned, IMPAQ developed the following recommendations—to focus on the main drivers of project success, as well as on changes required for future projects. We group our recommendations into two categories: best practices and future programming.

Best Practices with Respect to Current Activities

Continue and create more flexibility with Dairy Innovation Fund (DIF) and Dairy Herd Fund (DHF) opportunities. Most stakeholders appreciated how the DIF and DHF helped them access cattle and equipment, including farmers, cooperatives, and processors. They noted how the financial help allowed them to acquire cattle, and obtain items such as needed equipment and machinery, as well as retail refrigerators and branding and marketing opportunities. However, some applicants for DHF and DIF did not have the financial means to participate in the co-financing schemes, which was especially the case after Cyclone Idai. *Future projects could consider a wider range of financing options to enable participants unable to cover the current shares to participate.*

Build on the availability of skilled technicians with focus on employment opportunities following student internships. The project worked with at least 13 educational institutions, developing curriculum, improving resources, and facilitating student internships. The goal was to improve knowledge and expertise and to build a cadre of professionals in the dairy sector. When there were open positions in the dairy sector, the intent was to ensure candidates with relevant experience. Interviews with some stakeholders revealed a current lack and growing need for job candidates in Mozambique with dairy sector technical knowledge and skills. Most student interns interviewed said they saw dairy as an attractive sector and would like to work in the area. One staff member said the internship program resulted in employment for some interns. *Future projects could look at assisting students with employment after completing their internships and facilitating connections between dairy sector actors looking for skilled candidates and individuals who completed internships and the dairy curriculum. Additionally, future projects could invest funds to cover partial or full employment for student interns to work with cooperatives and other dairy sector actors that may not have funds to hire on their own.*

Recommendations for Sustainability and Future Programming

Continued focus on policy implementation. One of the project's successes was close coordination with the Mozambican government at all levels to draft and submit dairy-sector focused legislation for approval. During the project timeline, the Livestock Health Legislation was submitted for review to the Ministry of Agriculture and Rural Development, other regulations were in the approval process, and the National

Dairy Strategy was drafted, with implementation pending. Some government officials noted that, after approval, implementation will be a challenge. *Future projects could investigate potential barriers to implementation as well as next steps.* Additionally, the project transitioned from working to create a national dairy board, to instead facilitate provincial dairy unions to serve as representative bodies to liaise among cooperatives, the private sector, and the government. For these two provincial dairy unions, COCOLEMA in Manica has finalized formal registration, while this is still in process for SOLEITE in Sofala. *Future steps could be providing additional support for those unions representing dairy value chain interests and coordinating with government officials.*

Enhance transportation capabilities for cooperative and processors. While the project helped create milk collection centers and cooperatives to ease transportation difficulties for farmers, there were still challenges for cooperatives and processors in transporting raw milk and dairy products. Even though it was possible for cooperatives and processors to apply for DIF grants to support dairy transportation, this was still identified as a continuing need among these stakeholders. *Future projects could look at including transportation for delivering larger quantities of milk and dairy products—both from cooperatives to processors, and for processors to deliver to retailers and other customers.* This could also include coordinating with government officials to get support for improving roads and infrastructure related to transportation—helping improve distribution and sales of milk and dairy products, acknowledging limited government budgets and resources.

Promote in-country cross-breeding. Over the course of the project, demand for cross-bred cattle increased. In interviews, farmers reported preferring cross-bred cattle over pure-bred cattle, due to perceived better health and resilience. According to MERCADO semi-annual performance reports, the project procured cross-bred heifers and bulls from a local breeder to distribute to DHF grantees; and after exhausting supply, imported cross-bred cattle from South Africa.¹ It is noted that later on the project was shifting more towards procuring locally cross-bred cattle, as possible. The local breeder also shared that there was great demand and many interested buyers for local cross-bred in-calf heifers, but that few buyers had the financial ability to pay the higher prices (e.g., ~USD \$1100 - \$1500), even with prices lower than for an imported purebred in-calf heifer (e.g. ~USD \$1980), compared to a local native breed (e.g. ~USD \$400). *Future projects could continue to promote in-country cross-breeding of cattle and supporting additional breeders to increase access and affordability for farmers, since it was unlikely that imported purebred or cross-bred cattle would be sustainable after the project ended. Future projects could focus on promoting cross-breeding capacity, for example among more farmers or supporting other breeders with grants or other assistance. Future projects could also include a subsidy to farmers to buy cross-bred cows or make this a focus of activities such as the Dairy Herd Fund.*

Support cooperatives in becoming self-sufficient and sustainable. The dairy industry in Mozambique was still recovering and largely dependent on Venture37 even at endline. While cooperatives benefited immensely from the trainings provided by Venture37, this was not sufficient to raise their capacity to make them self-sufficient and enable them to become service providers for the farmers attached to them. For instance, most farmers at endline continued to rely on Venture37 for most dairy farm equipment, infrastructure, and animal health testing. There was marginal improvement in this regard, with a small proportion of farmers relying on cooperatives for some equipment such as stainless steel cans for milking. Additionally, the project also supported vet shops to increase the stock of testing equipment. However, there was substantial room for improvement in raising the capacity of cooperatives, to both become self-sufficient and financially viable, and become a service provider for farmers. *A future project could build on MERCADO's approach of placing long-term interns in cooperatives and embed a technical staff member within each project-supported cooperative to provide consistent advice, business support, and technical*

¹ MERCADO Semi-Annual Performance Report, April 2020 – September 2020

expertise on a regular basis. This technical staff member could eventually become a cooperative staff member and internally raise capacity of other staff members, thereby strengthening cooperatives in becoming more self-sufficient.

Build in-country capacity for dairy farm equipment and animal health services. For most farmers, Venture37 continued to be the main source for dairy farm equipment, and infrastructure. *A future project could focus on decreasing reliance on the implementer by building local in-country capacity. For instance, a project could build capacity of local suppliers of dairy farm equipment and connect them with international suppliers, so that once the implementer exits the project region, the local suppliers established trade lines are already set up. Additionally, a future project could focus on more training and grants to local suppliers to help expand their dairy farm equipment businesses.* The project had started doing this by facilitating linkages between dairy sector actors and input providers such as veterinary shops and feed suppliers; this could be expanded for future projects. This would help in local suppliers becoming a viable source for dairy farm equipment for dairy farmers. *A future project could also explicitly focus on building local capacity of animal health technicians and veterinary doctors, to help farmers with disease control on a more sustainable basis.* Government stakeholders also requested that the project consider leaving a transitional staff member in place focused on veterinary and animal health needs for a year after the project ended, to allow time for the government to fill the position permanently.

Increase focus on women farmers and help them succeed. At midterm and endline, we observed women farmers having higher than average milk production and sales volumes and values. However, barring a few exceptions, most women were more likely to have smaller herd sizes and found it difficult to access credit to expand their farms. In addition, qualitative interviews revealed that women were often expected to care for children and complete other housework, which could limit their availability for dairy sector activities. The project had started facilitating linkages between men and women farmers and credit and savings associations, which could be continued and expanded for future projects. Additionally, the project prioritized women with grant allocations by adding points for gender when reviewing applications. *A future project could explicitly include a focus on women farmers, including specific trainings and resources for women farmers, to help them overcome the constraints they face and become more commercial, by expanding operations and adopting improved business practices. Providing additional resources for childcare could also help address this issue for future projects. Additionally, a future project could specifically target women to help them increase their herd sizes, either by providing them preferential credit to buy heifers or targeting them for training and support on breeding practices to help them expand their herd size.*

Integrate disaster risk management upfront in project design and budget. One of the main challenges of the MERCADO project since its inception were frequent cyclones that disrupted project implementation and adversely impacted project beneficiaries. For instance, from 2019 to 2021, two major cyclones, Idai and Eloise, hit the provinces of Sofala and Manica, which led to significant herd losses and infrastructure damage. Given the predictability of these extreme events in Mozambique, *a future project could explicitly incorporate a disaster risk management plan in project design at the inception phase, to help mitigate the impacts of future crises by facilitating disaster preparedness.* This could allocate funds at the design phase of a project for a ‘rapid response,’ including immediate cash grants to purchase essential supplies, food, emergency animal health equipment, and temporary shelters for project beneficiaries, within five days of any event—complemented by a second in-kind and cash grant a few weeks after the event to reinforce local capacities. *A future project could also explicitly include funds to work with the government to stockpile commodities for a disaster response; review and update disaster preparedness and contingency plans at the central and local levels with government stakeholders; help form or improve systems of*

stakeholder coordination and engagement before and during a disaster; and strengthen the mapping of hazards and early warning systems.

SECTION 1. INTRODUCTION

Land O'Lakes Venture37 (Venture37) contracted with IMPAQ International, LLC (IMPAQ) to implement the evaluation of the five-year Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) project, funded by the United States Department of Agriculture (USDA). The evaluation consisted of three components: baseline and gender analysis (2016), midterm (2019), and endline (2021) evaluations. The purpose of this endline evaluation report is to measure progress in achieving the intended outcomes from baseline and endline, and to provide recommendations for future programming in the dairy sector in Mozambique.

Section 1 provides background on the Mozambique dairy sector, describes the MERCADO project, and presents an overview of the results framework and specific project activities. **Section 2** describes the endline evaluation methodology—including endline evaluation objectives, research questions, data sources, sampling and data collection tools, data analysis methods, field implementation, and data collection challenges. **Sections 3** and **4** present the endline quantitative and qualitative results from farmers; cooperatives, processors, and breeders; and additional stakeholders. **Section 5** concludes the report by outlining limitations of the evaluation and offering recommendations based on the evaluation's key findings and conclusions. We present the indicator table for the project, with endline evaluation values, in **Annex A**.

1.1. Overview of Mozambique's Dairy Sector

Historically, Mozambique had a well-developed dairy sector and major milk production. In 1973, the number of dairy cows and amount of milk production peaked, at 13,200 cows and over 13 million kilograms of milk produced annually. The important contribution of dairy production to the livelihoods of smallholder dairy producers is well documented.² Between 1970 and 1980, development of the dairy industry in Mozambique was accompanied by the establishment of milk collection points to facilitate milk collection from smallholder producers. This played a fundamental role in the promotion of milk production in rural families, and created the perception that milk could be a substantial resource for the community.³

However, nationalization, disruption to economic life resulting from the devastating and protracted civil war, and subsequent privatization in the post-socialist period caused milk production to drop considerably, resulting in a much-weakened dairy sector.⁴ Recent official statistics placed the number of dairy cows at 2,209. Of those cows, 80.4 percent were in Sofala and Manica provinces.⁵ The country is almost completely dependent on imported milk and milk products, because of the decline in number of dairy cows and poor management of dairy production. In 1992, the contribution of the national production to the total milk and dairy products consumed was 6.0 percent—a figure that, 20 years later, is largely unchanged at 6.4 percent.⁶ Various attempts were subsequently made to revive and develop milk production and processing in the early 2000s, but for a variety of reasons, these failed to sustainably revive the sector.⁷ For instance, in the early 2000s, the contribution of dairy to gross domestic product (GDP) as a livestock component was still small, with the livestock sector contributing 14.8 percent to agriculture GDP and 4.4 percent to total GDP (FAO, 2005).

² Mozambique Dairy Development Program Baseline Evaluation, June 2013.

³ Mozambique Dairy Development Program Midterm Evaluation, March 2015.

⁴ Mozambique Dairy Development Program Endline Evaluation, November 2016.

⁵ Venture37 MERCADO Baseline, Midterm, and Endline Evaluation Terms of Reference (Updated); December 6, 2016; pg. 1.

⁶ Ibid; pp. 1.

⁷ MERCADO Special Study, Barriers to Growth, 2017.

The Government's vision for the dairy sector is to revitalize the industry and become self-sufficient in dairy production and processing. A 10-fold growth in production over the next 10 years would bring local production to over 20 million liters, and the herd size back to around 13,000 cows.⁸

1.2. Previous Venture37 Projects in Mozambique

Since 2008, Venture37 has led the revival of the Mozambican dairy industry, leveraging USDA Food for Progress (FFPr) funding to build a supply base and distribution system for domestically produced milk. These efforts have facilitated capacity building, market linkages, and financial investments essential for sustaining the development of a socially inclusive yet market-driven industry.

The Strategic Plan for Dairy Development in Mozambique and government interventions identify the Beira corridor as a priority location in which to reestablish the country's dairy production. The peri-urban areas of Beira and Chimoio cities, in which Venture37 is reestablishing dairy production, are the same areas where dairy farms were previously concentrated.⁹ Prior to MERCADO, in support of the Government of Mozambique's vision, USDA had invested in two dairy projects implemented by Venture37 since 2009.

- **Manica Smallholder Dairy Development Program (MSDDP) 2009–2012.** MSDDP focused on establishing a small-scale cohort of smallholder dairy farmers in Manica, a province with little smallholder dairy activity prior to USDA's investment. By the end of the project, Venture37 demonstrated that dairy could be a viable enterprise for smallholder farmers, and interest in the sector started to grow.
- **Mozambique Dairy Development Program (MDDP) 2012–2016.** Building on MSDDP success, the MDDP kicked off in 2012 to expand the model, from a single Chimoio-based hub to two additional hubs in Sofala and Maputo. The MDDP project took a broader value-chain approach, using matching grants to support small-scale and medium-scale producers and small-scale, medium-scale and larger processors, and to leverage private sector and local financial sector investment in dairy. Because of MDDP assistance, dairy became a promising business and attracted new investments in the intervention areas in Manica and Sofala provinces. All these investments promoted the production of milk for both large and small-scale farmers, therefore increasing the number of jobs created. As a result, the volume and value of milk processed meeting international standards substantially increased.¹⁰

MSDDP and MDDP revived dairy production, especially in the central Manica and Sofala provinces. The 2010/2015 national herd growth based on the number of cows increased by 41 percent, with the MDDP project contributing 54 percent of this increase with its cow imports and natural growth. The national pure breed dairy cowherd in 2015 was estimated at 2,304 head, of which some 1,900 were located in Manica and Sofala.¹¹ The total production of milk from these dairy animals was estimated at 2,268,700 liters, with the majority produced in Manica and Sofala, followed by Gaza and Maputo. The three provinces of Maputo, Manica, and Sofala represent some 87 percent of the national herd (1,927 cows out of the 2,209 total). In 2015, the production of milk in these provinces accounted for 78 percent of the total milk produced in Mozambique.

At the end of MDDP in 2017, the domestic dairy sector in Mozambique still faced many challenges. The dairy industry was at a critical point in its development and its future survival, in the context of dominant

⁸ MERCADO Special Study. Impact of USDA Investment, March 2017.

⁹ Ibid; pp. 1-2.

¹⁰ Mozambique Dairy Development Program Endline Evaluation, November 2016.

¹¹ MERCADO Special Study. Impact of USDA Investment, March 2017.

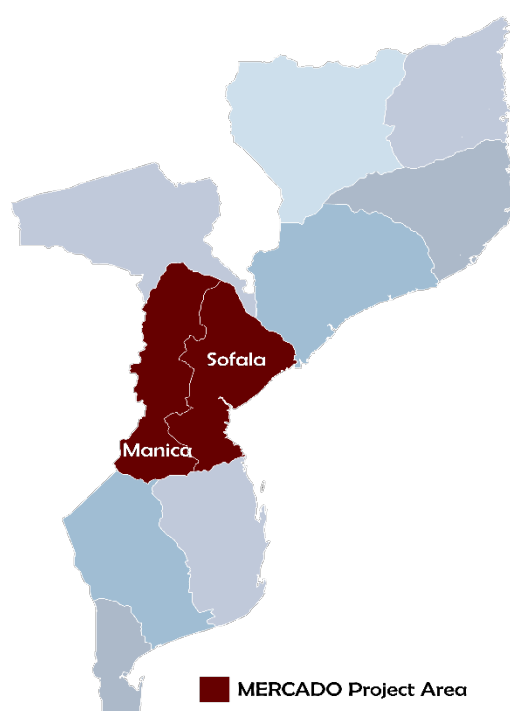
and growing dairy product imports. Lack of scale in dairy cattle and milk production was hindering growth in the development of inputs and services, as well as in modern processing facilities. The milk market, while relatively small-scale in comparison with other Sub-Saharan African countries, had a substantial formal market, principally in the urban areas, that was dominated by imports. Simultaneously, an undefined informal market was operating in peri-urban and rural areas, comprising both local and imported products. Local market players faced a number of obstacles to growth and development throughout the value chain. These included sub-optimal inputs (access to feed, breeding, machinery, parts/consumables); low milk production (herd size, yields, quality), poor logistics (collection, distribution, points of sales); and underdeveloped supporting services (veterinary services, quality infrastructure, distribution, marketing).¹² In this context, MERCADO, the third USDA-funded project, was initiated. We describe its main project components in detail below.

1.3. Venture37 MERCADO Intervention and Results Framework

The USDA-supported MERCADO project was Venture37's third Mozambican dairy sector development initiative. The five-year project, which began in October 2016, sought to address critical weaknesses that still impeded or threatened the competitiveness and sustainability of the dairy market system.¹³ According to Venture37, MERCADO's stated goal was to establish a commercial-oriented, sustainable and competitive dairy market system in Mozambique that can be competitive locally, regionally, and nationally. To accomplish this goal, the project worked to increase dairy productivity and quality at the farm level, to help meet unmet demand for liquid milk by the processing industry—while also promoting quality, efficiency, and business viability along the value chain. The dual emphasis on farm-level productivity and value-chain development corresponds with the USDA FFPr strategic objectives of increased agricultural productivity (SO1) and expanded trade of agricultural products (SO2). Venture37 implemented MERCADO project activities in the dairy-producing areas of the Beira corridor—including remote districts in Manica province, and the peri-urban areas of Beira city (Sofala province) (see **Exhibit 1**).

MERCADO's results framework (see **Annex B**) links project activities and outputs with desired outcomes and project-level results. The causal logic underlying MERCADO's results framework posits that facilitation of training, equipment, and inputs among dairy value-chain actors will increase their knowledge and productive capacity to produce and add value to quality milk products, while simultaneous improvements to the market (in particular, prices, market terms, and local demand) will increase their motivation to do so. These changes will also lead to increases in the volume and quality of dairy farmer's milk, and subsequently improve quality along the value chain. Together, increased volumes and production quality will enable the emergence of a competitive, profitable, and sustainable dairy market system.

Exhibit 1. Target Provinces of MERCADO Project



¹² Mozambique Dairy Development Program Endline Evaluation, November 2016.

¹³ The project agreement was signed in September 2016 but due to donor requirements, field activities could only take place after the baseline was approved in May 2017.

To improve the productivity of dairy cows, MERCADO improved the quality and availability of inputs—such as animal health services, extension services, feed and fodder, and dairy equipment—improving the capacity of dairy farmers to care for their animals in the process. To improve input quality and availability, MERCADO retrained previously trained community livestock workers (CLWs or paravets) to provide services to the dairy farmers. MERCADO also continued to provide an updated curriculum and internships for students at local technical institutes interested in entering the dairy sector. The project worked with agro-businesses, including feed and fodder producers and other input providers, to increase their capacity and facilitate access to finance to start or grow their businesses.

According to Venture37’s documents, the project also recognized that, in the face of unmet demand, dependence on relatively few large-scale commercial milk processors made farmers and other value-chain actors vulnerable to disadvantageous price and market conditions. In this context, the project sought to increase diversity and competition along the value chain by promoting entry of new market actors, particularly at the processing level, while also promoting appreciation of, awareness of, and demand for local milk among consumers. MERCADO continued to pursue the seven activities categorized in three focus areas: financial services; training; and capacity building of farmers, extension workers, input and service providers, and post-farm value-chain actors. We summarize the activities according to Venture 37 in Exhibit 2 and below.

Exhibit 2. Project Activities according to Venture37

Activity Focus Area	Activity Description
Financial services	1. Facilitation of investment in dairy herd restocking
	2. Facilitation of investment in the dairy sector via the Dairy Innovation Fund
Training	3. Improved farm practices
	4. Improved post-harvest handling, food safety
Capacity building	5. Agricultural extension agents/services
	6. Aggregation and value addition
	7. Promotion of improved policy and regulatory framework

Activity 1. Financial Services: Facilitate Investment in Dairy Herd Restocking

Venture37 continues to restock the Mozambican dairy cattle herd by importing dairy cattle, and by establishing the Dairy Herd Fund (DHF) to enable enterprise-minded farmers to access capital to purchase both imported and local dairy cattle. Commercial breeders can also access this fund to expand their dairy herds, and to invest in appropriate reproduction techniques to reduce Mozambique’s need for imported cattle. Venture37 uses the DHF to provide in-kind grants with a scaled match component.

Activity 2. Financial Services: Facilitate Investment in the Dairy Sector via Innovation Fund

Venture37 developed a Dairy Innovation Fund (DIF) that entrepreneurs (including input and service providers, producers, processors, and retailers) can access to finance equipment, infrastructure, and other innovations to expand their businesses. Venture37 identifies entrepreneurs in input or service provision and links them to the DIF or financial institutions, to access finance to develop and grow their enterprises. Venture37 uses the DIF to administer in-kind grants with a scaled match component.

Activity 3. Training: Improved Farm Practices

Venture37 builds dairy farmer capacity to improve animal health and nutrition, as well as their own farm business acumen, to increase milk production and herd growth. Venture37 provides ongoing support and guidance to dairy farmers on improved feeding and appropriate technology use, including fodder production and animal nutrition. Additionally, Venture37 provides training to dairy farmers on husbandry,

including breeding, mastitis control, hygiene, and animal health. Venture37 trains farmers in farming as a business, including facilitating linkages among farmers and technology, input, and service providers.

Activity 4. Training: Improved Post-Harvest Handling, Food Safety, and Quality

Venture37 helps improve post-harvest handling to decrease post-harvest loss, focusing on the cold chain from production to retailers. Venture37 identifies weaknesses in the cold chain to design appropriate training for farmers, cooperatives, and processors on post-harvest handling—including such topics as hygiene, quality control, processing, and awareness of zoonotic diseases like brucellosis and tuberculosis. Venture37 provides technical support to processors, who provide training on post-harvest handling, food safety, and quality to cooperatives.

Activity 5. Capacity Building: Agricultural Extension Agents/Services

Venture37 works with educational institutions, processors, cooperatives, and other input providers to make dairy extension services available to farmers. Venture37 supports educational institutions to build a cadre of professionals in the dairy sector—through such activities as integrating dairy into current livestock and veterinary curricula, setting up demonstration farms for training, and facilitating dairy internships. Venture37 continues to support community paravets, who provide guidance and veterinary services to dairy and livestock farmers. It also facilitates linkages between the paravets and private or government veterinary services; and supports processors, cooperatives, and other businesses interested in developing appropriate support services and inputs to farmers. In addition, Venture37 supports establishment of local breeders to provide an in-country supply of dairy cattle. This support builds their dairy breeding skills and helps them explore the effectiveness of various breeding technologies.

Activity 6. Capacity Building: Aggregation and Value Addition

Venture37 increases market access by supporting milk bulking and value addition in local businesses. It works with existing milk bulking businesses, such as cooperatives, to enhance growth and profitability. It also explores and implements such alternative milk bulking models as working with dairy farmers, private businesses, and processor-owned bulking facilities. Venture37 supports these businesses to expand into areas such as cold chain management, processing, and retail opportunities. These opportunities potentially include developing transport systems, purchasing processing equipment to process the milk on site, and creating milk kiosks to sell directly to customers. Venture37 trains youth on nutrition, food safety, and dairy quality to promote consumption of dairy products. It also facilitates a marketing campaign to stimulate alternative markets through promoting locally produced milk products.

Activity 7. Capacity Building: Promotion of Improved Policy and Regulatory Framework

Venture37 and key dairy sector stakeholders—including dairy producers, cooperatives, processors, input and service providers, and private sector investors—work with the government to examine the current policy and regulatory framework to identify barriers to growth in the dairy industry and recommend effective solutions. Based on the results, Venture37 supports capacity building and networking opportunities for key government staff and other stakeholders, to increase their ability to strengthen the Mozambican dairy sector. Through a consultative process, Venture37 facilitates development of a private-sector led representative body for the dairy sector to support the needs of the dairy industry, including helping this body develop its mission statement and strategy. This entity engages the government of Mozambique to advocate for reforms in the policy and regulatory framework, to support growth and investment in the dairy sector.

1.3.1 MERCADO's Policy Interventions

While Venture37 has endeavored to make their activities and strategies consistent with the priorities of the Government of Mozambique, a key component of the MERCADO project, as compared to Venture37's previous projects in Mozambique, was the addition of capacity building activities with the government to promote the country's policy and regulatory framework. This entailed working with key value chain actors in the dairy sector—including producers, cooperatives, processors, input and service providers, private sector investors, and the government—to examine the existing policy and regulatory framework to identify barriers to growth in the dairy industry and recommend effective solutions.

In this context, MERCADO had a dedicated policy officer who supported key government staff and key dairy value chain actors to increase their ability to strengthen the Mozambican dairy sector. By focusing on both the government and the private sector, the project laid the groundwork for a sustainable industry, where gains would continue after MERCADO ended. In particular, Venture37 worked with the National Veterinary Directorate (DNDP) of the Mozambican Ministry of Agriculture. DNDP's main goal is to establish a viable dairy sector in the country. They started from the ground up to lay a national foundation, as there were no national policies related to the dairy industry in place prior to MERCADO. To do so, Venture37 supported three crucial efforts. The first was development of a national dairy development strategy that clearly outlined and structured the government's priorities and the steps needed to organize the industry. The second was establishment of a national representative dairy board, comprising the actors along the value chain. Third, Venture37 supported development of legislation and regulations—including around livestock health, livestock feed, medicine, and milk collection, refrigeration and bulk transport. Venture37 was also in the early stages of developing standards for manufacturing plants/processors.¹⁴ In addition to helping draft legislation, Venture37 supported several other capacity-building activities for the government. This included a networking visit to Zambia, where government representatives and other representatives from the dairy value chain learned firsthand about the neighboring country's successful national dairy board and dairy policies.

In Year 4 (October 2019–March 2020), the MERCADO project continued to have a particularly successful relationship with the Government of Mozambique in supporting development of an enabling environment for the dairy industry and related sub-sectors. Data collection for the National Dairy Strategy was finalized and the initiative was expected to progress to the stakeholder validation stage. The project also continued to follow up on the legislation and regulations it supported the Government of Mozambique to develop—the Livestock Feed Regulation; the Regulation on Raw Milk Collection, Refrigeration, and Bulk Transport; and the Livestock Health Legislation. The Livestock Health legislation awaits review and approval from the Ministry of Agriculture and Rural Development and then will be submitted to the Council of Ministers for approval, and then presented to the parliament. Reduced activity of parliament due to the health emergency caused by the Coronavirus disease 2019 (COVID-19) pandemic, however, means that approval of the legislation could take longer than the life of MERCADO implementation--preventing the project from supporting the rollout and dissemination stages to come.

Finally, for the October 2020–March 2021 period, the MERCADO project continued to support the National Directorate for Livestock Development (DNDP) at the Ministry of Agriculture and Rural Development (MADER) in developing the National Dairy Strategy, and MERCADO supported DNDP in disseminating the National Dairy Strategy—not only to guide the national dairy policy but also to identify the most appropriate institutional format for a national representative body. In addition, MERCADO held a seminar for government participants to disseminate the results of work carried out by multi-sectoral

¹⁴ Interviews with DINAV representatives and Venture37 project staff; MERCADO Semi-Annual Performance Report, April 2018–September 2018; MERCADO Semi-Annual Performance Report, October 2018–March 2019

teams and actors involved in the dairy national strategy for developing the dairy sector, as well as obtaining the views of other sectors interested in the development of the dairy industry in Mozambique.¹⁵

1.3.2 MERCADO's Work on Demand Creation

Along with working towards increasing the supply of milk in Mozambique, the project focused on *“creating a demand shift for quality domestic dairy products.”* The intent was to increase demand to match the increased supply of milk, thus avoiding any supply glut or reduction in the milk prices local producers received. To create a demand for domestic dairy products, Venture37 trained youth at educational institutions on nutrition, food safety, and dairy quality to promote consumption of dairy products. Concurrently, Venture37 conducted an awareness campaign to stimulate alternative markets through promotion of locally produced milk products.¹⁶

In Year 1 of the MERCADO project, demand creation focused on developing material to train youth on nutrition, food safety, and dairy quality, to promote consumption of dairy products. Additionally, Venture37 developed campaign materials for use in a marketing campaign. Through promotion of locally produced milk products, the marketing materials focused on stimulating alternative local markets and making domestic products more attractive to consumers.¹⁷

In Years 2 and 3, Venture37, along with private players, ran a series of consumer campaigns combined with youth training, along the Beira Corridor, on the health benefits of local milk and milk products in strategically located community schools. In Year 3, MERCADO trained close to five hundred youth, teachers, and staff, in two schools in Sofala, on the nutritional value of milk products and the type of milk products safe to consume in schools.¹⁸ Venture37 estimates that the dairy demand campaign reached around 1400 consumers in Sofala province. Similarly, by Year 3, Venture37 estimated that, in two schools in Manica province, the dairy demand campaign reached 718 participants. The marketing events in Manica were led by local processors, with the assistance of the project. According to Venture37, large processors involved with the project and two microprocessors were also directly involved in the youth dairy marketing campaign in Manica, focusing on school children and teachers. When compared against the training target for Year 3, according to Venture37's estimates, the MERCADO project had achieved 67 percent of the target by the project year's midpoint.¹⁹

In Year 4 (October 2019–March 2020), the project continued to support educational institutions to build a cadre of professionals in the dairy sector, through integrating dairy into current livestock curricula and facilitating dairy internships. The project also entered into a Memorandum of Understanding with an additional educational institution, the Chimoio campus of the Catholic University of Mozambique (UCM), bringing the total number of education institutions engaged in dairy activities to 13. The dairy internship program added another 116 interns (74 men and 42 women). MERCADO's role was to support the internship program's development, and link education institutions with host businesses working in the dairy value chain. As the project entered its endline months with limited funding, the focus shifted towards grantee business development. The internship program was terminated at the end of March 2020.²⁰

Over the course of Year 4, the project held two seminars focused on education institutions, internships, capacity building, and extension partners. The project also reviewed progress made by MERCADO in this

¹⁵15 MERCADO Semi-Annual Performance Report, October 2020 – March 2021

¹⁶16 MERCADO Life of Project Work Plan Year 1, 2016.

¹⁷17 MERCADO Life of Project Work Plan Year 1, 2016.

¹⁸18 MERCADO Semi-Annual Performance Report, April 2018 – September 2018

¹⁹19 Ibid.

²⁰20 MERCADO Semi-Annual Performance Report, October 2019 – March 2020

sector, identifying challenges and future actions necessary to continue building dairy expertise in Mozambique. COCOLEMA, the Provincial Dairy Union in Manica province, expressed eagerness to continue promoting some key activities, including the internship program's efforts to linked education institutions with dairy sector businesses wishing to host short- and long-term interns.²¹

1.3.3 MERCADO's Role in Commercialization of the Dairy Sector

In addition to MERCADO's policy and demand creation work, the project focused on commercialization of the dairy sector in Mozambique, working with farmers, processors, and cooperatives in the dairy sector to improve their commercial viability.²² Commercial dairy farming has the potential to provide better incomes to farmers, which translates into reduced poverty and substantial improvements in project beneficiaries' standard of living. Commercialization of dairy farming is especially beneficial for small-scale farmers, who mostly depend on subsistence farming. Further, commercialization has the potential to increase local dairy production—enabling local consumers to buy locally produced dairy products at a reasonable price, while reducing dependence on imports. This is likely not only to generate employment in dairy sector, but also to reduce import costs.

In this context, to improve the commercial viability of the dairy sector, according to Venture37, MERCADO provided technical support to all dairy sector players, and helped them in developing and improving milk supply chains. At the start of MERCADO, challenges included disorganized markets; limited skills to maintain high quality milk; low market infrastructure to support development of successful a dairy sector; and inefficient contractual arrangements among dairy farmers, milk collectors, cooling centers, and processors.²³ To combat these challenges and increase the commercialization of the dairy sector, according to Venture37, MERCADO provided training on hygienic milk handling, worked with private players towards establishment of milk bulking facilities and other infrastructure, and worked towards improving trust and contractual agreement between dairy farmers and their buyers. Based on Venture37's semi-annual performance reports, this potentially reduced transaction costs, improved participation of farmers in the formal dairy supply chain, increased the size of the domestic dairy sector, improved the quality of milk, and reduced milk spoiling due to unhygienic conditions.²⁴

Prior to MERCADO, cooperatives and processors in the region had limited commercialization skills in production handling, food safety, and quality. As reported by Venture37 in their semi-annual reports, MERCADO provided them training on improved postproduction handling, food safety, and quality in 2018, which helped them improve their businesses. Also according to Venture37, these trainings helped reduce cooperatives' and processors' inefficiencies and transaction costs, and made these businesses more financially viable, and therefore sustainable.²⁵

Finally, Venture37 provided a variety of technical support to dairy farmers to improve their productivity and milk quality. To sustainably produce high quality milk for commercial purposes, farmers need to follow numerous practices—such as checking and reducing diseases among cows, vaccinating dairy cows, providing better nutrition to the dairy animal, following standard practices of cleanliness of the kraal, zero-grazing, keeping milk records, and artificial insemination (AI) among others.²⁶ In Year 3 of the project, Venture37 reported providing trainings and demonstrations to disseminate information about benefits to improving breeds through AI; benefits from animal registration, improved husbandry, and dairy enterprise management practices; and improved fodder production and management, supplemental feed use, and

²¹ MERCADO Semi-Annual Performance Report, October 2020 – March 2021

²² Proposal Introduction and Strategic Analysis, Land O' Lakes Mozambique Food For Progress FY 2016

²³ MERCADO-Mozambique Dairy Sector – Barriers to Growth, 2017

²⁴ MERCADO Semi-Annual Performance Report, October 2018 – March 2019

²⁵ Ibid pp 9-31

²⁶ MERCADO Semi-Annual Performance Report, April 2018 – September 2018

animal diseases and disease management. Further, in Year 4, MERCADO facilitated the link between dairy entrepreneurs and savings and credit systems. Two local non-governmental organizations—*Associação para o Desenvolvimento Económico de Manica (ADEM)* and *Associação para o Desenvolvimento Económico Local – Sofala (ADEL)*—provided training to farmers on the basics of savings and credit schemes.²⁷

1.4 External Factors and MERCADO

Four external factors characterized the MERCADO project landscape over the course of its implementation: Cyclone Idai, COVID-19, local unrest, and Cyclone Eloise.

Cyclone Idai

In March 2019, Cyclone Idai—one of the worst tropical cyclones to affect Africa and the Southern Hemisphere—caused catastrophic damage to Mozambique, Malawi, and Zimbabwe. MERCADO supports the dairy value chain in Sofala and Manica provinces, both of which were affected by the cyclone. In Sofala province, the districts of Beira, Dondo, and Nhamatanda were the most impacted by the cyclone’s strong winds, heavy rainfall, and ensuing flooding. This cyclone had a catastrophic impact on residents, and caused both immediate and long-term damage to livestock assets. An estimated 87 dairy cattle under the auspices of the MERCADO project were lost in Manica (37) and Sofala (50); in Sofala this was equivalent to 6 percent of the dairy herd lost during, or in the immediate aftermath, of the cyclone; in Manica this was equivalent to 3 percent of the dairy herd. Of the MERCADO-supported Sofala and Manica dairy farmers, 102 and 60, respectively, lost one or more cattle, dairy infrastructures, equipment, feed supplies, residences, and/or other properties.²⁸

Short-run financial impacts to dairy livestock and related assets, including processed product in stock, were estimated at \$250,000. IMPAQ’s midterm evaluation of MERCADO in July 2019 found that the cyclone led to cattle disease and death and cattle stress, particularly for small- and medium-sized farmers—leading to reduced milk production. Housing for cattle was the primary infrastructure damaged by the cyclone, causing difficulties for farmers to access dairy inputs. Cooperatives and processors reduced milk procurement after the cyclone, with processors revealing sharp losses driven by damage to roads, grazing fields, and dairy infrastructure.

A year later, the dairy industry continued to feel the impact of the cyclone, with milk production yields still lagging pre-cyclone levels, contrary to the growth that had been forecast.²⁹ The project extended cost-share deadlines to provide flexible support to beneficiaries, but further extensions were not possible due to the project’s early end date. It was predicted to take 12-18 months for the dairy industry to return to its original growth trajectory, but the semi-annual evaluation performed by the project for USDA in March 2020 reported that it had not yet recovered. This was further complicated by the COVID-19 pandemic, local unrest, and Cyclone Eloise, as discussed below.

As part of this evaluation, we examined any lingering effects of the cyclone on MERCADO’s project participants and the dairy value chain in Sofala and Manica. We will also examine how the cyclone influenced project results, including achievement on key performance indicators outlined in the Performance Monitoring Plan.

COVID-19

COVID-19 is a contagious respiratory and vascular disease responsible for an ongoing worldwide pandemic. In early 2020, this worldwide health emergency resulted in a number of setbacks for the

²⁷ MERCADO Semi-Annual Performance Report, October 2019 – March 2020

²⁸ MERCADO Semi-Annual Performance Report, October 2018 – March 2019

²⁹ MERCADO Semi-Annual Performance Report, October 2019 – March 2020

MERCADO project, further derailing beneficiaries from reaching intended outcomes. According to the MERCADO Semi-Annual Performance Report of October 2019–March 2020, these effects included cancellation or postponement of youth, education, marketing events, agribusiness, and fairs; and postponement of dairy cattle importation. Additionally, especially early in the pandemic, COVID-19 restrictions made the project unable to provide technical assistance to participating farmers.

MERCADO carried out an in-depth review of the annual work plan and budget to determine which activities to prioritize, which to postpone, and which were unlikely to be reinitiated due to restrictions, or lack of time prior to end of project activities (which occurred in March 2021, earlier than planned).³⁰ The limit on activities hastened the program’s decision to scale back staffing, reducing total employees in August and September 2020 by approximately 30 percent. In the remaining project period, MERCADO focused on strengthening investments carried out under Activity 1 and 2, providing targeted capacity building under Activities 3-6, and finalizing key ongoing policy and regulatory framework with the Government of Mozambique, with a view toward ensuring sustainability.³¹ The pandemic was also expected to cause impacts across the entire Mozambican economy and reduce both milk consumption and production. And the deflation of the Mozambican currency, the Metical’s value against the US dollar, was expected to raise local prices for imported inputs like veterinary products.³²

As part of this evaluation, we examined the effects of the COVID-19 pandemic on project participants and the dairy value chain in Sofala and Manica. We will examine its influence on project results and key performance indicators outlined in the Performance Monitoring Plan.

Local Security Concerns

During the endline evaluation inception meeting, Venture37 project staff reported that Sofala and Manica had experienced local violence and insecurity related to low-intensity civil war. These attacks had been most frequent on two major roadways (the North/South N1 Highway, and the N6 Highway that links the Sofala and Manica provinces), forcing project personnel to avoid traveling on certain roads at certain times. This limited certain aspects of monitoring data collection, and might have had additional impacts on project beneficiaries. According to the MERCADO Semi-Annual Performance Reports of October 2019 to March 2020 and April to September 2020, these effects included increased costs of inputs, reduced investment appetite, and increased travel costs.

As part of this evaluation, we assessed the effects of this recent violence on project participants and the dairy value chain in Sofala and Manica. We will examine its influence on project results and key performance indicators outlined in the Performance Monitoring Plan.

Cyclone Eloise

In January 2021, Cyclone Eloise landed just north of Beira in Sofala province. The project’s rapid assessment in both Manica and Sofala provinces showed the immediate impact as severe in Sofala province, where all the dairy farmers were affected, principally through loss of livestock, damaged or destroyed infrastructure, as well as economic losses as production fell, products spoiled, and markets could not be accessed. Manica was less impacted by Cyclone Eloise (13 percent of farmers affected) as the storm subsequently weakened. Central Mozambique was already experiencing above-average rainfall and Cyclone Eloise intensified, which exacerbated conditions in both Manica and Sofala provinces. Flooding and prolonged wet conditions added to the economic losses due to disease outbreaks (such as pneumonia and mastitis), lower demand for products, and spoilage due to poor access to markets and power cuts.³³

³⁰ MERCADO Semi-Annual Performance Report, April 2020 – September 2020

³¹ MERCADO Semi-Annual Performance Report, April 2020 – September 2020

³² MERCADO Semi-Annual Performance Report, October 2019 – March 2020

³³ MERCADO Semi-Annual Performance Report, October 2020 – March 2021

SECTION 2. ENDLINE EVALUATION METHODOLOGY

IMPAQ conducted baseline and midterm evaluations of the MERCADO project in 2017 and 2019, respectively. This report details the findings from the endline evaluation conducted in 2021. This section outlines the endline evaluation's data collection methodology and the sources and types of data collected. We include the evaluation's Scope of Work in **Annex E** and IMPAQ's Endline Evaluation Inception Report in **Annex D**.

2.1. Endline Evaluation Methodology

The IMPAQ team conducted a performance evaluation to identify how MERCADO's interventions contributed to the development of a sustainable private-sector driven dairy market system. This approach enabled assessment of the project's Results Frameworks within the context of the dairy value chain, and comparison of the extent to which the strategic objectives of the Results Frameworks were achieved, *given the market system at baseline*. This approach entailed characterizing the different value chain actors—dairy farmers, aggregation and value addition facilities, processors, dairy breeders, input and service providers, student interns, and other stakeholders. IMPAQ used a formative approach to: (1) tie together its inquiries at each level of the value chain into a broad picture of MERCADO's relevance, impact, effectiveness, and efficiency; and (2) examine the sustainability and gender equity of the project's activities. We organized the endline evaluation using a mixed-methods approach, comparing progress on key outcomes over time for project participants—testing hypotheses IMPAQ developed at baseline about the project's relevance, impact, efficiency, and sustainability, with a special focus on gender equality and equity.

We collected quantitative and qualitative data from a broad population of dairy value-chain actors and evaluated impacts using a pre-post approach. We administered a longitudinal survey to collect quantitative data from dairy farmers who were beneficiaries of the MERCADO project. We also used a repeated cross-sectional semi-structured survey to collect both quantitative and qualitative data from aggregation and value-addition facilities, processors, and dairy breeders. Further, we used focus group discussions (FGDs) and key informant interviews (KIIs) to collect qualitative information from farmers and other value-chain actors—including paravets, lecturers, student interns, retailers, veterinary shops, feed suppliers, government, among other stakeholders.

The endline evaluation builds off the midterm evaluation results by providing longitudinal data and comprehensive documentation of the Beira Corridor's dairy market system—especially, as noted, after incorporating the effects of COVID-19, Cyclone Idai, and local security concerns on project implementation and achievement. We identified lessons learned through the duration of the project, emphasizing identification of key strategies, methodologies, and other factors that contributed to and/or inhibited project success, focusing on areas that could be applied to similar programming elsewhere.

2.1.1 Endline Evaluation Objectives and Questions

IMPAQ worked with Venture37 to implement the endline evaluation of the MERCADO project to measure progress made in achieving the intended outcomes presented in the results framework.

The terms of reference (TOR) for the endline evaluation details 11 objectives:

1. Assess whether the project has achieved the expected results as outlined in the Results Frameworks;
2. Assess the relevance, effectiveness, efficiency, impact, and sustainability of project activities;
3. Measure progress from baseline and midterm and assess attribution to the extent possible;
4. Assess how women and men have benefited differently from the project;

5. Identify lessons learned through the duration of the project with an emphasis on identifying key strategies, methodologies and factors that contributed to and/or inhibited success, focusing on areas that could be applied to similar programming;
6. Draw conclusions and provide recommendations to Venture37, USDA, project participants, project partners, and other stakeholders, including the Government of Mozambique and USDA Washington, to strengthen future or similar projects;
7. Assess the effect of the reduction in funding and resultant shortened life of the project;
8. Assess the effect of Cyclone Idai on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
9. Assess the effect of the COVID-19 pandemic on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
10. Assess the effect of security issues on MERCADO project participants, including how security issues have affected both supply and demand of dairy products; and
11. Assess how effectively the project pivoted project activities due to the above issues (reduced funding, Cyclone Idai, COVID-19 pandemic, and security issues).

We present the evaluation questions in Exhibit 3. The focus of the endline evaluation, as noted, was to test the hypotheses developed at baseline relating to the project's relevance, impacts, effectiveness, efficiency, sustainability, and gender equality and equity considerations using a non-experimental design. That is, we compared key outcomes for the various project participants across time. We present evaluation questions, along with their data collection methods and data sources, in **Annex C**.

Exhibit 3. Evaluation Criteria and Questions

Evaluation Criteria	Evaluation Question
Relevance	Do the results framework, assumptions, project design, and project activities meet the needs of the participants and local conditions in Mozambique's Manica and Sofala provinces?
	How well aligned are MERCADO's strategy and activities with the development goals, objectives, and strategies of USDA, the US government, and the Mozambican government?
Impacts	What impacts are the project activities having on the project participants, both positive and negative, especially in relation to the expected results and strategic objectives?
	How has the project-provided training impacted the knowledge and uptake of improved agricultural techniques, farm management practices, and post-harvest handling?
	How has the use of improved practices affected agricultural productivity (measured through liters of milk per day, number of days of lactation, and calving interval for dairy and measured through yield for forage)?
	To what extent has increased access to input suppliers affected the uptake of improved agricultural techniques, farm management practices, post-harvest handling, and use of improved infrastructure for farmers?
	How has training in improved safety and quality affected the rate of rejection of milk at the aggregation level?
	How have project activities influenced total value and quantity of milk and milk product sales?
	How is value captured distributed across different milk market system actors? What can be done to improve value capture and profitability of the actors?
	To what extent has access to finance affected the growth of farmer dairy businesses?
	To what extent has access to finance affected uptake of improved processing techniques, quality standards, and improved infrastructure for processors?

Evaluation Criteria	Evaluation Question
	What internal and external factors have influenced the ability of the project to meet expected results and targets?
	How did the reduction in funding and shortened life of project, Cyclone Idai, the COVID-19 pandemic, and security issues influence the program's results?
Effectiveness	To what extent are the project targets and outcomes likely to be achieved by the end of the project?
	What key successes should be replicated or key improvements should be made to the implementation to maximize the results?
Efficiency	Were the resources and activities provided by the project carried out in a timely manner and with effective use of resources?
	How well has the project been managed and monitoring and evaluation data been used to make programmatic decisions?
Sustainability	Which project activities and benefits are likely to be sustained or not sustained past the project lifespan, and why?
	What exit strategy has the project put into place to ensure the sustainability of the project outcomes?
Gender equality and equity	How has the project addressed the constraints faced by women in the dairy sector?
	What has the project done to ensure participation of both men and women? What could the project have done better?
	How do the outcomes of the project differ between men and women? What could the project have done differently to ensure that equal benefits accrued to both women and men?

2.1.2 Data Sources

At endline, IMPAQ started by conducting a document review of all relevant documents from Venture37. The documents included semi-annual performance reports submitted to USDA, special studies conducted by Venture37, and other relevant documents. This review informed development of both the quantitative and qualitative instruments.

IMPAQ then collected quantitative data through a survey of dairy farmers in April 2021. We complemented these quantitative farmer-level data with qualitative data collected from farmers in FGDs. We also conducted a semi-structured survey with other value-chain actors, such as aggregation and value-addition facilities (cooperatives), processors (including microprocessors), and the single breeder in the project. These semi-structured surveys included both close-ended (quantitative) questions and open-ended (qualitative) questions. In addition, we conducted FGDs with farmers and KIIs with stakeholders (project staff, government representatives, paravets, student interns, lecturers, retailers, veterinary shops, and feed suppliers). The FGDs and KIIs helped contextualize stakeholder insights into the dairy sector. We tailored all quantitative and qualitative data collection instruments to each stakeholder's type of project involvement. We discussed with Venture37 any modifications needed in data collection instruments after the midterm to account for changes in project implementation.

All data collection instruments and interviews were designed initially in English and subsequently translated to Portuguese. At the start of the survey, data collection personnel selected the most appropriate language on their tablet computers for each respondent.

2.1.3 Sampling and Data Collection

Quantitative Data Collection

Quantitative data collection for the baseline and midterm evaluations was conducted in February 2017 and July 2019, respectively. The main data sources for the endline quantitative data collection collected

in April 2021 were the farmer survey and the semi-structured surveys with aggregation and value-addition facilities and processors.

Farmer Survey. We administered the full farmer survey only to farmers who had one or more live dairy cows at the time of the endline data collection. Farmers who did not have live dairy cows were administered only the survey’s geographic and demographic questions.

We summarize in Exhibit 4 the target and actual numbers of respondents for the quantitative data collection from farmers. IMPAQ aimed to collect data from all dairy farmers supported by the MERCADO project at midterm. Out of a target sample size of 259 farmers, we completed surveys with 255 farmers, meeting 98 percent of the target. We present in Exhibit 5 the response rate by province and district.

Semi-structured surveys. In Exhibit 4, we also detail sample sizes for the quantitative data collection for the semi-structured surveys of cooperatives, processors, and breeders. A perfect match between baseline, midterm, and endline respondents did not exist. Further, as detailed in IMPAQ’s Midterm Evaluation Report, the survey instrument underwent many changes from baseline to midterm. Therefore, for cooperatives, processors, and breeders, we only provide baseline vs. endline comparisons for the key performance indicators, and midterm vs. endline comparisons for other outcomes. For cooperatives, processors, and the breeder we met 100 percent of the target.

Exhibit 4. Quantitative Data Sources

Stakeholder Type	Data Collection Method	Target Sample Size	Actual Sample Size
<i>Dairy farmers</i>	Panel data survey	259 (Sofala: 128; Manica: 131)	255 (Sofala: 124; Manica: 131)
<i>Aggregation & value-addition facilities (Cooperatives)</i>	Semi-structured survey (quantitative component)	6 (Sofala: 3; Manica: 3)	6 (Sofala: 3; Manica: 3)
<i>Processors (including microprocessors)</i>	Semi-structured survey (quantitative component)	14 (Sofala: 6; Manica: 8)	14 (Sofala: 6; Manica: 8)
<i>Breeder</i>	Semi-structured survey (quantitative component)	1	1

Note: Actual sample size is defined as the number of completed surveys.

Exhibit 5. Farmer Surveys Completed, by Province and District

District and Province	Sample	Completed	Not Completed
Nhamatanda district	2	2	0
Dondo district	39	37	2
Beira district	87	85	2
Total: Sofala Province	128	124	4
Gondola district	63	63	0
Macate district	29	29	0
Sussundenga district	13	13	0
Vanduzi district	22	22	0
Chimoio district	4	4	0
Total: Manica Province	131	131	0
Total number	259	255	4
Total percentage of sample	100%	98.46%	1.54%

Qualitative Sampling and Data Collection

Qualitative data collection for the baseline and midterm evaluations was conducted in February 2017 and July 2019, respectively.

At endline, we complemented the quantitative data with qualitative data collected from a range of stakeholders in April 2021. We worked closely with local Venture37 staff to select farmers to ensure representation from different scales of production and districts, and held separate women-only FGDs. In addition, we collected qualitative data from a large dairy farm in Mozambique, which is also involved in processing and breeding activities. Further, we interviewed ancillary beneficiaries, such as lecturers from universities where the project had done outreach, as well as other key stakeholders involved in project implementation and development of policy and regulatory frameworks (including project staff and government representatives). We also interviewed input and service providers (including community livestock workers/paravets [CLWs], veterinary shops, and feed suppliers). We selected retailers to interview covering different scales and types of sales. Finally, we purposively selected project beneficiaries that ensured representation of gender and location. Qualitative data collection occurred concurrently with the administration of the farmer survey, in April 2021. In **Exhibit 6**, we summarize respondents for the qualitative data collection.

Exhibit 6. Qualitative Data Sources

Stakeholder Type	Data Collection Method	Sample Size
Aggregation & value-addition facilities (cooperatives)	Semi-structured survey (interview component)	6 (Sofala: 3; Manica: 3)
Processors (including microprocessors)	Semi-structured survey (interview component)	14 (Sofala: 6; Manica: 8)
Breeder	Semi-structured survey (interview component)	1
Dairy farmers	Focus group discussions	10 groups (Sofala: 4 groups; Manica: 6 groups) plus one KII with large producer in Manica
Paravets	Key informant interviews	6 (Sofala: 3; Manica: 3)
Student interns	Key informant interviews	11 (Sofala: 7; Manica: 4)
Lecturers	Key informant interviews	6 (Sofala: 3; Manica: 3)
Retailers	Key informant interviews	4 (Sofala: 2; Manica: 2)
Veterinary shops	Key informant interviews	5 (Sofala: 2; Manica: 3)
Feed suppliers	Key informant interviews	2 (Sofala: 2)
Government representatives	Key informant interviews	6 (national and provincial levels)
Project staff and partners	Key informant interviews	5
Funder (USDA)	Key informant interviews	USDA: 2

2.1.4 Data Collection Instruments

We designed quantitative and qualitative instruments to answer research questions for each stakeholder type's involvement in the project or dairy sector, and to address overarching issues relating to the project and its activities in the sector. Please see ANNEX F for a list of all data collection instruments.

Farmer Survey

IMPAQ modified the midterm panel farm survey to collect data from all current dairy farmers in the endline evaluation survey. The structured survey collected data on household socio-demographic characteristics and dairy activities, including production and sale of milk. Data was also collected on the effects of Cyclone Idai, COVID-19, and local security issues, as well as engagement with the MERCADO project, production practices, finance and investments, and animal health services. The farmer household

survey included questions on intra-household distribution of roles and responsibilities in dairy production, allowing nuanced analysis of gender dynamics over the life of the project.

Semi-Structured Surveys

Each semi-structured survey included a component to collect basic business information; a quantitative component to collect data on procurement and sales, finance and investments, training, milk quality, labor, equipment, and record keeping; and a qualitative component using interviews to obtain information on respondents' perspectives on the dairy value chain and their involvement with the project. The one breeder in our sample was administered a KII at baseline, and at midterm and endline a semi-structured survey.

Key Informant Interviews

IMPAQ conducted KIIs with CLWs, student interns, lecturers, service input providers, and other stakeholders (including government representatives, project staff, and retailers). The KIIs included questions about respondents' background, current role in the dairy value chain, perceptions of critical issues in dairy value chain development, viewpoints on MERCADO's strategy and activities, and other specific issues relevant to each type of respondent. The KIIs with CLWs asked about the impacts and challenges of providing services to farmers. For student interns, we assessed their understanding of, and perspective on, the potential for a career in the dairy industry, and documented their experiences with their internships and the MERCADO dairy curriculum. For lecturers, we asked about their experience teaching the MERCADO curriculum and integrating the dairy module into the current livestock and veterinary curriculum, how it compares to what they previously were using, and any suggestions for curriculum improvement. We also asked retailers about any consumer changes in demand for local dairy products.

Endline Evaluation Key Informant Interview Themes

- Impact of Cyclones Idai and Eloise, COVID-19, and local security issues on the dairy sector
- Impact of reduction in project funding and timeline
- Current role in the dairy value chain
- Perceptions of critical issues in the dairy value chain
- Perceived internal and external factors influencing project activities
- Effect of MERCADO project activities on gender constraints faced by women
- Sustainability of project activities and outcomes
- Extent to which activities have efficiently used resources

For project staff, we included questions related to the effectiveness and efficiency of plans for sustainability of activities and outcomes after the project ended, and the effects of reducing project funding and timeline. The KIIs with government representatives explored the relationship between the program and the government, progress towards relevant dairy value chain legislation and regulation, and if and how the government was helping strengthen the dairy sector in Mozambique.

Endline Evaluation Focus Group

Discussion Themes

- Impact of cyclones Idai and Eloise, COVID-19, and local security issues on daily activities
- Participation in the dairy value chain
- Successes and challenges dairy farmers faced—financial, infrastructural, technical
- Plans for future work in dairy/agriculture
- Effect of MERCADO training activities on post-harvest handling, farm management, agricultural productivity, safety and quality practices
- Perceived internal and external factors influenced project activities
- Effect of MERCADO project activities on gender constraints faced by women
- Sustainability of project activities

Focus Group Discussions

IMPAQ conducted FGDs with a sub-sample of farmers, where we asked about their experiences with the MERCADO project—including farming practices, successes and challenges, milk productivity and sales, and unexpected outcomes. These FGDs included a discussion of barriers for women in the dairy sector.

2.1.5 Data Analysis

We analyzed qualitative and quantitative data separately and then integrated the findings to provide a comprehensive response to the endline research questions.

Quantitative Data Analysis

Based on discussions with Venture37, to analyze quantitative data from farmers we defined two sample types:

- **Matched sample.** There were 122 farmers with dairy cows at baseline, midterm, and endline. We exclude the one farmer with 154 cows, an extreme outlier who was administered only an abridged version of the survey at baseline. We exclude this farm from the main analysis, including it only in calculating the main performance indicators in **Annex A**.
- **Unmatched sample.** This sample pools the 72 farmers present at either: (1) both midterm and endline, (2) baseline and endline, or (3) only endline.

The **122 farmers** who were matched across all three data collection rounds are the primary sample of interest (hereafter the *matched sample*). The secondary sample of interest is the **72 farmers** who were in either one or two data collection rounds (hereafter the *unmatched sample*).

To analyze quantitative data from farmers and other dairy market actors, we used descriptive statistics such as counts, tabulated proportions, and means. We also looked for common trends and patterns in the data. As overall differences presented themselves, we disaggregated and reported the descriptive

statistics to reveal differences among project stakeholders based on factors such as gender, scale of operation, and location.³⁴

Additionally, we disaggregated the data by subgroups as required by the Performance Monitoring Plan indicators. We also leveraged the availability of longitudinal panel data for dairy market actors and project beneficiaries to enable analysis of project outcomes before and after the intervention for the same actor. Finally, we calculated indicator values of key performance indicators and disaggregated them as required in the Performance Monitoring Plan.

Finally, because we can examine only trends or changes in outcomes without a comparison group, we are unable to attribute the findings *causally* to the MERCADO project. That is, non-project related factors, such as other projects or government programs in the region, are also reflected in (i.e., correlated with) our findings that we are cannot disentangle from the true impact of MERCADO itself. We compensate for this limitation to the extent possible by using qualitative methods (see below), which can provide further insights into the relationship between different MERCADO practices and desired outcomes (such as quality and sales).

Qualitative Data Analysis

Our qualitative analysis identifies critical themes and issues that emerge during qualitative data collection. To analyze the interview and focus group data efficiently, impartially, and consistently, we used a structured summary form that identifies key themes and maps them to the evaluation questions outlined in **Annex C**. We synthesized emerging qualitative results using pattern analysis methods that identify themes in responses. Where relevant, we differentiated results by value-chain stakeholder type, as well as by respondents' location.

Integrating Qualitative and Quantitative Data

The evaluation team triangulated the qualitative and quantitative analyses to address the evaluation questions, comparing key findings across both types of data. To overcome any deficiencies in the data, the team analyzed each type of data separately, as described above, and then identified whether and how the two sets of findings coincide. Where discrepancies existed, we considered plausible reasons. The team also used qualitative data, whenever possible, to provide contextual information to help interpret the quantitative results. The process of examining the qualitative and quantitative findings in relation to one another figured centrally in the development of comprehensive lessons learned and recommendations—even though the concurrent collection of quantitative and qualitative data limited the extent to which the quantitative findings can be contextualized.

We also incorporated a gender-sensitive lens in the endline evaluation—identifying critical gender concerns during evaluation design, data collection, and analysis—to ensure gender is an integral part of the MERCADO endline evaluation.³⁵ Through the quantitative farm survey and the FGDs, we focused on intra-household distribution of roles and responsibilities at the farm level, and how the MERCADO project activities affected those roles in decision-making about, for example, control over milk production and sales revenue. We also explored the perspectives of women and men about the dairy market and related value chain, as well as the constraints and opportunities faced specifically by women.

³⁴ We did not disaggregate by scale for the unmatched sample farmers, since the sample sizes became too low for reliable analysis.

³⁵ These include: (1) ensuring that evaluation questions asked specifically about gender inclusiveness, if appropriate; (2) disaggregating all data by gender, analyzing for gender differences, and reporting on the findings; and (3) keeping survey and interview work sensitive to women's schedules and availability to participate.

2.2. Field Implementation

IMPAQ's local data collection team organized and implemented field data collection operations. Following approval of the endline inception report and data collection instruments by Venture37, IMPAQ transmitted the endline approved instruments and protocols to the data collection team for translation into Portuguese, programmed the tablet computers we used for data collection for the farmer survey, and reviewed all instruments. Travel restrictions due to COVID-19 prevented IMPAQ's home office staff from traveling to Mozambique for enumerator training. To ensure quality control, IMPAQ's home office staff joined the enumerator training remotely. Additionally, IMPAQ's subject matter expert was present in-person throughout the training and pilot testing of the data collection instruments.

2.2.1 Enumerator Training

We recruited enumerators from local agricultural universities, and from the data collection firm's existing pool of enumerators with specific experience in dairy farm data collection. Due to COVID-19 restrictions, the enumerator training and launch of data collection was conducted separately in the two provinces. In Manica, enumerator training and pilot testing took place in Chimoio during March 30–April 4, 2021. In Sofala, enumerator training and pilot testing took place in Beira during April 10–April 15, 2021. Enumerator training in both provinces consisted of sessions to introduce the enumerator team to the evaluation framework and implementation context, including:

- Training on dairy production and marketing concepts reflected in the questionnaires;
- Section-by-section review of the data collection instruments and in-class practical application using tablets;
- Members of enumerator pairs practicing the farmer survey with each other;
- Endline session during with enumerators addressing any remaining questions before commencing fieldwork.

The enumerator training and pilot testing included all safety protocols for COVID-19 including: (1) ensuring all participants wore masks at all times; (2) six-foot distance maintained among participants at all times, inside and outside the training room; and (3) adequate supplies of handwashing stations and/or hand sanitizer always at the training venue.

2.2.2 Logistics

Our local data collection partner used 10 quantitative survey enumerators, two FGD facilitators, two KII facilitators, and one team leader. As mentioned above, due to COVID-19 restrictions in-country, the enumerator training and data collection launch were conducted separately in the two provinces. Data collection in Manica spanned April 8, 2021–April 14, 2021. Data collection in Sofala spanned April 17, 2021–April 25, 2021. The 10 enumerators were divided into two five-member teams, each of which had a supervisor who provided data quality control. IMPAQ's subject matter expert led oversight of field data collection while consulting with IMPAQ, to ensure a consistent technical approach and coordination. IMPAQ's subject matter expert also conducted KIIs with select value-chain respondents (including project staff, partners, and government officials).

Venture37 staff were instrumental in connecting the IMPAQ team to nearly all respondents at endline. Venture37 extension workers worked with the data collection team to locate and contact the farmers, with the assistance of Venture37 provincial coordinators. The data collection team also utilized the support of CLWs to make the initial introductions and set up interview dates and times with respondents.

Throughout enumerator training, pilot testing, and data collection, strict COVID-19 protocols were followed including, but not limited to:

- No more than four people in a car (three enumerators plus one driver). Thus, enumerators were separated into three ‘pods,’ who always traveled together in the same van throughout data collection to help isolate viral spread should somebody contract COVID-19.
- Enumerator temperature checks each morning before entering the vehicle. In addition to temperature checks, the fieldwork team leaders were responsible for noting whether anyone, including enumerators or their supervisors, was displaying symptoms that could be linked to COVID-19. If they exhibited cough, fever, runny nose, headache, nausea, sore throat, body aches, or shortness of breath, they were asked to remain at the accommodation site, or if symptoms persisted, to take a COVID test.
- Vehicle windows open at all times to mitigate the possibility of spreading COVID-19 during travel when distancing was not feasible. Everybody in the vehicle was required to wear a mask at all times.
- Enumerators having their own rooms when they were required to stay overnight.
- Interviews conducted outside, or indoors with a maximum of four individuals in a single room, following strict social distancing guidelines.
- Long distances between enumerators to keep respondents focused and the interviews both private and naturally at a safe social distance from each other.
- Enumerators assigned a specific tablet to collect data, to prevent tablets from becoming transmission vectors. Additionally, each enumerator was responsible for disinfecting his/her tablet regularly using the supplies provided, with special attention after each farmer visit.
- Enumerators providing a mask to the respondent before the interview, with both required to wear masks throughout the interview. The enumerators also had hand sanitizers, which they and the respondent used before each interview.

2.2.3 Data Collection Challenges

The following challenges encountered during endline data collection might have affected the number of respondents the team reached and/or the quality of the data the team collected.

Lack of Field Testing

As discussed with Venture37 prior to data collection, because all dairy farmers in the region were beneficiaries either of MERCADO or of a previous Venture37 project, we did not field test the farmer survey with region farmers prior to data collection. Field-testing allows the evaluation team to validate the surveys by checking for flow, reliability of translation, local context, and understanding question wording. Not field testing the surveys resulted in responses that were sometimes incomplete or inaccurate. We mitigated this to the extent possible by using the first day of data collection as a limited field test, after which the team made minor updates to the instruments based on feedback from the enumerators. In addition, enumerators practiced with each other during the enumerator training and held daily debrief meetings with supervisors to review any questions that had indicated confusion.

Survey Fatigue

Another challenge was survey fatigue. The length of the survey could have potentially cause fatigue that contributed to incomplete or inaccurate responses. For the semi-structured surveys, for example, survey fatigue led to short and in some cases no responses to the open-ended questions asked toward the end of the survey. Other questions required respondents to make calculations, which could lead to internally inconsistent responses. A good example is the questions regarding utilization of milk production in liters by type (milk retained for consumption; lost; or sold to cooperatives, local processors, or other buyers). The majority of farmers gave answers to the specific types of production that did not sum to the total milk production number they themselves provided.

Difficulties in Collecting Cost and Revenue Data

One of the major problems was collecting confidential information from businesses related to costs and revenues. Cooperatives and processors were hesitant to provide certain types information. One plausible reason might be that, in such a small-scale market, they needed to protect themselves from their competitors. As we note in the quantitative findings for example, this lack of trust resulted in non-responses to questions regarding volume and value of milk procurement and milk sales—which has major implications for the reliability of our cost and revenue findings, particularly given such small numbers of cooperatives and processors to begin with.

Delay in Starting Data Collection Due to Cyclone Eloise and COVID-19

External events presented yet additional challenges to endline data collection. First, data collection was originally scheduled for February 2021, but was postponed due to Cyclone Eloise. Second, data collection was pushed for a few weeks for a second time due to strict COVID-19 restrictions by the Mozambican government. Finally, when one of the research team workers had a positive COVID-19 test prior to data collection, we followed strict COVID-19 protocols as described above, and postponed the enumerator training, pilot testing, and data collection for a third time—until all team members had negative COVID-19 tests and back-up team members were assured, if needed to proceed.

SECTION 3. QUANTITATIVE RESULTS (TRIANGULATION WITH QUALITATIVE FINDINGS)

This section presents the main quantitative findings from dairy farmers and the other key dairy sector actors (cooperatives, processors, and breeders). The main objective of the endline quantitative data collection with *dairy farmers* was to gather data on herd composition, production practices, animal health services, volume and value of milk production and sales, engagement with MERCADO, lingering impacts of Cyclone Idai, impacts of COVID-19, and impacts of the low-intensity civil war's local security conflict. The main objective of the endline quantitative data collection with *cooperatives, processors, and the breeder* was to document the state of these key dairy actors at the end of the project, examining trainings received, practices, and technologies. For each business, we also collected data on procurement volumes and costs; record keeping; product safety and quality practices; value-added services, including storage, processing, and packaging; volume and value of sales; trainings; lingering impact of Idai; and the impacts of COVID-19, and the local security conflict. We present in **Section 3.1** the detailed quantitative findings from the farmer sample. We present in **Section 3.2** the quantitative findings from the cooperatives, processors, and the breeder.

3.1 Quantitative Results from Farmer Sample

Similar to the midterm evaluation, three important caveats exist for the analysis of data from the farmer survey during the endline evaluation. First, for most outcomes that include comparisons between the baseline and endline evaluations, we report values disaggregated by farm scale for farmers we could match across all three rounds (baseline, midterm, and endline). Since farm scale is endogenous (that is, affected by the MERCADO project), for comparisons between the baseline and endline evaluation, we defined farm scale as the baseline level of farm scale and kept that constant. This implies that, if farmers switched farm scale (e.g., medium-scale farmers at baseline became small-scale farmers at midterm or small-scale farmers at baseline became medium farmers at midterm) we consider their scale at baseline to be their 'farm scale' in all three rounds. In this way, we are able to capture any changes the MERCADO project had on farm scale. Second, our survey instrument captured information about dairy cows and other dairy cattle in general. We did not explicitly ask respondents to give information only about cattle given to them by Venture37. Many medium- and large-scale farmers had cows for which Venture37 did not facilitate access. Consequently, as noted in **Section 1**, we were unable to causally link changes in key outcomes directly to inputs given by Venture37. Finally, for many outcomes, sample sizes were low because of non-response—implying that all findings in this section must be interpreted as exploratory rather than definitive.

The rest of this section is organized as follows. We discuss in **Sections 3.1.1–3.1.4** the distribution of farms across the three evaluation rounds, income sources, herd composition, and record keeping. We also explore dairy farm attrition across the three rounds. We explore farmer practices on grazing, forage, feed, supplements, housing, and water allocation in **Section 3.1.5**. We also discuss breeding methods for dairy cattle. In **Section 3.1.6**, we examine animal health practices, including animal health testing, vaccinations, and ease of access to health services. We discuss the engagement of dairy farmers with the MERCADO project in **Section 3.1.7**. In **Section 3.1.8**, we examine milk production, sales, and quality issues. We explore the impacts of external shocks in **Section 3.1.9**. Finally, we examine in **Section 3.1.10** women's participation in dairy farming. All values reported are for the 12 months from February 1, 2020, to January 31, 2021; we disaggregate by dry (May–October 2020) and rainy (November 2019–April 2020) season wherever possible.

3.1.1 Distribution of Farms

We begin by presenting the distribution of farms by their scale of operation across all three rounds in Exhibit 7. We define farm scale throughout this report by number of dairy cows:

- *Small-scale farmers:* one to three dairy cows
- *Medium-scale farmers:* four to 19 dairy cows
- *Large-scale farmers:* 20 or more dairy cows

There were 195 farmers during data collection for the endline evaluation compared to 183 at midterm and 317 at baseline. Similar to baseline and midterm, dairy production in the Beira corridor continued to be primarily a small-scale enterprise at endline. However, a secular decline occurred in the proportion of small-scale farmers from baseline to endline. During endline data collection, 77 percent of dairy farmers were small-scale farmers with one to three dairy cows, compared to 86 percent at midterm and 94 percent at baseline. A concomitant increase in the proportion of medium-scale farmers occurred, with 19 percent of farmers during endline data collection being medium-scale compared to 6 percent at baseline. We also saw an increase in the proportion of large-scale farmers, with about 4 percent of farmers during endline data collection classified as large compared to less than 1 percent at baseline.

Exhibit 7. Distribution of Farms by Scale

Scale of Farm	Baseline Number of Farms ¹	Baseline % of Farms	Midterm Number of Farms ²	Midterm % of Farms	Endline Number of Farms ²	Endline % of Farms
Small-scale (1–3 cows)	297	93.69%	157	85.79%	151	77.44%
Medium (4–19 cows)	18	5.68%	24	13.11%	37	18.97%
Large (20+ cows)	2	0.63%	2	1.09%	7	3.59%
All farmers with dairy cows	317	100%	183	100%	195	100%

Note: Sample includes all farmers who identified at the time of the survey that they currently owned dairy cows.

¹ Farm scale as defined at baseline

² Farm scale as defined at midterm and endline

While throughout the report we use the definition of farm scale as defined above, in Exhibit 8 we present the distribution of farms using an alternative definition of farm scale at the request of Venture37. In the alternative definition, we defined small-scale, medium, and large farmers using the ‘productive potential’ of a farmer’s herd. Thus, we included dairy cows *and* adult heifers in categorizing farmers. For instance, small-scale farmers were defined as those who owned between one to three cows and heifers combined. Under the alternate definition, the proportion of small-scale farmers declined from 91 percent at baseline to 61 percent during endline data collection, and the proportion of medium-scale farmers increased from 8 percent at baseline to 34 percent during endline data collection.³⁶

Exhibit 8. Distribution of Farms by Alternate Definition of Farm Scale

Scale of Farm ³	Baseline Number of Farms ¹	Baseline % of Farms	Midterm Number of Farms ²	Midterm % of Farms	Endline Number of Farms	Endline % of Farms
Small-scale (1–3 cows and adult heifers)	290	91.48%	140	76.50%	119	61.03%
Medium (4–19 cows and adult heifers)	24	7.57%	37	20.22%	67	34.36%
Large (20+ cows and adult heifers)	3	0.95%	6	3.28%	9	4.62%
All farmers with dairy cows	317	100%	183	100%	195	100%

Note: Sample includes all farmers who identified at the time of the survey that they currently owned dairy cows.

¹ Farm scale as defined at baseline

² Farm scale as defined at midterm and endline

³⁶ The findings in this table should be interpreted with caution, however. This is because farmers were asked about cow and heifer ownership separately. Since in Portuguese the term for cows is understood as including both cows and heifers, farmers could have reported adult heifers twice – once when they reported their total number of cows, and once when they reported their total number of heifers. Thus, the findings in this table have measurement error because of the potential double counting.

³ The definition of farm scale suffers from measurement error because of double counting of heifers

We present in Exhibit 9 the sample distribution by farm type: household, organization, and firm.³⁷ The differentiation among these types has important implications, because it affects the professionalization and economics of production. We included only farmers that completed surveys in this exhibit ($N = 255$). Nearly all small-scale farms (94 percent) were household farms. Around 68 percent of medium-scale farms were household farm, with 14 percent run as organizations and 19 percent as commercial firms.

Exhibit 9. Distribution of Farms by Type at Endline Evaluation

Farm Type	Small-scale	Medium	Large	Total
Household	94.04%	67.57%	57.14%	89.80%
Organization	1.99%	13.51%	0%	3.14%
Firm	3.97%	18.92%	42.86%	7.06%
Total	100%	100%	100%	100%
N	151	37	7	255

Note: The sample includes farmers who had dairy cows during the endline evaluation regardless of whether we matched them to midterm or baseline farmers. We define farm scale as the level during the endline evaluation.

The total number of beneficiaries of the MERCADO project at baseline was 524.³⁸ The total number of project beneficiaries at midterm was 285, and at endline was 259. This included farmers who had been in the project since baseline and farmers who joined at different points in time after baseline. There was an overall reduction in the project beneficiaries from baseline to endline for two reasons. First, as explained by project staff, this reduction in the number of beneficiaries was in line with a major goal of MERCADO—to focus project activities on fewer farmers who showed a greater interest and capacity to eventually grow into medium- or large-scale farmers—thus ensuring a greater chance of sustainability after Venture37 no longer provided support. The second reason for a reduction in project beneficiaries was a reduction in the farmers who no longer had dairy cows from baseline to endline. In **Exhibit 10**, we compare the proportions of farmers who no longer had dairy cows at baseline, midterm, and during the endline evaluation, respectively. At baseline, 127 farmers (29 percent) did not have dairy cows. At midterm, 75 farmers (29 percent) did not have dairy cows. Finally, at endline, 60 farmers (24 percent) did not have dairy cows.

Exhibit 10. Farms That No Longer Had Dairy Cows

Dairy Cow Status	Baseline Number of Farms	Baseline % of Total Farms	Midterm Number of Farms	Midterm % of Total Farms	Endline Number of Farms	Endline % of Total Farms
No longer have dairy cows	127	28.60%	75	28.85%	60	23.53%
Never owned dairy cows	-	-	2	0.77%	0	0%
Currently owned dairy cows	317	71.40%	183	70.39%	195	76.47%
Total	444	100%	260	100%	255	100%

Note: Totals represent the number of completed surveys during all three rounds of data collection.

3.1.2 Matching Respondents Across Three Data Collection Rounds

In **Exhibit 11**, we present the extent of matching between respondents across all three data collection rounds who had at least one dairy cow. As noted, we defined two sample types:

- **Matched sample:** a total of 122 farmers with dairy cows at baseline who still had dairy cows at midterm. This is the primary sample of interest.

³⁷ 'Organization' could include larger farms, such as schools and orphanages operating as dairy farms. A firm refers to a commercially oriented farm enterprise.

³⁸ Exhibit 4, MERCADO Baseline Evaluation Report. IMPAQ International. 2017.

- **Unmatched sample:** a total of 72 farmers who were in either one or two data collection rounds. Specifically, we include farmers who were present at: (1) both midterm and endline data collection rounds, (2) baseline and endline data collection rounds, and (3) the endline data collection round. This is the secondary sample of interest.

Exhibit 11. Matching Farmers between Three Data Collection Rounds

Scale of Farm	Baseline Farmers with Dairy Cows ¹	Midterm Farmers with Dairy Cows ²	Endline Farmers with Dairy Cows ³	Farmers with Dairy Cows in All Three Rounds	Unmatched Sample at Endline with Dairy Cows ⁴
Small-scale	297	157	151	102	49
Medium	18	24	37	15	22
Large ⁴	2	1	6	5	1
Total	317	182	194	122	72

¹ Farm scale as defined at baseline

² Farm scale as defined at midterm

³ Farm scale as defined at endline

⁴ Includes farmers who were present at: (1) both midterm and endline data collection rounds, (2) baseline and endline data collection rounds, and (3) finally farmers only at endline

3.1.3 Main Income Sources

We report income sources of dairy farmers, disaggregated by farm scale, for the matched sample in **Exhibit 12**. For the matched sample, farm scale is defined as the baseline level. Matched large farmers are not included in this table, because no matched large farmer responded to this question at endline. The last column shows income sources for the unmatched sample. We do not disaggregate by scale for the unmatched sample and only present overall numbers, because the sample sizes of farmers who responded to this question were too low for reliable measurement. We mark statistically significant differences between baseline and endline by asterisks. Given the low sample sizes in many cases, differences between baseline and endline that are large in absolute magnitude are not necessarily statistically significant. *Note that we restrict use of the terms ‘significant’ and ‘significance’ to mean statistical significance. We also report some differences that are considerable but not significant due to small sample sizes.*

For the matched sample, we see a significant decline (at the 1 percent level) in the proportion of small-scale farmers for whom dairy farming was the primary source of income (from 90 percent to 74 percent) suggesting that, for small-scale farmers, dairy farming was not a viable occupation, especially as the project drew to a close.³⁹ There was also a significant decline (at the 1 percent level) in the proportion of small-scale farmers who reported crop production as the main income source (from 90 percent to 61 percent). Small-scale farmers increasingly shifted to daily labor from baseline (16 percent) to endline (34 percent). The proportion of medium-scale farmers for whom dairy farming was the primary source of income was similar between baseline and endline. The proportion of medium-scale farmers for whom daily labor was the primary source of income increased from none at baseline to about 14 percent at endline. Unlike small-scale farmers, more medium-scale farmers reported private sector participation at endline than at baseline. Finally, 73 percent of the unmatched sample reported dairy farming their primary source of income. The second most important source of income for these farmers was crop production, at 58 percent. For around 40 percent of the unmatched sample, other livestock was the primary source of income, for another 30 percent the primary source of income was the private sector.

³⁹ This was recognized in the previous project, MDDP, and was one of the main reasons MERCADO aimed to scale up to medium and large herds.

Exhibit 12. Income Sources by Farm Scale

Primary Income Source ^{1,2}	Small-scale		Medium		Unmatched Sample
	Baseline	Endline	Baseline	Endline	
Dairy farming	89.62%	74.47%***	100%	100%	72.73%
Other livestock	19.81%	22.34%	53.85%	42.86%	40.00%
Crop production	89.62%	60.64%***	69.23%	28.57%*	58.18%
Fisheries	1.89%	3.19%	7.69%	0%	5.45%
Government	15.09%	23.40%	23.08%	14.29%	21.82%
Private sector	12.26%	18.09%	23.08%	28.57%	29.09%
Daily labor	16.04%	34.04%***	0%	14.29%	25.45%
Trade/shopkeeper	25.47%	17.02%	23.08%	0%	18.18%
Social support	8.49%	17.02%*	15.38%	0%	9.09%
Forest products	5.66%	5.32%	7.69%	0%	5.45%
Other	10.38%	11.70%	7.69%	28.57%	10.91%
N	106	94	13	7	55

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows and who responded to the current income questions. We allowed multiple responses, so responses can add up to more than 100 percent. The sample sizes differ between baseline and endline because of different rates of non-response. Since farm scale is endogenous (i.e., the MERCADO project can affect it), we define farm scale as the baseline level of farm scale and keep that constant.

¹ Given the low sample sizes in many cases, differences between baseline and endline may not be statistically significant.

² The two large farmers from baseline who matched to endline did not respond to this question and are excluded from this table.

3.1.4 Herd Composition and Record Keeping

We report the herd composition of project beneficiaries in **Exhibit 13**.

For the matched sample, the average herd size of small-scale farmers at endline was 3.67 cattle, compared to 2.13 cattle at baseline--including, on average, one dairy cow (a significant increase at the 1 percent level). For medium-scale farmers, the average herd had 42.21 cattle at endline compared to 18.71 at baseline. For the large farmers in our sample there was no change from baseline to the endline. For the unmatched sample farmers, the average herd size was 7.0 dairy cattle, including 3.0 dairy cows. FGDs revealed that, although the average herd size for small-scale farmers increased, most farmers were still susceptible to shocks, including disease, natural disasters and market fluctuations. For example, many reported that animals died due to Cyclones Idai or Eloise. While some increased their herd size to transition from small-scale to medium-scale farmers, most others still wanted to increase their herd size to increase milk production, sales, and profits. Project staff agreed with the focus on transitioning farmers from small-scale to medium-scale to promote sustainability. In addition to cyclones Idai and Eloise, project staff said there were import restrictions due to foot-and-mouth disease in South Africa, which led to delays in importing cattle to Mozambique and in increasing herd sizes for farmers, meaning that many heifers were provided to farmers near the end of the project and may not have given birth yet when the survey was conducted.

It had a positive impact because we started as small-scale producers and became medium producers, the herds increased.

-Farmer, Manica

Finally, in terms of pure-bred and cross-bred cows, while both types of cows increased, the increase in farmers owning cross-bred cattle was larger for both small-scale and medium-scale farmers (see **Exhibit 15**). During FGDs, farmers also shared that they saw increased mortality with pure-bred cattle and preferred cross-bred cattle as healthier and more resilient. This was supported by the breeder, who

reported that cross-bred cattle had the greatest demand for purchase, for example, the cross of Senepol and Jersey cattle breeds.

Exhibit 13. Herd Composition by Farm Scale

Cattle Type ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Bulls	0.19	0.39***	3.50	2.43	2.50	6.50	0.75
Cows	1.11	1.52**	8.07	24.71	26.50	18.50	3.13
Heifers	0.31	0.90***	3.14	7.43	14	6.50**	1.76
Female calves	0.52	0.44	4.00	5.00	3.50	8.50	0.71
Male calves ³	N/A	0.42	N/A	2.64	N/A	4.50	0.51
Total cattle	2.13	3.67***	18.71	42.21	46.50	44.50	6.86
Total pure-breed	2.07	2.78**	13.79	17.21	32.50	12.50	4.17
Total cross-breed	0.07	0.88***	4.93	25.00	14.00	32.00	2.69
N	106	106	14	14	2	2	72

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant.

¹ Given the low sample sizes in many cases, differences between baseline and endline may not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

³ Respondents were asked about number of male calves only at midterm and endline.

Exhibit 14 We show the extent of record keeping by farmers in **Exhibit 14**. The sample was restricted to farmers at midterm and endline, since this question was not asked at baseline. Almost all farmers kept at least one type of record of dairy activity. Production records were the most common type of record kept by farmers of all sizes. There was a significant increase in almost all types of record keeping for small-scale farmers including production, feeding, sales, calving, and health records from midterm to endline. There were also significant increases in farm transactions and registrations of farm visits by small-scale farmers.

Exhibit 14. Farmer Record Keeping

Records ¹	Small-scale		Medium		Large	
	Midterm	Endline	Midterm	Endline	Midterm	Endline
Kept at least one type of record of dairy activity	96.70%	98.90%	100%	100%	100%	100%
Production	85.71%	93.41%*	100%	92.86%	100%	100%
Feeding	49.45%	65.93%**	85.71%	71.43%	100%	0%
Sales	68.13%	89.01%***	92.86%	64.29%*	100%	0%
Calving	72.53%	85.71%**	85.71%	85.71%	100%	100%
Health	57.14%	74.73%**	85.71%	71.43%	100%	0%
Mortality	53.85%	63.74%	85.71%	50.00%**	100%	0%
Daily milk production	74.73%	73.33%	85.71%	85.71%	100%	100%
Allocation of milk to different sources	60.44%	68.00%	64.29%	85.71%	0%	100%
Farm transactions	37.36%	53.33%**	42.86%	85.71%**	0%	100%
Registration of farm visits	45.05%	76.00%***	50.00%	78.57%	0%	100%

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers matched between midterm and endline who identified at midterm that they currently owned dairy cows. Sample includes midterm and endline farmers regardless of whether we matched them to baseline. We allowed multiple responses, so that responses add up to more than 100 percent. We define farm scale as the midterm level.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

3.1.5 Production Practices

All practices identified in this section have been promoted by Venture37 at different stages of program implementation.

Grazing Systems

Exhibit 15 In **Exhibit 15**, we show the types of grazing systems practiced by farmers. Most farmers at baseline had a zero-grazing system (96 percent of small-scale and 79 percent of medium-scale farmers). At endline, the proportion of small-scale farmers who followed a no-graze policy decreased significantly (at the 1 percent level) to 75 percent. Similarly, the proportion of medium-scale farmers at endline who followed no-graze decreased to 43 percent. Previously, Venture37 required that farmers use a no-graze system. Venture37 staff explained that this system works well when land is limited, as it is for many of the small-scale farmers who live closer to the town centers. With respect to free grazing, defined as grazing on common pastures, the proportion of small-scale farmers engaging in free grazing at endline was almost 16 percent, significantly higher (at the 1 percent level) from the baseline proportion of less than 2 percent. There were no significant changes for medium-scale farmers for free grazing. With respect to semi-free grazing, defined as grazing for some portion of the time in enclosed paddocks and some portion of time on open pastures, there was a significant increase for small-scale farmers from less than 1 percent at baseline to 8 percent at endline. There was also an increase in semi-free grazing among medium-scale farmers; however, this increase is not significant.

Exhibit 15. Type of Grazing System for Matched Sample

Grazing System ¹	Small-scale		Medium		Large ²	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
No grazing	96.19%	74.53%***	78.57%	42.86%*	50.00%	0%
If Grazed, Types of Grazing						
Free grazing	1.90%	16.04%***	21.43%	7.14%	50.00%	0%
Semi-free grazing	0.90%	7.55%*	0%	14.29%	0%	50.00%
Paddock grazing	0%	1.89%	0%	35.71%**	0%	50.00%
N	105	106	14	14	2	2

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who we matched from baseline to endline and identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Use, Sources, and Ease of Access to Fodder

Exhibit 16 We report on matched farmers' use of fodder in **Exhibit 16**. The proportion of small-scale farmers giving fodder to their cattle declined from 94 percent at baseline to 91 percent at endline. At baseline, 93 percent of medium-scale farmers gave their cattle fodder compared to all farmers at endline, but the change was not significant. With respect to the types of fodder given, almost all small- and medium-scale farmers gave their cattle fresh fodder at endline but had done so at baseline as well. The proportion of farmers who gave their cattle hay from baseline also stayed the same. Finally, the use of silage increased for medium-scale farmers from 15 percent at baseline to 43 percent during endline data collection, though this finding is not statistically significant due to low sample sizes. The proportion of small-scale farmers giving silage also increased from baseline to endline.

Exhibit 16. Use of Fodder for Matched Sample

Fodder Use ¹	Small-scale		Medium		Large ²	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Gave fodder to cattle	94.34%	90.57%	92.86%	100%	100%	100%
N	106	106	14	14	2	2
If Yes, Types of Fodder Given						
Fresh	97.00%	98.96%	100%	100%	50.00%	100%
Hay	66.00%	61.46%	76.92%	71.43%	50.00%	50.00%
Silage	18.00%**	32.29%**	15.38%	42.86%	0%	50.00%
N	100	96	13	14	2	2

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who we matched from baseline to endline and who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

We examine the sources of fodder for the matched sample in **Exhibit 17**. A larger proportion of small-scale farmers cultivated their own fodder in the past 12 months (41 percent) than at baseline (25 percent) (significant at the 5 percent level). The proportion of medium-scale farmers who cultivated their own fodder in the past 12 months also increased from 15 percent at baseline to 50 percent at endline. Farmers who cultivated their own fodder in the past 12 months devoted modest amounts of land to fodder cultivation—around 1.54 hectares of land for small-scale farmers at endline, not significantly different from the baseline value of 1.68 hectares. For medium-scale farmers the average hectares per farmer devoted to fodder declined from 50 hectares at baseline to 9 hectares at endline, but this should be interpreted with caution due to low sample sizes.

Exhibit 17. Sources of Fodder for Matched Sample

Source of Fodder ¹	Small-scale		Medium		Large ²	
	Baseline	Endline	Baseline	Endline	Baseline	Endline
Own cultivation	25.00%	41.10%**	15.38%	50.00%*	0%	0%
N	100	73	13	12	2	2
Average hectares per farmer for those who cultivate	1.68 ha	1.54 ha	50.5 ha	8.9 ha	N/A	N/A
N	30	25	5	5	0	0
Uncultivated harvest	95.00%	91.78%	76.92%	91.67%	100%	100%
Purchase	7.00%	10.96%	15.39%	8.33%	0%	0%
N	100	73	13	12	2	2

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who we matched from baseline to endline and identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

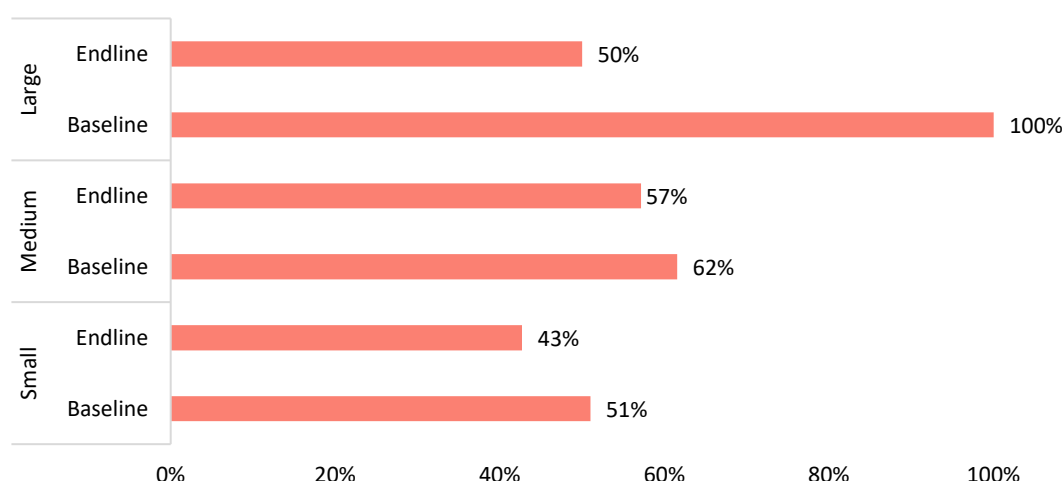
² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Exhibit 18 We show in **Exhibit 18** the ease of access to fodder for the matched sample and changes between baseline and endline rounds, reporting on the proportion of farmers for whom fodder access was easy (including ‘somewhat easy’). Ease of access for small-scale farmers declined between baseline and endline. At baseline, 51 percent of small-scale farmers found access to fodder easy or somewhat easy, compared to only 43 percent at endline. There was also a decline for medium-scale farmers, from 62 percent at baseline to only 57 percent at endline.

Feeding affects a great deal of profit generation, and it is necessary to feed the animal well to improve milk production.

-Farmer, Sofala

Exhibit 18. Ease of Access to Fodder for Matched Sample



* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who we matched from baseline to endline and identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

N = Small-scale (100 at baseline, 96 at endline); Medium (13 at baseline, 14 at endline); Large (2 at baseline, 2 at endline)

Access to Water

We show water access in

Exhibit 19. There was a significant increase (at the 5 percent level) in the proportion of small-scale farmers with continuous access to water, from around 2 percent at baseline to more than 9 percent at endline. The medium-scale farmers also increased their continuous access to water, from 17 percent at baseline to 57 percent at endline. Correspondingly, the proportion of farmers who brought water manually to cattle declined. For small-scale farmers, the proportion declined from 98 percent at baseline to 90 percent at endline (significant at the 5 percent level). For medium-scale farmers, the proportion declined from 83 percent to 43 percent (significant at the 5 percent level). Finally, it appears that the increase in continuous water use came at a price, because the proportion of farmers paying for access to water increased. For small-scale farmers, the proportion increased from 21 percent at baseline to 25 percent at endline. For medium-scale farmers, the proportion increased was significant from none paying for access at baseline to 14 percent at endline (significant at the 5 percent level). For the unmatched sample, water access was similar to that of the matched sample, with 33 percent having continuous water use and more than 22 percent having to pay for water access. Two-thirds (67 percent) brought in water manually.

Qualitative data show that farmers recognized that both adequate water quantity and clean water for their dairy cows is an important factor in increasing milk production and noted improving these practices. Although most farmers understood the relationship between water and production, however, many farmers noted challenges with access to water during the dry season.

Exhibit 19. Type of Water Access for Farmers

Type of Water Access ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Continuous	2.04%	9.52%**	16.67%	57.14%**	50.00%	0%	33.33%
Brought in manually	97.96%	90.48%**	83.33%	42.86%**	50.00%	100%	66.67%
N	98	105	12	14	2	2	72
Average liters/animal/day	55.40 liters	88.23 liters***	18.82 liters	48 liters*	102.13 liters	70 liters	120.31 liters
N	96	93	10	6	1	2	47
Pay for access to water	20.95%	24.53%	0%	14.29%	0%	0%	22.22%
N	105	106	14	14	2	2	72

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Use, Sources, and Ease of Access of On-Farm Dairy Equipment

We next turn to examining the use, sources, and ease of access to on-farm dairy equipment, starting with milking machines and stainless steel milk cans. We then turn to other miscellaneous equipment (milk-chilling equipment, milk feeders, and milk filters).

In

Exhibit 20, we show significant changes in the proportion of small-scale farmers using milking machines from baseline to endline in the matched sample. The proportion of small-scale farmers using milking machines was close to 4 percent at endline compared to none at baseline. The proportion of medium-scale farmers using milking machines was similar across baseline and endline. Among the unmatched sample, about 11 percent reported using milking machines.

For most farmers, the most common source for replacement milking machines was Venture37, even at endline. More than 85 percent of matched small-scale farmers and all medium-scale farmers reported Venture37 as the potential source for replacement of milking machines. From baseline to endline, there was also an increase in matched farmers looking to cooperatives for replacement milking machines. Findings on ease of access to milking machines show that both small- and medium-scale farmers found it easier to access milking machines at endline compared to baseline, although the number of responses was particularly small. For the unmatched sample, findings were very similar. Most said they would go to Venture37 for replacement milking machines. About 16 percent also viewed cooperatives as a good source of replacements. About 27 percent of the unmatched sample found it easy to access milking machines.

Exhibit 20. Use, Sources, and Ease of Access for Milking Machines

Variable ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Used milking machine	0%	3.77%**	21.43%	21.43%	50.00%	50.00%	11.11%
N	105	106	14	14	2	2	72
Potential Source for Replacement of Milking Machines³							
Venture37	N/A	88.89%	33.33%	85.71%*	0%	100%	88.52%
Local commercial supplier	N/A	11.46%	0%	23.08%	0%	50.00%	20.97%
Local market	N/A	3.03%	0%	7.69%	0%	0%	1.64%
Cooperative	N/A	25.51%	0%	15.38%	0%	50.00%	15.87%
N	0	99	3	13	1	2	61
Easy or very easy access to replacements ²	N/A	10.89%	33.33%	42.86%	0%	0%	27.27%
N	0	101	3	14	1	2	66

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. We exclude 'Don't know/refuse to answer' responses. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

³ When there are no observations, N/A is reported.

We examine the use, sources, and ease of access to stainless steel cans in **Exhibit 21**. The proportion of matched small-scale farmers using stainless steel cans or buckets increased from baseline to endline. More than 90 percent of farmers of all types used stainless steel cans for storing milk at baseline, which increased to almost 97 percent at endline. The most common source of potential replacement for all farmers continued to be Venture37 at endline. About 48 percent of small-scale and 64 percent of medium-scale farmers viewed Venture37 as a potential source for replacement at baseline. At endline, these proportions had increased to 87 percent for small-scale farmers (significant at the 1 percent level) and 93 percent for medium-scale farmers (significant at the 10 percent level). There was also a marginal increase in farmers using cooperatives as a source for the cans. Finally, there was a significant increase (at the 1 percent level) in ease of access to replacements for small-scale farmers, from 16 percent at baseline to 44 percent at endline data collection, plausibly due to the presence of Venture37. For the unmatched sample, use of stainless steel cans was similar to use by the matched sample. More than 94 percent of the unmatched sample used stainless steel cans; for over 86 percent of them, the main potential source of replacement was Venture37.

Exhibit 21. Use, Sources, and Ease of Access for Stainless Steel Cans

Variable ¹	Small-scale		Medium		Large ¹		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Used stainless steel buckets and/or cans	92.38%	97.17%	92.86%	100%	100%	100%	94.37%
N	105	106	14	14	2	2	71
Potential Source for Replacement for Stainless Steel Buckets/Cans							
Venture37	48.08%	86.54%***	64.29%	92.86%*	0%	100%	85.71%

Variable ¹	Small-scale		Medium		Large ¹		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Local commercial supplier	14.42%	17.48%	14.29%	8.33%	0%	0%	20.90%
Local market	2.88%	1.94%	7.14%	7.69%	0%	0%	4.41%
Importer	0%	1.94%	0%	7.69%	0%	0%	11.94%
Cooperative	25.96%	37.14%*	14.29%	30.77%	50.00%	50.00%	27.14%
N	104	103	13	12	2	2	67
Easy or very easy access to replacements	15.96%	43.81%***	50.00%	64.29%	50.00%	0%	47.14%
N	94	105	12	14	2	2	70

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned cows. 'Don't know/refuse to answer' responses are excluded. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-response.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

At midterm and endline, we asked respondents about milk chilling equipment, milk filters (funnel and sieves), and milk feeders, as shown in **Exhibit 22**, in which the sample includes matched midterm and endline farmers. Around 31 percent of farmers used milk-chilling equipment at midterm compared to 25 percent during endline, but this difference is not statistically significant. Venture37 was the most common source for replacement of the milk chilling equipment, with a decline in the use of local commercial suppliers as potential sources from midterm to endline. With respect to milk filters, there was a significant decline in use from 78 percent of farmers using milk filters at midterm compared to 63 percent at endline. One potential reason for this decline could be damage to this equipment due to Cyclone Eloise. Venture37 continued to be the main source of replacement for milk filters. Similar to the milk chilling equipment, there was a decline in the use of local commercial suppliers as a potential source of replacement for milk filters. Finally, there was also a decline in the use of milk feeders (funnel and sieves) from midterm to endline. Imports of all types of equipment—milk chilling equipment, milk filters, and milk feeder—declined from midterm to endline.

Exhibit 22. Use and Sources for Milk Chilling Equipment, Milk Filters, and Milk Feeders

Variable	Midterm	Endline
Milk Chilling Equipment		
Used milk chilling equipment	30.77%	24.79%
N	104	121
Potential Source for Replacement of Milk Chilling Equipment		
Venture37	64.63%	69.03%
Imported	15.79%	6.09%**
Local commercial supplier	25.64%	12.07%**
Local market	25.00%	31.03%
Cooperative	31.65%	28.45%
Other	5.56%	4.31%
N	76	113
Milk Filters		
Used milk filter	78.30%	63.11%**
N	106	122
Potential Source for Replacement of Milk Filters		
Venture37	76.09%	76.72%
Imported	15.38%	3.51%***
Local commercial supplier	38.82%	19.64%***
Local market	17.07%	13.04%
Cooperative	50.57%	41.74%
Other	3.26%	0%*
N	78	112
Milk Feeders		
Used milk feeder	55.24%	45.08%
N	105	122
Potential Source for Replacement of Milk Feeder		
Venture37	57.45%	52.54%
Imported	12.05%	2.59%***
Local commercial supplier	43.68%	44.07%
Local market	30.00%	47.06%**
Cooperative	40.66%	22.88%***
Other	7.07%	0.85%**
N	83	116

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Multiple responses were allowed, so responses can add up to more than 100 percent. The sample sizes differ between midterm and endline because of different rates of non-response. The largest farm in the sample, with over 250 cows, is excluded as an extreme outlier.

Breeding Methods for Dairy Cattle

We show use and ease of access to various breeding methods in **Exhibit 23**. There was a decline in use of AI from baseline to endline for small-scale farmers, from 26 percent at baseline to 12 percent at endline.⁴⁰ There was also a decline in use of AI for medium-scale farmers. However, in qualitative interviews, farmers, CLWs, and student interns expressed interest in receiving more training and support for AI, noting that this could be improved and cooperatives described a need for more capacity building in this area. With respect to use of natural breeding, there was a significant increase for small-scale farmers from

⁴⁰ According to Venture37 staff this was a deliberate strategy as AI was deemed unsustainable without significant subsidies and support in logistics such as importation of semen, storage, and access to nitrogen. The policy was shifted whereby it was obligatory to access one bull, if farmer did not already have a suitable bull, when requesting cattle through the DIF.

71 percent at baseline to 82 percent at endline (significant at the 10 percent level). However, there was a significant decline in the ease of access to buying a heifer for small-scale farmers from 32 percent at baseline to 20 percent at endline (significant at the 5 percent level)—a finding that is worrisome from the perspective of sustainability of dairy farming in the region.⁴¹ In a qualitative interview, the breeder shared that there was great demand for purchasing cross-bred cattle, but that most interested buyers were not able to afford the price. Project staff shared that cattle was available for purchase locally, which was an improvement from previously, when it was described as not feasible for small-scale or medium-scale farmers to import cattle from other countries.

Exhibit 23. Use of and Ease of Access to Breeding Methods

Breeding Practices ¹	Small-scale		Medium		Large		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Artificial Insemination							
Used AI	25.96%	12.26%**	28.57%	21.43%	50.00%	0%	13.89%
N	104	106	14	14	2	2	72
Natural Breeding							
Used natural breeding	71.15%	82.08%*	84.62%	92.86%	50.00%	100%	69.44%
N	104	106	13	14	2	2	72
Buying a Heifer							
Ease of access to buying a heifer	32.38%	19.61%**	14.29%	15.38%	50.00%	0%	18.46%
N	105	102	14	13	2	2	65

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-response.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

3.1.6 Animal Health Services

This section discusses animal health testing, vaccinations, common illnesses such as mastitis and ticks, and ease of access to health services.

Use, Source, and Ease of Access to Animal Health Testing

Exhibit 24 In **Exhibit 24**, we show the utilization of animal health testing by MERCADO beneficiaries and the service providers they used. Among the matched sample, there was no significant difference in the proportion of farmers who conducted health testing from baseline to endline data collection. However, animal health testing use did increase with the scale of production—about 60 percent for small-scale farmers (65 at baseline, 57 percent at endline) and close to 79 percent for medium-scale farmers. The one large-scale farmer in our matched sample conducted health testing at both baseline and midterm. Finally, a high proportion (60 percent) of the unmatched sample conducted health testing.

With respect to who provided the health testing, the use of household members increased significantly increase for small-scale farmers—from only about 12 percent at baseline to almost 28 percent at endline (significant at the 5 percent level). The share of small-scale farmers who used livestock technicians to conduct health testing also increased, from 41 percent at baseline to almost 48 percent during endline. Use of livestock technicians for testing also increased among medium-scale farmers (significant at the 10

⁴¹ Smallholders had originally accessed heifers freely through previous projects or through pass-on schemes, whereas in MERCADO they had to cost-share which was out of their reach. According to Venture37 staff, this is in line with MERCADO project's goals to focus on farmers who had the capacity to invest and grow their businesses, either through natural growth or additional purchases.

percent level). That farmers became more confident in their own skills and in turning to the private market for testing services, rather than relying on the project for support, indicates encouraging potential for sustainability.

Access to animal health testing improved for small-scale farmers, with 36 percent finding it easy or very easy at baseline versus 59 percent at endline (significant at the 1 percent level). Access improved for medium-scale farmers, from 50 percent at baseline to 64 percent at endline. Around 63 percent of the unmatched sample also found it easy or very easy to access animal health services.

Exhibit 24. Use of and Service Providers for Animal Health Testing

Health Testing ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Conducted health testing	64.76%	57.14%	78.57%	78.57%	100%	50.00%	59.15%
N	105	105	14	14	2	2	71
If Conducted, Service Provider Used							
Household member	11.76%	28.33%**	45.45%	63.64%	50.00%	0%	45.24%
Promoter	38.24%	28.33%	36.36%	0%**	0%	0%	19.05%
Private veterinarian	2.94%	0%	36.36%	0%**	0%	0%	7.14%
Venture37	19.12%	28.33%	9.09%	18.18%	0%	0%	26.19%
Livestock technicians	41.18%	48.33%	36.36%	72.73%*	100%	0%	45.24%
N	68	60	11	11	2	2	42
Ease of Access							
Easy or very easy to access services	36.19%	58.65%***	50.00%	64.29%	50.00%	0%	63.38%
N	105	104	14	14	2	2	71

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Common Diseases Tested

In **Exhibit 25**, we show four common diseases for which dairy farmers tested: brucellosis, tuberculosis, mastitis, and tick-borne diseases. For small-scale farmers, the proportion who reported testing for brucellosis increased significantly, from 16 percent at baseline to 55 percent at endline (significant at the 1 percent level). The proportion of small-scale farmers reporting testing for mastitis also increased, from 68 percent at baseline to 84 percent at endline (significant at the 5 percent level). Medium-scale farmers did not see any significant changes in testing for animal health issues, with testing relatively high throughout. For the unmatched sample, 64 percent tested for brucellosis, 38 percent for tuberculosis, 79 percent for mastitis, and 52 percent for tick-borne diseases. One of the reasons for these high testing proportions could be that data collection occurred right after cyclone Eloise, which could have resulted in increased disease prevalence.

Exhibit 25. Animal Health Issues Tested

Animal Health Issues Tested ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Brucellosis	16.18%	55.00%***	81.82%	81.82%	50.00%	0%	64.29%
Tuberculosis	45.59%	48.33%	54.55%	81.82%	100%	0%	38.10%
Mastitis	67.65%	83.33%**	72.73%	90.91%	100%	0%	78.57%
Tick-borne diseases	27.94%	48.33%**	54.55%	81.82%	50.00%	0%	52.38%
N	68	60	11	11	2	1	42

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned cows. Since farm scale is endogenous (i.e., is affected by the MERCADO project), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Vaccinations

We show the frequency of cow vaccinations for MERCADO beneficiaries in **Exhibit 26**. For small-scale farmers, the proportion who vaccinated their cows increased, from 79 percent at baseline to 83 percent at endline, as it did for medium-scale farmers, from 79 percent to 93 percent. While the percentage of small-scale farmers who provide only the obligatory vaccinations to their cows declined significantly (at the 1 percent level), the percentage of farmers who provided additional vaccinations increased significantly (also at the 1 percent level), and signaling increased awareness of the importance of vaccination among small-scale farmers. The increase in the additional vaccinations for small-scale farmers came from significantly higher rates of vaccinating for lumpy skin disease, brucellosis, and anthrax (all at the 1 percent level). For medium-scale farmers, only the proportion who vaccinated for brucellosis increased significantly (at the 1 percent level). In qualitative interviews, stakeholders expressed needs and recommendations for the future, including more vaccination help for farmers—not only in the actual vaccinating, but also in more training for student interns on vaccinations taking into account any legislative limitations, and in assistance for government officials with disease control and vaccination for all cattle.

One area where further support is needed is vaccination against foot and mouth disease.

—Community Livestock Worker, Sofala

Exhibit 26. Frequency of Vaccinations

Vaccinations ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Vaccinated cows	79.05%	82.86%	78.57%	92.86%	100%	100%	85.92%
N	105	105	14	14	2	2	71
If Yes, Types of Vaccines							
Required vaccinations only	100%	56.16%***	90.91%	90.91%	100%	0%	44.23%
Foot and mouth vaccine	80.72%	86.11%	90.91%	85.71%	100%	100%	75.00%
Lumpy skin disease vaccine	9.64%	62.32%***	36.36%	75.00%	0%	50.00%	48.08%
Brucellosis vaccine	7.23%	83.10%***	18.18%	85.71%***	0%	100%	69.09%
Anthrax vaccine	14.46%	75.00%***	36.36%	71.43%	0%	50.00%	70.37%
N	83	60	11	7	2	2	52

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and midterm because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only one large farmer from baseline matched to midterm, a comparison is not meaningful.

Mastitis

Exhibit 27, we show that all farmers tested their cattle for mastitis at endline, a significant increase from midterm (1 percent level). Among the small-scale farmers, the increase in testing apparently stems from an increase in using the more sophisticated California Mastitis Test (CMT), with 84 percent of small-scale farmers using it during endline data collection compared to 27 percent at baseline (significant at the 1 percent level).^{42,43} The proportion of medium-scale farmers who used CMT also increased. The unmatched sample also shows high usage of CMT, a finding that confirms high uptake of the more sophisticated testing kits across all farmers of all sizes.

⁴² <http://www.fao.org/3/t0218e/t0218e04.htm>

⁴³ Visual testing involves merely squirting milk on the floor to detect signs of infected milk such as blood in milk. A cup test is more sophisticated wherein you squirt samples into a special cup with a mesh screen in order to discover if there are clots, which show up clearly on the black-colored mesh screen. Finally, the CMT is the highest level of sophistication wherein each of the four teats are tested by squirting in a four-part plate and using a reagent for testing.

Exhibit 27. Type of Mastitis Testing

Mastitis Test ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Did test for Mastitis	80.00%	100%***	78.57%	100%*	100%	100%	100%
N	105	90	14	12	2	2	59
If Tested, Types of Testing							
Visual test	58.33%	37.08%***	36.36%	50.00%	50.00%	50.00%	33.90%
Cup test	34.52%	28.41%	18.18%	41.67%	50.00%	100%	27.12%
CMT	27.38%	84.44%***	72.73%	91.67%	0%	100%	89.83%
N	84	88	11	12	2	2	59

$p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., is affected by the MERCADO project), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and midterm because of different rates of non-responses.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Farmers can detect mastitis inflammation by simple tests on cow's milk using a test kit/strip. We report on the sources of CMT kits accessed by farmers in **Exhibit 28**. The percentage of small-scale farmers who sourced CMT kits from Venture37 increased significantly (at the 1 percent level) from baseline (47 percent) to endline (74 percent), accompanied by a significant decrease (at the 1 percent level) in local market sourcing. According to Venture37 staff, farmers also had the option of purchasing them directly from local vendors. Medium-scale farmers showed similar results, with a significant increase (at the 5 percent level) in the proportion who used kits from Venture37 and a decline in sourcing from a local market. The sources of the kit among the unmatched sample are similar to those of the matched small-scale farmers. Corresponding to the increased testing for mastitis, CLWs and farmers reported in the qualitative interviews seeing reduced cases of mastitis as a result of Venture37 participation; and veterinary shops noted connections and sales of medication for mastitis treatment.

Exhibit 28. Sources of Mastitis Testing Kit

Testing Kit Source ¹	Small-scale		Medium		Large ²		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Venture37	46.51%	74.04%***	25.00%	78.57%**	0%	100%	77.61%
Imported	46.51%	33.01%	25.00%	38.46%	0%	0%	40.91%
Local supplier	0%	2.94%	0%	0%	0%	0%	13.64%
Local market	46.51%	7.69%***	25.00%	15.38%	0%	0%	12.12%
Cooperative	46.51%	51.46%	25.00%	23.08%	0%	50.00%	30.30%
N	43	102	8	13	1	2	66

$p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. Multiple responses were allowed, so responses can add up to more than 100 percent. The sample sizes differ between baseline and endline because of different rates of non-response.

¹ Given the low sample sizes in many cases, differences between baseline and endline might not be statistically significant.

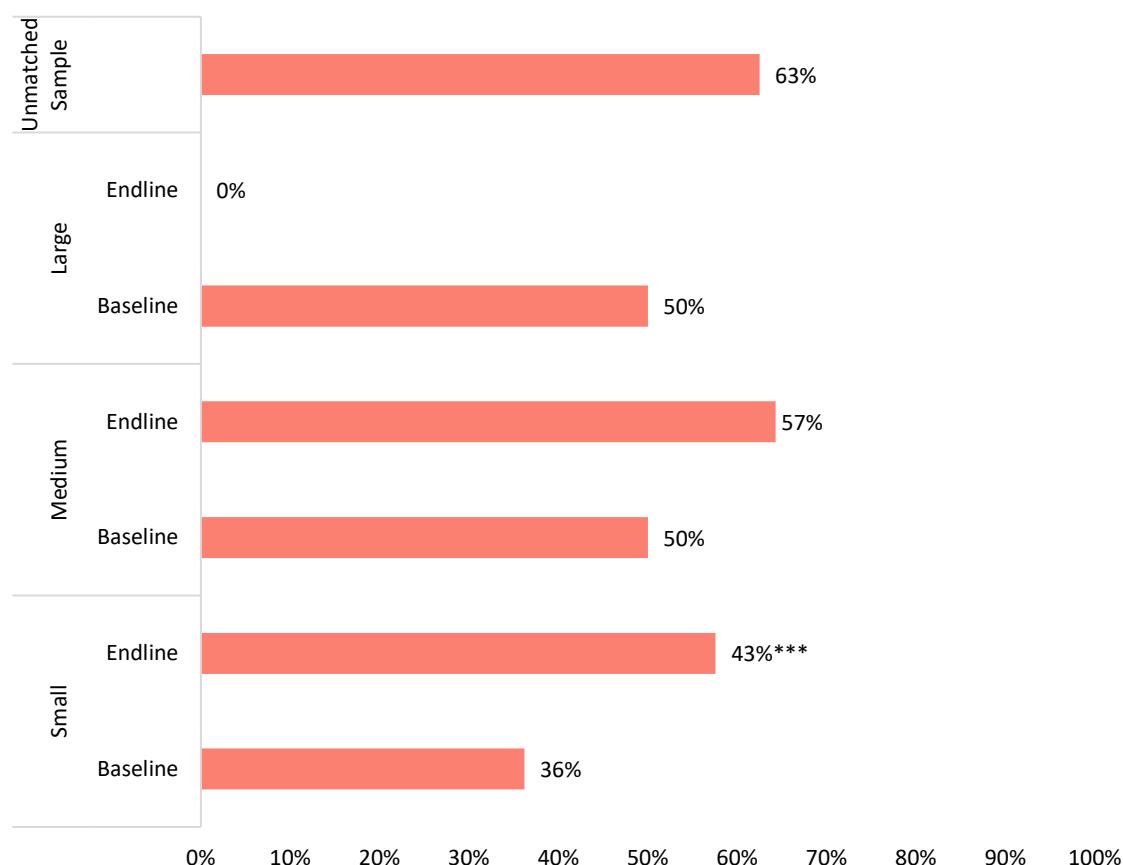
² Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

Ease of Access to Cattle Health Services

Exhibit 29, we present the results for ease of access to cattle health services. Only small-scale farmers saw a significant increase (at the 1 percent level) in ease of access to cattle health services from baseline (almost 43 percent at endline, up from less than 36 percent at baseline). The lack of significance for the

numerically large increase in the case of medium-scale farmers could be driven by low sample sizes. Almost 63 percent of the unmatched sample reported easy access to health services. In qualitative interviews, farmers and CLWs reported improved cattle health as a result of the project and CLWs working with farmers. Even so, farmers predicted that continued access to cattle health services could be a challenge after the project ended.

Exhibit 29. Ease of Access to Cattle Health Services



$p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

N = Small-scale (105 at baseline, 106 at endline); Medium (14 at baseline, 14 at endline); Large (two at baseline, two at endline); Unmatched sample (72).

3.1.7 Engagement with MERCADO

In this section, we detail the extent of engagement with MERCADO project beneficiaries from midterm to endline. First, we discuss overall engagement with the project. Then we examine changes in dairy production, followed by changes in housing, water use, feeding, health services, and breeding. We conclude this section by discussing the trainings provided under MERCADO and the extent to which the project has increased the knowledge base of its beneficiaries. As we note throughout the report, we cannot causally attribute any changes to the project, and we only have self-reported changes by farmers on their MERCADO experience. For obvious reasons, it was only relevant to ask questions about engagement with at midterm and at endline, except where explicitly mentioned.

Overall Engagement

As we reported in **Exhibit 30**, a large proportion of the farmers (more than 75 percent at midterm and more than 83 percent during endline) were aware of the MERCADO project. The farmers reporting connections to input suppliers increased (from 32 percent to 54 percent), connections to buyers and exporters (17 percent to 39 percent), and becoming part of a dairy cooperative (44 percent to 86 percent). Trainings received declined marginally, from 99 percent to 94 percent.⁴⁴ During qualitative interviews, project staff also noted a shift in focus from general training to business training midway through the project.

Exhibit 30. Engagement with MERCADO Project

MERCADO Engagement ¹	Midterm	Endline
Aware of MERCADO project	76.70%	82.64%
N	103	121
If Aware, Type of Engagement		
Received trainings on dairy production	98.73%	94.00%
Was connected to input suppliers	31.65%	54.00%***
Was connected to buyers and exporters	16.46%	39.00%***
Received inputs directly	13.92%	79.00%***
Became part of a dairy cooperative	44.30%	86.00%***
N	79	100

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Multiple responses were allowed, so responses can add up to more than 100 percent. The sample sizes differ between midterm and endline because of different rates of non-response. The largest farm in the sample, with over 150 cows, is excluded as an extreme outlier.

Changes in Dairy Production due to MERCADO

We examine in **Exhibit 31** changes in dairy production and related matters based on their experience with MERCADO. There was a significant increase (at the 5 percent level) in milk production per cow, from 60 percent at midterm to 77 percent at endline. A significant increase occurred (at the 5 percent level) in the proportion of farmers reporting an increase in total income from dairy, from 55 percent at midterm to 73 percent at endline. We also examined whether access changed after the project, defining access in three ways: to information, to buyers, and to dairy inputs. Access in all cases improved. For instance, 56 percent of farmers had access to information due to MERCADO at midterm compared to 79 percent at endline (significant at the 5 percent level); 42 percent had access to buyers at midterm compared to 56 percent at endline; and 40 percent had access to dairy inputs at midterm compared to 64 percent at endline.

Exhibit 31. Changes in Dairy Production and Access Based on Experience with MERCADO

MERCADO Factor	Increased		Decreased		Stayed the Same	
	Midterm	Endline	Midterm	Endline	Midterm	Endline
Milk production per cow	59.76%	77.00%**	17.07%	3.00%***	23.17%	20.00%
Total income from dairy	55.26%	73.00%**	17.11%	3.00%***	27.63%	24.00%
Access to information	56.41%	79.21%***	12.82%	0%***	30.77%	20.79%
Access to buyers	41.77%	55.56%*	11.39%	1.01%***	46.84%	43.43%
Access to dairy inputs	39.51%	64.36%***	13.58%	1.98%***	46.91%	33.66%*
N	76	100	76	100	76	100

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

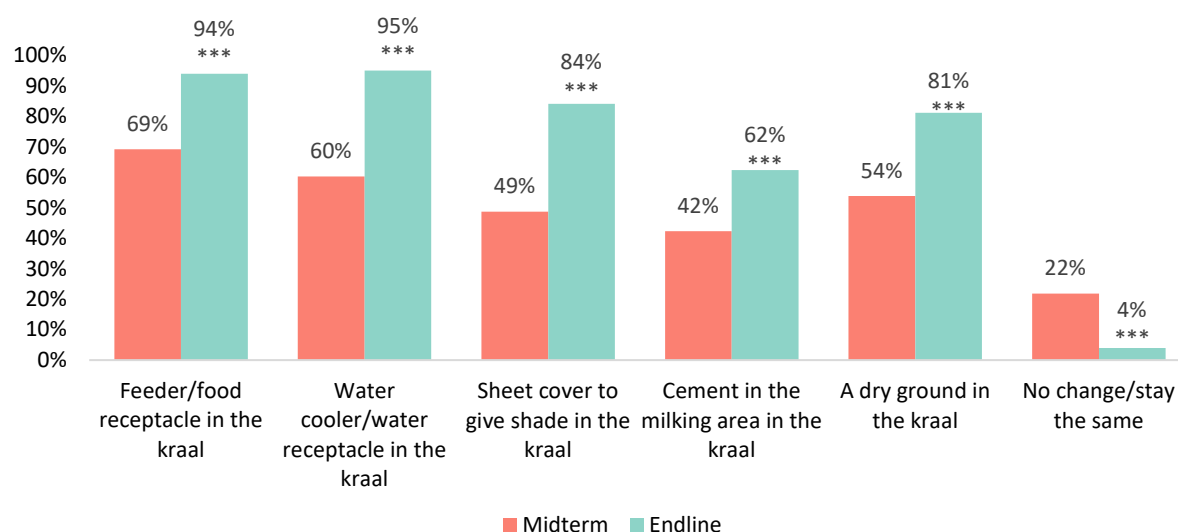
⁴⁴ According to Venture37 staff, training declined due to a number of reasons: MERCADO was designed with only 2 or 3 years of general training; after this only targeted training was to be carried out i.e. as needs were identified. The training team was disbanded around September 2019 in line with this strategy. COVID-19 also further reduced the ability to carry out some targeted trainings.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Multiple responses were allowed, so responses can add up to more than 100 percent. The sample sizes differ between midterm and endline because of different rates of non-response. The largest farm in the sample, with over 250 cows, is excluded as an extreme outlier.

Changes in Housing, Water Use, Feeding, Health Services, and Breeding due to MERCADO

In **Exhibit 32**, we show that farmers started adopting better cattle housing practices based on their experience with the project, with all findings significant at the 1 percent level. More than 68 percent of small- and medium-scale farmers started keeping a feeder or food receptacle in the kraal based on that experience. Large proportions (61 percent of small- and 59 percent of medium-scale farmers) also started keeping a water cooler or receptacle in the kraal. Other housing practices also improved, including hanging a sheet to provide shade in the kraal and cementing the milking area, with more than 40 percent of farmers on average having adopted these practices. With respect to water use, as for housing, farmers started adopting improved water practices to the extent possible, given natural resource constraints. Around 68 percent of midterm farmers reported bringing more water to cattle based on their MERCADO experience; 11 percent reported continuous water use. This is unsurprising, given frequent water shortages in the region and lack of irrigation systems on many farms.

Exhibit 32. Changes in Housing for Cows Based on Experience with MERCADO



Note: The sample includes all farmers who identified at the time of the survey that they currently owned dairy cows, regardless of whether they were matched to baseline or not. The largest farm in the sample, with over 250 cows, is excluded as an extreme outlier. Multiple responses were allowed, so responses add up to more than 100 percent.

N = Midterm (78); Endline (101); New Endline Farmers (22)

As we show in **Exhibit 33**, farmers generally adopted breeding (both natural and AI) due to MERCADO, as well as animal health services. There was a significant increase (at the 1 percent level) in farmers adopting natural breeding from midterm to endline (81 percent at endline vs 60 percent at midterm). There was also an increase in adopting AI. Over 76 percent of farmers reporting having started weekly tick treatments at endline compared to 49 percent at midterm; 86 percent of farmers reporting vaccinating their cattle due to the MERCADO project at endline compared to 49 percent at midterm (both findings significant at the 1 percent level).

Exhibit 33. Changes in Breeding and Animal Health Services due to MERCADO

Variable	Midterm	Endline	New Endline Farmers
Breeding			
Use AI more	29.49%	38.61%	31.82%
Use natural breeding more	60.26%	81.19%***	72.73%
N	78	101	22
Animal Health Services			
Started weekly tick treatments	48.84%	76.00%***	82.61%
Started vaccinating cattle	49.37%	86.00%***	69.57%
N	79	100	23

Note: The sample includes all farmers who identified at the time of the survey that they currently owned dairy cows, regardless of whether they were matched to baseline or not. The largest farm in the sample, with over 250 cows, is excluded as an extreme outlier. Multiple responses were allowed, so responses add up to more than 100 percent.

Knowledge

For each knowledge indicator, we asked farmers a series of questions to indicate how well they knew about that particular dairy practice. We then created a score for each of farmer's knowledge of every improved dairy practice based on the accuracy of their responses—defining a cutoff for each knowledge indicator, and considering the farmers as having knowledge of the practice if they scored above the cutoff.⁴⁵

We report knowledge of improved dairy practices in **Exhibit 34**. In the matched sample, small-scale farmers' awareness of the ways to improve pasture quality was a little above 92 percent at endline, significantly higher than 83 percent at baseline (at the 10 percent level). Knowledge of mastitis control also showed an improvement from baseline to endline for small-scale farmers, from 89 percent at baseline to 98 percent at endline (significant at the 1 percent level). For medium-scale farmers as well, there was a significant increase in the knowledge of mastitis control, from 79 percent at baseline to 100 percent at endline (at the 10 percent level). At endline, we measured farmer's knowledge of three additional improved dairy practices: best practices in cow feeding, advantages of keeping the corral clean, and ways to maintain milk quality. Among both small-scale and medium-scale farmers, virtually all reported good knowledge of best cow feeding practice (more than 98 percent and 100 percent, respectively), the value of keeping a clean coral (100 percent and 93 percent, respectively), and maintaining milk quality (99 percent and 93 percent, respectively). The unmatched sample had similarly high levels of awareness for most practices. Note that the high levels of knowledge at baseline is plausibly explained by the fact that Venture37 has been working with dairy farmers in the region for past 10 years and has provided them numerous trainings on improved dairy practices over that period.

Corresponding to increases in knowledge of improved dairy practices at endline, in the qualitative focus groups and interviews, farmers, student interns, and CLWs discussed receiving and being satisfied with training on feeding, milk quality, mastitis, and clean kraal environment. However, they requested further training on AI.

⁴⁵ Specifically, farmers were considered to have 'knowledge' of a practice if they could list two ways to improve pasture quality, two advantages of artificial insemination, four important equipment in a corral, and three ways to control mastitis.

Exhibit 34. Knowledge of Improved Dairy Practices

MERCADO Training Topic	Small-scale		Medium		Large ¹		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Ways to improve pasture quality	83.02%	91.51%*	71.43%	85.71%	100%	50.00%	86.11%
Advantages of AI	83.02%	85.85%	78.57%	78.57%	100%	50.00%	77.78%
How to prevent or control mastitis	88.68%	98.11%***	78.57%	100%*	100%	100%	97.22%
Best practices in cow feeding	N/A ²	98.11%	N/A	100%	N/A	100%	90.28%
Advantages of clean corral	N/A	100%	N/A	92.86%	N/A	100%	97.22%
Ways to maintain milk quality	N/A	99.06%	N/A	92.86%	N/A	100%	93.06%
N	106	106	14	14	2	2	72

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and midterm because of different rates of non-responses.

¹ Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

² When there are no observations, N/A is reported.

3.1.8 Milk Production, Disposition, and Revenue

In this section, we begin by examining milk production and farmer productivity. We then examine volume and value of sales, discuss the different ways farmers allocated the milk they produced, and examine milk quality.

Milk Production

At baseline, we only asked about the total number of dairy cows owned by the respondent. At midterm and endline, in addition to asking the total number of dairy cows owned by the respondent, we asked the number of cows that produced milk separately in the rainy and dry seasons. This information allowed us to calculate milk production per lactating cow at midterm and endline, in addition to calculating milk production per cow. We present the baseline and endline values of daily milk production *per cow* for the matched sample in the first two columns, and the midterm and endline values of daily milk production *per lactating cow* for the matched sample in the last two columns.

We present information on daily milk production per cow in the *rainy* season for the matched sample in **Exhibit 35**. Daily production per cow increased for all farmers taken together from baseline to endline. Farmers reported that each cow produced on average 7.79 liters of milk per day at baseline and 8.31 liters per day at endline; each lactating cow averaged 6.86 liters at midterm and 9.53 liters at endline. For small-scale farmers, average milk production increased from 8.18 liters to 8.43 liters per cow per day. Medium-scale farmers reported an increase from 4.42 liters per cow per day at baseline to 7.88 liters at endline (significant at the 10 percent level). This matches qualitative interviews with farmers, who reported increased production after receiving training from the project.

As a result of training, before I had a low production, I could get 5 liters in two milkings, but now I can get 15 to 20 liters as a result of training.

-Farmer, Manica

For gender, we restricted the sample to those farmers who self-reported their gender at baseline. This is because respondents were often spouses, children, or relatives, whose gender was typically different from the gender of the actual farm owner, and we wanted to reflect milk production accurately disaggregated by gender of the *farm owner*. On average, both men and women produced marginally more milk than at baseline. Finally, with respect to daily milk production per lactating cow, on average in the rainy season farmers in the matched sample produced 6.86 liters per cow at midterm and this increased to 9.53 liters per cow at endline.

Exhibit 35. Daily Milk Production per Cow, Rainy Season (in Liters) for Matched Sample

Farmer Characteristics ¹	Dairy Production Per Cow		Dairy Production per Lactating Cow	
	Baseline	Endline	Midterm	Endline
All farmers	7.79 liters	8.31 liters	6.86 liters	9.53 liters
Gender²				
Female	7.48 liters	10.53 liters*	6.88 liters	9.23 liters
Male	7.21 liters	7.74 liters	7.72 liters	7.25 liters
Farm Scale				
Small-scale	8.18 liters	8.43 liters	7.13 liters	10.05 liters
Medium	4.42 liters	7.88 liters*	5.14 liters	6.98 liters
Large ³	10.32 liters	6.00 liters	5.00 liters	3.00 liters
N	122	61	52	61

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline, midterm, and endline because of different rates of non-responses.

¹ If wet season production per cow or wet season production per lactating cow was less than two liters, we assumed the farmer misinterpreted the question and reported per cow production as opposed to production for all cows.

² Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as head of the household at baseline.

³ Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

We show daily milk production per cow in the *dry* season for the matched sample in **Exhibit 36**. There was a marginal decline from baseline to endline. Daily milk production per cow was 7.80 liters at baseline and 6.93 at endline. For women, production per liter per cow increased from 6.48 liters at baseline to 7.98 liters at endline. There was a slight decline in daily milk production per cow for men. In terms of farm scale, there were declines in the daily milk production per cow for small-scale (significant at the 5 percent level) and large-scale farmers from baseline to endline. For medium-scale farmers there was an increase from 4.79 liters per cow per day to 8.41 liters (significant at the 10 percent level).

Exhibit 36. Daily Milk Production per Cow, Dry Season (in Liters) for Matched Sample

Farmer Characteristics ¹	Dairy Production Per Cow		Dairy Production per Lactating Cow	
	Baseline	Endline	Midterm	Endline
All farmers	7.80 liters	6.93 liters	9.39 liters	11.82 liters
Gender²				
Female	6.48 liters	7.98 liters	7.89 liters	12.91 liters
Male	7.70 liters	6.43 liters	10.72 liters	11.08 liters
Farm Scale				
Small-scale	8.19 liters	6.67 liters**	9.72 liters	12.94 liters
Medium	4.79 liters	8.41 liters*	7.67 liters	7.24 liters
Large ³	8.41 liters	4.00 liters	3.36 liters	2.00 liters
N	122	71	58	71

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline, midterm, and endline because of different rates of non-responses.

¹ *If dry season production per cow or dry season production per lactating cow was less than one liter, we assumed the farmer misinterpreted the question and reported per cow production as opposed to production for all cows.*

² *Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as head of household at baseline.*

³ *Since only two large farmers from baseline matched to endline, a comparison is not meaningful.*

The minor seasonal differences in daily milk production per cow at endline are, as to be expected, higher in the rainy season than in the dry season, since farmers have access to more water and feed when it rains.

Both midterm and endline surveys asked farmers to report their per-cow milk production ‘yesterday’ (the day immediately previous to the survey) to measure consistency with responses to the seasonal milk production questions. Since the ‘yesterday’ questions were not asked at baseline, our comparisons for the matched sample are between midterm and endline. As we show in **Exhibit 37**, on average, matched sample farmers reported a yield of 5.40 liters per cow on the previous day at midterm and virtually no increase at endline. As expected, the values for milk production per lactating cow were higher than the milk production per cow values. However, in both cases there was a value decline from midterm to endline. Disaggregating the results by gender and farm-scale reveals the same decline in production values on the previous day. One major cause for this finding is that data collection for the endline evaluation was conducted a few weeks after Cyclone Eloise hit Sofala and Manica. Production levels were most likely impacted by the cyclone, which is reflected in the ‘milk production yesterday’ questions. This finding was supported in qualitative interviews, in which disastrous effects on production were noted, especially by stakeholders in Sofala.

Exhibit 37. Milk Production per Cow, Yesterday (in Liters)

Farmer Characteristic	Milk Production per Cow		Milk Production per Lactating Cow	
	Midterm	Endline	Midterm	Endline
All farmers	5.40 liters	5.35 liters	6.76 liters	6.14 liters
Gender¹				
Female	7.22 liters	5.81 liters	7.53 liters	6.00 liters
Male	5.61 liters	5.71 liters	7.11 liters	6.21 liters
Farm Scale				
Small-scale	5.68 liters	5.90 liters	6.92 liters	6.41 liters
Medium	4.54 liters	2.81 liters*	6.28 liters	4.81 liters
Large ²	1.38 liters	2.78 liters	4.40 liters	5.28 liters
N	67	56	70	56

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between midterm and endline because of different rates of non-responses.

¹ *Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as head of the household at baseline*

² *Since only two large farmers from baseline matched to endline, a comparison is not meaningful.*

Volume of Sales

We report on volume of daily milk sales by matched farmers for the *rainy* season in **Exhibit 38**. We limit the sample only to those who answered milk production questions, to ensure the same respondent was answering for both milk production and milk sales in the rainy season. As a note, volume of sales estimates are averages over the entire season and may thus differ from production volumes reported above which are reported on a per cow basis.

For the matched sample, the daily volume of milk sales in the rainy season increased from 11.43 liters at baseline to 13.32 liters at endline (not statistically significant). The volume of milk sales increased for small-scale farmers from 5.82 liters at baseline to endline (significant at the 1 percent level). The volume of milk sales also increased for medium-scale farmers. In qualitative interviews, farmers concurred in reporting increased sales with cooperatives and improved family incomes. With respect to gender, there was a significant increase (at the 5 percent level) in the sales volume for women farmers from 5.82 liters at baseline to 13.38 liters at endline. Men farmers also witnessed an increase. Note that volume of sales is reported as *daily values for all cows*; this does not match up to milk production values, which report *daily values per cow*.

Exhibit 38. Volume of Milk Sales, Rainy Season (in Liters per Day)

Farmer Characteristic	Baseline	Endline	Unmatched Sample
All farmers ²	11.43 liters	13.32 liters	17.22 liters
Gender¹			
Female	5.82 liters	13.38 liters**	11.00 liters
Male	12.27 liters	12.38 liters	9.55 liters
Farm Scale²			
Small-scale	5.89 liters	11.23 liters***	12.62 liters
Medium	21.86 liters	27.75 liters	16.75 liters
N	121	61	28

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and midterm because of different rates of non-responses. We further restrict the sample size for both baseline and midterm by only those who responded to the respective milk production volume question.

¹ Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as head of the household at baseline

² Only one large farmer reported values for this question and hence we exclude them from the analysis.

As in the rainy season, we limited the sample to only those who answered milk production questions, to ensure the same respondent was answering for milk production and milk sales in the dry season. As we show in **Exhibit 39**, average daily sales volume for matched farmers for the *dry* season increased from baseline to endline. At endline, farmers sold about 15 liters per day, compared to 12 liters per cow at baseline. The volume of daily sales for matched women farmers increased from 5.64 liters per cow to 9.87 liters per cow, while the volume for matched men farmers increased from 11.73 liters to 17.42 liters from baseline to endline. The volume of daily sales for small-scale matched farmers significantly increased (at the 1 percent level); the volume for medium-scale matched farmers also increased.

Exhibit 39. Volume of Milk Sales, Dry Season (in Liters per Day)

Farmer Characteristic	Baseline	Endline	Unmatched Sample
All farmers	12.00 liters	14.97 liters	22.03 liters
Gender¹			
Female	5.64 liters	9.87 liters	12.20 liters
Male	11.73 liters	17.42 liters	15.69 liters
Farm Scale²			
Small-scale	5.79 liters	9.83 liters***	14.36 liters
Medium	38.21 liters	42.73 liters	26.71 liters
N	121	69	37

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that

constant. The sample sizes differ between baseline and midterm because of different rates of non-responses. We further restrict the sample size for both baseline and midterm by only those who responded to the respective milk production volume question.

² Only one large farmer reported values for this question and hence we exclude them from the analysis.

In **Exhibit 40**, we present the volume of daily milk sales ‘yesterday’ (i.e., the immediately previous day to the endline survey). On average, a matched dairy farmer sold 14.03 liters per day at midterm and 12.75 at endline. The disaggregated values for men and women and for small-scale and medium-scale farmers also show a marginal decline from midterm to endline. That none of the changes was significant is in line with the production of milk ‘yesterday’ results from above, which also showed marginal declines from midterm to endline. This is most likely because ‘yesterday’ for the endline data collection was right after Cyclone Eloise, which adversely impacted milk production volumes and thereby also milk sales.

Exhibit 40. Volume of Milk Sales, Yesterday (in Liters per Day)

Farmer Characteristic	Volume of Milk Sales for Matched Sample ¹		Volume of Milk Sales for Unmatched Endline Sample ²
	Midterm	Endline	
All farmers	14.03 liters	12.75 liters	12.00 liters
Gender			
Female	10.10 liters	7.50 liters	9.29 liters
Male	16.59 liters	15.56 liters	9.00 liters
Farm Scale²			
Small-scale	11.16 liters	9.78 liters	6.84 liters
Medium	28.58 liters	24.63 liters	17.76 liters
Large ³	N/A	33.50 liters	N/A
N	69	56	36

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Sample includes all midterm farmers regardless of whether they were matched to baseline or not. We further restrict the sample size for both baseline and midterm by only those who responded to the respective milk production volume question. Farm scale as defined at midterm level.

¹ Gender and farm scale are defined at baseline, and if the respondent self-identified as the head of the household at baseline

² Gender and farm scale are defined at endline, and if the respondent self-identified as the head of the household at endline

³ Only one large farmer reported values for this question and hence we exclude them from the analysis.

Value of Sales

This section presents daily sales values for both wet and dry seasons. We present results in US dollars (USD) to be consistent with baseline, using the conversion value of 1 USD to 59 Mozambican metical for all calculations.

As we show in **Exhibit 41**, on average, a matched dairy farmer in the rainy season daily sold milk worth USD 5.09 at baseline and USD 9.29 at endline, driven by an increase in the value of daily milk sales by small-scale farmers (significant at the 5 percent level). Small-scale farmers sold milk worth USD 2.41 at baseline in the rainy season compared to USD 9.25 at endline (statistically significant at the 5 percent level). There was also an increase in the daily milk sales for women (significant at the 5 percent level) and for men. For the unmatched sample, the average value of daily milk sales in the rainy season was between the two values for the matched sample, at USD 7.76.

In the dry season (**Exhibit 42**), the value of milk sales also increased from baseline (USD 5.22) to endline (USD 8.12). Disaggregating by farm scale shows that the milk sales for small-scale farmers increased from baseline (USD 2.39) to endline (USD 6.56), significant at the 1 percent level. There were increases for both men and women farmers.

Exhibit 41. Daily Value of Milk Sales, Rainy Season (in USD)

Farmer Characteristic	Baseline	Endline	Unmatched Sample
All farmers	\$5.09	\$9.29	\$7.76
Gender¹			
Female	\$1.83	\$4.31**	\$4.03
Male	\$5.03	\$12.54	\$7.88
Farm Scale²			
Small-scale	\$2.41	\$9.25**	\$7.76
Medium	\$11.67	\$10.69	\$4.64
N	108	61	28

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-response. We further restrict the sample size for both baseline and endline by only those who responded to the respective milk production volume question.

¹ Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as head of the household at baseline.

² Only one large farmer reported values for this question and hence we exclude them from the analysis.

1 USD = 59 metical.

Exhibit 42. Daily Value of Milk Sales, Dry Season (in USD)

Farmer Characteristic	Baseline	Endline	Unmatched Sample
All farmers	\$5.22	\$8.12	\$14.33
Gender¹			
Female	\$1.97	\$3.68	\$4.67
Male	\$4.57	\$9.83	\$19.30
Farm Scale²			
Small-scale	\$2.39	\$6.56***	\$15.64
Medium	\$18.31	\$16.93	\$9.76
N	108	69	37

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-response. We further restrict the sample size for both baseline and endline by only those who responded to the respective milk production volume question.

¹ Gender is defined as the gender of the respondent at baseline, and if the respondent self-identified as the head of the household at baseline.

² Only one large farmer reported values for this question and hence we exclude them from the analysis.

1 USD = 59 metical.

As we show in **Exhibit 43**, on average, matched dairy farmers sold milk worth USD 4.39 on the day previous to the endline survey, the unmatched farmers averaged USD 4.21 worth. For matched farmers, there was a decline in the daily value sales from midterm to endline for all types of farmers: men and women, and farmers of all scales. Although none of the findings here was significant, their downward direction lines up with our findings on ‘milk production yesterday’—that the endline survey was fielded right after Cyclone Eloise, making it almost certain that milk production and hence milk sales were negatively impacted.

Exhibit 43. Endline Daily Value of Milk Sales, Yesterday (in USD)

Farmer Characteristic	Value of Milk Sales for Matched Sample ¹		Value of Milk Sales for Unmatched Endline Sample ²
	Midterm	Endline	
All farmers	\$5.24	\$4.39	\$4.21
Gender			
Female	\$3.73	\$1.90	\$3.68
Male	\$6.41	\$5.70	\$2.83
Farm Scale³			
Small-scale	\$4.20	\$3.53	\$2.05
Medium	\$10.49	\$7.57	\$6.63
N	69	56	36

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. We further restrict the sample size for both baseline and endline by only those who responded to the respective milk production volume question. Farm scale as defined at endline level.

¹ Gender and farm scale are defined at baseline, and if the respondent self-identified as head of the household at baseline

² Gender and farm scale are defined at endline, and if the respondent self-identified as head of the household at endline

³ Only one large farmer reported values for this question and hence we excluded them from the analysis.

1 USD = 59 metical.

Milk Quality

The farmer survey asked about the frequency of milk rejection and the main reasons for rejection. As we show in **Exhibit 44**, on average, matched medium-scale farmers reported their milk was rejected 8.40 times a year at baseline, a number that declined to 2.78 times a year at endline. For small-scale farmers, the number of times milk was rejected in a year did not change from baseline to endline. Among those who reported milk rejection, the primary reason was mastitis for both baseline and endline, as well as among all categories of farmers.

Exhibit 44. Milk Rejection

Variable	Small-scale		Medium		Large ¹		Unmatched Sample
	Baseline	Endline	Baseline	Endline	Baseline	Endline	
Had milk rejected in the past year	46.67%	40.96%	38.46%	64.29%	100%	50.00%	25.86%
N	105	83	13	14	2	2	58
If Rejected, Frequency							
Number of times milk was rejected	4.80	4.49	8.40	2.78	2.00	2.00	5.15
N	49	33	5	9	2	1	13
If Rejected, Reason							
Mastitis	73.47%	88.24%	50.00%	100%**	50.00%	100%	66.67%
Boiled milk	4.08%	0%	0%	0%	0%	100%	0%
Water added to milk ²	N/A	11.76%	N/A	33.33%	N/A	0%	0%
N	49	34	6	9	2	1	15

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Since farm scale is endogenous (i.e., the MERCADO project affects it), we define farm scale as the baseline level of farm scale and keep that constant. The sample sizes differ between baseline and endline because of different rates of non-responses.

¹ Since only two large farmers from baseline matched to endline, a comparison is not meaningful.

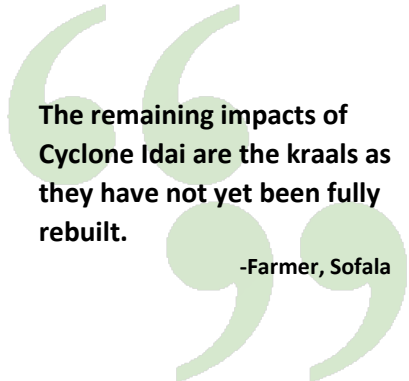
² Not asked at baseline.

3.1.9 Effects of External Shocks

Lingering Impacts of Cyclone Idai

In March 2019, Cyclone Idai struck Mozambique and had a devastating effect on millions of people in Mozambique. Dairy farmers who relied heavily on the environment for their fodder and other supplies disproportionately faced the brunt of this calamity.⁴⁶ Not only was the immediate impact of the cyclone devastating, but also the effect continued—due to loss of infrastructure, cattle disease, lack of access to clean water, and impacts on breeding, all of which influenced the long-term dairy production of the farmers.⁴⁷

We show the *lingering impacts* of Cyclone Idai after the midterm evaluation in **Exhibit 45**. Lingering impacts on herd losses because of cattle illness after the cyclone continued to be felt, for around 15 percent of small-scale farmers and 17 percent of medium-scale farmers. The average number of cattle



The remaining impacts of Cyclone Idai are the kraals as they have not yet been fully rebuilt.

-Farmer, Sofala

lost after the cyclone was 1.67 for small-scale farmers and 5.50 for medium-scale farmers. Lingering impacts of the Cyclone were also felt on milk production, with 60.98 percent of small-scale farmers and 58.33 percent of medium-scale farmers reporting a decline in milk production one year after the Cyclone. Among the farmers who reported a decline, the average decline was 4.25 liters per cow per day for small-scale farmers and 6.00 liters for medium-scale farmers. Roughly 40 percent of small-scale and medium-scale farmers reported no change in their milk production due to the cyclone. As might be expected, there were sustained impacts on dairy infrastructure as well, especially on housing for the cattle, reported by 97 percent of small-scale farmers and 80 percent of medium-scale

farmers. Small-scale (34.29 percent) and medium-scale farmers (20.00 percent) also reported lingering effects on water sources for dairy cattle. This corresponded to qualitative interviews, where farmers reported losing cattle due to the cyclone, and said they were still trying to rebuild housing for cattle after damage to kraals. Some noted that pasture areas had also been affected. Additionally, some farmers who had planned to purchase more cattle or participate in the DHF no longer had enough funds to do so after the cyclone. And some farmers, especially in Sofala, noted that, while still rebuilding after Cyclone Idai, they were hit again by Cyclone Eloise in January 2021.

Beyond the physical damage, the cyclone also caused lingering problems in accessibility to inputs for a variety of reasons, including damaged public infrastructure and local markets. Small-scale farmers (63.41 percent) and medium-scale farmers (66.67 percent) reported continued difficulty in accessing inputs because of the cyclone. Access to food also continued to be difficult, with more than half the small-scale farmers reporting difficulties in accessing adequate food and about a quarter of the medium-scale farmers doing the same.

⁴⁶ <http://www.fao.org/news/story/en/item/1187475/icode/>

⁴⁷ <https://theecologist.org/2019/apr/09/animals-suffer-cyclone-idai-aftermath>

Exhibit 45. Lingering Impacts on Dairy Business due to Cyclone Idai

Variable	Small-scale	Medium	Large
Cattle Loss			
Lost cattle due to later illness caused by Cyclone Idai	14.63%	16.67%	0%
Average number of cattle lost after Cyclone Idai	1.67 cattle	5.50 cattle	N/A
N	41	12	2
Milk Production			
Milk production increased	0%	0%	0%
Increase in liters per day per cow ¹	N/A	N/A	N/A
Milk production decreased	60.98%	58.33%	100%
Decrease in liters per day per cow ¹	4.25 liters	6.00 liters	4.00 liters
Milk production stayed the same	39.02%	41.67%	0%
N	41	12	2
Dairy Infrastructure			
Housing for dairy cattle	97.14%	80.00%	100%
Water sources for dairy cattle	34.29%	20.00%	0%
Milking equipment	14.29%	10.00%	0%
Other	14.29%	20.00%	0%
N	35	10	2
Dairy Inputs			
More difficult to access inputs	63.41%	66.67%	0%
Same/no effect	31.71%	33.34%	100%
Easier to access inputs	4.88%	0%	0%
N	41	12	2
Access to Food			
More difficult to access adequate food	53.66%	25.00%	50.00%
Same/no effect	46.34%	66.67%	50.00%
Easier to access adequate food	0%	8.33%	0%
N	41	12	2

Note: N includes all endline farmers who identified at the time of the survey that they were facing lingering effects from Cyclone Idai in the last 12 months and currently owned dairy cows, regardless of whether they were matched to baseline or not. The largest farm, with over 150 cows, is excluded because it is an extreme outlier. Farm scale is defined as the endline level. Many farmers reported, 'don't know' and hence responses will not add up to 100 percent.

¹As reported by farmers who said that their production increased or decreased.

Impacts of COVID-19

We next examine the impacts of COVID-19 on project beneficiaries. In **Exhibit 46**, we show that for small-scale farmers, access to feed supplies (53 percent) and transportation of products to buyers (50 percent) were the most impacted by the pandemic, followed by access to communication or visits from dairy business input vendors and from dairy buyers (40.00 percent), and access to animal health/veterinary services (30.00 percent). The findings were similar for medium-scale farmers, with access to feed supplies and transportation of products to buyers most impacted (45.46 percent for each). Substantial proportions of small-scale farmers (58.62 percent) and medium-scale farmers (45.45 percent) reported a decline in milk production due to COVID-19. Plausible reasons for declines in milk production due to COVID-19 include lower access to feed supplies and to animal health services, as reported above. Around two-thirds of small-scale and medium-scale farmers also found it difficult to access inputs due to COVID-19. Access to food was problematic during the pandemic for about a third of small-scale farmers almost half of medium-scale farmers, and two-thirds of large-scale farmers.

Exhibit 46. Impacts of COVID-19

Variable	Small-scale	Medium	Large
Dairy Industry			
Dairy infrastructure	13.33%	18.18%	0%
Access to feed supplies	53.33%	45.46%	33.33%
Transportation of products to buyers	50.00%	45.46%	33.33%
Animal health/Access to veterinary services	30.00%	36.36%	33.33%
Communication or visits from dairy business input vendors	40.00%	27.27%	33.33%
Communication or visits from dairy buyers	40.00%	36.36%	66.67%
Communication or visits from MERCADO project staff	23.33%	18.18%	0%
Access to formal credit and/or financial services	13.33%	27.27%	0%
Access to local village savings and loan association (VSLA) credit	6.67%	18.18%	0%
N	30	11	3
Milk Production			
Milk production increased	0%	0%	0%
Increase in liters per day per cow ¹	N/A	N/A	N/A
Milk production decreased	58.62%	45.45%	33.33%
Decrease in liters per day per cow ¹	6.50 liters	8.60 liters	N/A
Milk production stayed the same	41.38%	54.55%	66.67%
N	29	11	3
Dairy Inputs			
More difficult to access inputs	66.67%	60.00%	100%
Same/no effect	30.00%	30.00%	0%
Easier to access inputs	3.33%	10.00%	0%
N	30	10	3
Access to Food			
More difficult to access adequate food	36.67%	45.45%	66.67%
Same/no effect	63.33%	54.55%	33.33%
Easier to access adequate food	0%	0%	0%
N	30	11	3

Note: N includes all endline farmers who identified at the time of the survey that they were facing effects from COVID-19 on their dairy business in the last 12 months and currently owned dairy cows, regardless of whether they were matched to baseline or not. The largest farm, with over 250 cows, is excluded as an extreme outlier. Farm scale is defined as the endline level. Many farmers reported, 'don't know' and hence responses will not add up to 100 percent.

¹As reported by farmers who said that their production increased or decreased.

Impacts of Local Security Concerns

At endline, we also asked farmers about the impacts of local security concerns. After the midterm evaluation, local violence and insecurity related to political civil conflict have been most frequent on two major roadways (the North/South N1 Highway, and the N6 Highway that links the Sofala and Manica provinces), forcing project personnel to avoid traveling on certain roads at certain times. Only five small-scale farmers responded to these questions and hence the findings should be interpreted with caution. We found that, for most farmers (60 percent), milk production did not change due to the security concerns. However, access to inputs did become difficult, especially because of restrictions on travel and movement on roads.

Exhibit 47. Impact of Local Security Concerns

Variable	Small-scale
Milk production increased	0%
Milk production decreased	40.00%
Milk production stayed the same	60.00%
N	5
More difficult to access inputs	60.00%
Same/no effect	40.00%
Easier to access inputs	0%
N	5
More difficult to access adequate food	40.00%
Same/no effect	60.00%
Easier to access adequate food	0%
N	5

Note: N includes all endline farmers who identified at the time of the survey that they were affected by recent military hostilities in the last 12 months and currently owned dairy cows, regardless of whether they were matched to baseline or not. The largest farm, with over 150 cows, is excluded as an extreme outlier. Farm scale is defined as the endline level.

3.1.10 Women's Participation in MERCADO Dairy Projects

Exhibit 48 We outline women's participation in the MERCADO project in **Exhibit 48**. At endline, in Manica, women constituted 37 percent of MERCADO farmers surveyed in Manica; and 36 percent in Sofala—implying that only just over a third of all project participants were women, with little difference by province for the two provinces covered in the endline evaluation. Thus, women farmers did not constitute at least 50 percent of the project participants.

Exhibit 48. Women's Participation in the MERCADO Project

District and Province	Farmers Surveyed			Females as a Percentage of Total
	Total	Men	women	
Chimoio	4	4	0	0%
Gondola	63	36	27	42.86%
Macate	29	17	12	41.38%
Sussundenga	13	8	5	38.46%
Vanduzi	22	17	5	22.73%
Total Manica Province	131	82	49	37.40%
Beira	85	57	28	32.94%
Dondo	37	20	17	45.95%
Nhamatanda	2	2	0	0%
Total Sofala Province	124	79	45	36.29%
Total	255	161	94	36.86%

Even among women involved in the MERCADO project, their scale of operations tended to be smaller-scale than that of men.

Exhibit 48, we show that, except at the large dairy farms, men dominated. In the large farms, half were owned by men farmers, but even this must be interpreted with caution, given the low sample size for this group. In **Exhibit 50**, we show herd sizes of women and men farmers in the matched sample and compare these values to baseline. The total herd size of women farmers increased significantly from 2.07 cattle at baseline to 3.32 cattle at endline (at the 5 percent level). Most of this increase came from an increase in the number of heifers and bulls. These increases in herd size for women are encouraging, because they represent future production potential. However, women were still overwhelmingly small-scale at endline

(Exhibit 49), and the average herd for men farmers was roughly three times as large as for women at both baseline and endline (Exhibit 50).

Exhibit 49. Distribution of Farms at Endline by Scale and Gender

Scale of Farm	Number of Farms	Men Farmers	Women Farmers
Small-scale	151	62.91%	37.09%
Medium	37	75.68%	24.32%
Large	6	50.00%	50.00%

Note: The sample includes all farmers with dairy cows who were surveyed at endline, regardless of whether they were matched to baseline. Farm scale is defined as the endline level.

Exhibit 50. Herd Composition by Gender for Matched Farmers

Cattle Type	Men Farmers		Women Farmers	
	Baseline	Endline	Baseline	Endline
Bulls	0.84	0.88	0.15	0.42**
Cows	2.91	5.98	1.17	1.46
Heifers	1.19	2.26*	0.22	0.71***
Female calves	1.19	1.48	0.54	0.34
Male calves ¹	N/A	0.93	N/A	0.39
<i>Total cattle</i>	<i>6.12</i>	<i>11.52</i>	<i>2.07</i>	<i>3.32**</i>
N	81	81	41	41

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who currently owned cows at the time of the survey and were matched from baseline to endline. Gender is defined as at baseline because there were inconsistencies in reporting of gender between rounds.

¹ Respondents were asked about number of male calves only at endline.

Intra-household roles and responsibilities varied considerably depending on the gender of the respondent at baseline. The endline survey asked farmers who in the household made the decisions on particular farm activities: male adult member, female adult member, and other individuals like paid workers and children in the household. The decision-making scenarios included allocation of revenue, distribution of dairy activities, whether to buy a dairy cow, whether to purchase dairy inputs or equipment, distribution of household activities, and how to spend crop income.⁴⁸ We only report the values for men and women adult members, because the numbers for the other categories were so low.

In Exhibit 51, which reports the gender breakdown of farm decision-making for the matched sample, we show a pattern of more decision-making by men for all scenarios at baseline. At endline, we saw a shift in these patterns. At baseline, men were more likely to decide how to spend money, but the proportion of women deciding how to allocate revenue from milk sales increased from 32 percent at baseline to 42 percent at endline (significant at the 5 percent level). At endline, women were also more likely to make decisions about distribution of dairy activities (significant at the 5 percent level); decisions on whether to purchase a dairy cow (significant at the 10 percent level); and decisions on dairy inputs, distribution of household activities, and how to allocate crop income (all significant at the 1 percent level). Thus, although the *absolute* proportion of women making decisions was still lower than for men for some decisions, more women were making decisions on key aspects of farm management at endline than at baseline.

⁴⁸ Crop income in most cases refers to milk, but occasionally can include other food and cash crops grown by the farmer.

Exhibit 51. Gender Breakdown of Household Decision-Making for Matched Sample

Decision Scenario	Male Adult Member		Female Adult Member	
	Baseline	Endline	Baseline	Endline
Allocation of revenue from milk sales	64.17%	66.37%	32.50%	42.48%
Distribution of dairy activities	64.17%	55.75%	28.33%	41.59%**
Whether to buy a dairy cow	70.00%	59.46%	26.67%	38.74%*
Whether to purchase dairy inputs or equipment	70.83%	72.57%	26.67%	43.36%***
Distribution of household activities	54.17%	31.86%***	41.67%	76.11%***
How to spend crop income	60.83%	71.68%*	36.67%	57.52%***
N	120	113	120	113

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who currently owned cows at the time of the survey and were matched from baseline to endline. The Ns are the highest each sample segment; the number of respondents varied for each decision-making scenario. The women and men columns do not add up to 100 percent because a few responses took other options like 'farm employee' or 'relative' and we did not ask gender for these options. Additionally, for responses at endline, respondents could choose both 'adult female' and 'adult male,' so responses can add up to greater than 100 percent.

Most stakeholders said that men and women faced the same challenges. However, some differences emerged, including increased responsibilities for women to care for family members and other housework, leaving less time available to attend to dairy sector activities while men were able to do a full day of work. In an interview with a veterinary shop, the respondent said that initially customers did not respect her as a woman in agribusiness, but that this changed when customers saw she was engaged with the project and would be the one providing the livestock products. Most farmers at endline recognized that MERCADO had contributed to giving women a place in the dairy-producing community. Although women said that training provided crucial support, they said that men were still more likely to be in leadership roles at different levels of the dairy value chain. As we show through the quantitative data in **Exhibit 52**, in both the rainy season and the dry season, women saw an increase in dairy production from baseline to endline, while men only saw an increase in the rainy season—implying that women farmers were more efficient and productive than men farmers in the dry season. However, other stakeholders noted that there were more men engaged with livestock, with women more involved in agriculture activities and breeding, and that women needed a greater role with livestock. Following recommendations from farmers at midterm to increase financial access to women, project staff shared that to encourage participation, women received a 5 percent increase in scores during review of grant award applications.

Exhibit 52. Daily Yield of Milk Output per Cow for Men and Women (in Liters)

Farmer Characteristic	Rainy Season Output		Dry Season Output	
	Baseline	Endline	Baseline	Endline
All farmers	7.79 liters	8.31 liters	7.80 liters	6.93 liters
Gender¹				
Female	7.48 liters	10.53 liters*	6.48 liters	7.98 liters
Male	7.21 liters	7.74 liters	7.70 liters	6.43 liters
Farm Scale²				
Small-scale	8.18 liters	8.43 liters	8.19 liters	6.67 liters**
Medium	4.42 liters	7.88 liters*	4.79 liters	8.41 liters*
Large	10.32 liters	6.00 liters	8.41 liters	4.00 liters
N	122	61	122	71

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: The sample is limited to farmers who identified at the time of the survey that they currently owned dairy cows. Farm scale is defined as the baseline level. The sample sizes differ between baseline and endline because of different rates of non-response.

¹ *Gender is defined as the gender of the respondent at baseline and if the respondent self-identified as the head of the household at baseline.*

² *Since only two large farmers from baseline matched to endline, a comparison is not meaningful.*

3.2 Quantitative Results from Semi-Structured Surveys

This section presents the main endline quantitative findings from cooperatives, processors and microprocessors, and the breeder. The principal objective was to document the state of these key dairy actors at endline, examining trainings received, practices, and technologies used. For each business, we also collected data on procurement volumes and costs; record keeping; product safety and quality practices; value-added services including storage, processing, and packaging; volume and value of sales; trainings; labor use; and experiences with Cyclone Idai, COVID-19, and local security issues from the low-intensity civil war. Because of small-scale sample sizes (six cooperatives and 14 processors), all findings in this section should be interpreted with caution. As detailed in the midterm evaluation report, the survey instruments changed substantially between baseline and midterm, which reduced the reliability of baseline to midterm comparisons. For this reason, we only compare midterm to endline findings.⁴⁹ All values reported are for the 12 months from February 1, 2020, to January 31, 2021; we disaggregated by dry and rainy season wherever possible. Dry season was from May through October 2020; the rainy season was from November 2019 through April 2020.

3.2.1 Overview of Sample

We show that we surveyed all 21 businesses in the sample in **Exhibit 53**. For the processors and breeder, in most cases the respondent was the owner or general manager of the business. For cooperatives, the respondent either was the president or held another leadership position. We surveyed 14 processors and six cooperatives. In general, microprocessors were smaller in scale and operation than processors. We also surveyed the one breeder.⁵⁰ Processors in our sample had been in business for varying lengths of time. Entrepreneurs who learned the business and acquired skills from their former employers and from other dairy projects, including previous Venture37 projects, established six processors between 2000 and 2015. One processor established their business in 2008 as a government-backed plant; another processor became established in 2017 as an initiative of an educational institution. The one breeder in our sample was a vertically integrated business that grew from a recently scaled-up farm; MERCADO supported this business to supply heifers to the beneficiaries.

Exhibit 53. Endline Sample of Cooperatives, Processors, and Breeder

Business Type	Number Attempted	Number Surveyed	% of Total Surveyed
Cooperatives	6	6	28.57%
Processors and microprocessors	14	14	66.67%
Breeder	1	1	4.76%
All businesses	21	21	100%

⁴⁹ See Annex G in MERCADO Midterm Performance Evaluation Report.

⁵⁰ The breeder included in the sample is a large farm that also conducts breeding activities. This business acquired a share in one of the large processors in the sample. This business thus was administered three surveys and is included in three samples: farmer, breeder, and processor. Different managers responsible for different areas of the business responded to the surveys. In addition to the farmer survey, we administered a short breeder survey described in Section 2, which included questions specific to their breeding activities. The farming, breeding, and processing operations of this business are separate and hence, we include them in all three samples.

3.2.2 Engagement with MERCADO

The endline evaluation revealed that the main motivation of the cooperatives, processors, and breeder for starting their business was that dairy was a good investment and source of income. Additionally, for cooperatives, other motivations included better coordination and marketing for farmers, as well as reducing the distance farmers needed to travel to sell their milk. For processors, other motivating factors included already being a breeder or producer and looking for more options for selling and processing milk, government support, as well as educational centers looking for opportunities for students to develop skills. Most respondents said they had a positive experience working with MERCADO. Most also believed the project increased the visibility of the actors in the dairy value chain through advertising, marketing, and fostering linkages to other actors in the dairy value chain. This visibility was what motivated many cooperative members and processors. Although most firms increased their output during the project, many respondents expressed concerns about their ability to break even and to balance costs and revenues. Respondents pointed to the positive impact of MERCADO's investment grants and trainings. However, they also highlighted the emerging nature of the dairy value chain in Mozambique and acknowledged that, although support from the project had been key, it was insufficient to cover risks in the dairy business, and they required more support in marketing and sales, especially connections to buyers. We describe below the extent of engagement with MERCADO project for three key activities: training, grants, and record keeping.

Most cooperatives and processors received some training in the last 12 months, as we show in **Exhibit 54**. The most common type of training received by processors was milk processing training (35.7 percent). For cooperatives the most common training types were for milk handling, milk testing, and business operations (with two-thirds receiving each).

Processors and cooperatives noted that trainings were beneficial for them—helping them improve in many areas, including milk testing. According to cooperative and processor interviewees, these trainings were crucial in helping increase milk production and quality. However, project staff described a shift after midterm in training needs from general to targeted training on business growth after midterm, leading them to replace training officers with dairy business officers. And cooperatives and producers did report more training on business operations. Some cooperatives said, though they appreciated receiving more training on finance and business management, they could use even more. Processors also appreciated the trainings received and reported providing support to cooperatives and farmers as well, and highlighted the need for advertising and marketing to improve sales and distribution. Most respondents reported that improving production and sales and access to training and co-financing were important motivating factors for joining the MERCADO project.

Exhibit 54. Topics of Trainings for Cooperatives and Processors

Training Received	Cooperatives	Processors
No training	16.67%	28.57%
If Received training, Topic of Training		
Milk handling	66.67%	14.29%
Milk processing	50.00%	35.71%
Milk storage and cooling	50.00%	7.14%
Food safety training	50.00%	14.29%
Milk testing	66.67%	14.29%
Business operations/financial management	66.67%	14.29%

Note: N = six cooperatives, 14 processors. Multiple responses were allowed, so columns add up to more than 100 percent.

Existing and new dairy milk farmers, cooperatives, processors, input businesses, and service providers used MERCADO DIF grants for co-financing equipment, infrastructure, and other innovations to expand

their businesses. The DIF grants for co-financing acquisition of dairy infrastructure and cattle were key motivators for firms to participate in the project. Most respondents said they highly valued these funds and associated their increase in milk volume to engagement with MERCADO.

At endline, all businesses said they had kept some kind of record or logs in the last 12 months (**Exhibit 55**). The most common types of records for cooperatives were income and expense ledgers, production ledgers, records of equipment bought, milk collection records, and records of rejection of incoming milk. Processors were less likely than cooperatives to keep records of labor, long-range budgeting, milk sales, and rejections of incoming and outgoing milk. Most cooperatives and processors reported receiving initial or refresher trainings on record keeping that led to changes in practices, including more thorough records to better understand sales and improve business management.

Exhibit 55. Record Keeping by Cooperatives and Processors

Records Kept	Cooperatives	Processors
Kept records	100%	100%
N	6	14
If Yes, Type of Record		
Income and expense	100%	100%
Production	100%	100%
Labor	83.33%	50.00%
Equipment	100%	64.29%
Long-range budgeting	66.67%	14.29%
Rejections of incoming milk	100%	42.86%
Rejections of outgoing milk	100%	57.14%
Monthly cash flow	100%	64.29%
Milk collection	100%	64.29%
Milk sales	100%	57.14%
N	6	14

Note: Multiple responses were allowed, so columns add up to more than 100 percent.

3.2.3 Procurement and Sales

Procurement of Raw Milk

As we show in **Exhibit 56**, at endline the average number of suppliers for cooperatives was 12.2 during the rainy season, and marginally higher in the dry season at 14.0, with little change at endline. For processors the average number of suppliers (i.e., cooperatives) was around four at midterm and around six to seven at endline across both the rainy and dry seasons. Small-scale suppliers were the largest source of raw milk for processors in both seasons. However, in the dry season, the processors relied more on imported powder, while in the rainy season they sourced more than half of their raw milk from cooperatives and other sources.

On average, the cooperatives procured 17,391 liters of raw milk over the entire rainy season, with a value of USD 6,609 (403,842.95 meticals).⁵¹ At endline this increased to 23,196 liters, with the average value of procurement increasing to USD 8,190 (500,449.95 meticals). In the dry season, the average procurement by cooperatives was much higher, at 26,007 liters, valued at USD 11,295 (690,180.98 meticals); but this decreased to 17,582 liters in the dry season. At endline, the average purchase price per liter for cooperatives was much lower in the rainy season, at approximately USD 0.35 (20.7 meticals), compared to the dry season at approximately USD 0.90 (53.1 meticals). As expected, the procurement in the rainy

⁵¹ For consistency, we use the same exchange rate as used in Section 3 i.e. 1 USD = 59 MT

season was higher than in the dry season, since milk production from farmers was higher in the rainy season, which led to higher procurement.

Next, we turn to the volume and value of procurement for processors. As we show in **Exhibit 56**, processors procured on average 9,500 liters in the rainy season at midterm, which increased to 14,237 liters at endline. In the dry season the total volume of procurement was similar at midterm and endline, at around 10,500 liters. At endline, the average cost of procurement was USD 5,194 (317,379.37 meticals) in the rainy season and USD 3,087 (188,631 meticals) in the dry season.

Exhibit 56. Volume and Value of Milk Procurement by Cooperatives and Processors

Variable ¹	Cooperatives		Processors ²	
	Midterm	Endline	Midterm	Endline
Rainy Season				
Minimum number of suppliers	7	3	2	0
Maximum number of suppliers	20	18	10	55
Average number of suppliers	12.20	13.80	4.17	6.36
N	5	5	6	14
Minimum total volume of procurement	5,058 liters	0 liters	9,000 liters	0 liters
Maximum total volume of procurement	34,800 liters	68,184 liters	10,000 liters	42,886 liters
Average total volume of procurement	17,392 liters	23,196 liters	9,500 liters	14,237 liters
N	5	4	2	10
Minimum total value of raw milk procurement	\$1,457	\$417	\$51	\$0
Maximum total value of raw milk procurement	\$13,566	\$23,455	\$8,966	\$21,806
Average total value of raw milk procurement	\$6,609	\$8,190	\$3,993	\$5,194
N	5	4	6	11
Average price per liter of raw milk ³	\$0.38	\$0.35	\$0.42	\$0.36
N	5	5	6	12
Dry Season				
Minimum number of suppliers	8	8	1	0
Maximum number of suppliers	20	18	10	50
Average number of suppliers	14.00	13.60	4.00	7.14
N	5	5	5	14
Minimum total volume of procurement	8,630 liters	0 liters	9,000 liters	278 liters
Maximum total volume of procurement	37,800 liters	44,004 liters	12,000 liters	41,560 liters
Average total volume of procurement	26,008 liters	17,582 liters	10,500 liters	10,208 liters
N	4	5	2	12
Minimum total value of raw milk procurement	\$2,487	\$386	\$1,186	\$108
Maximum total value of raw milk procurement	\$22,475	\$33,546	\$11,364	\$7,108
Average total value of raw milk procurement	\$11,295	\$15,749	\$4,691	\$3,087
N	5	5	5	12
Average price per liter of raw milk ²	\$0.43	\$0.90	\$0.45	\$0.30
N	5	5	5	13

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: N is the number of respondents who reported values for the numbers reported in the row immediately above.

¹Minimum and maximum values are shown for the number of suppliers, the total volume of procurement, and the total value of raw milk sales because the average values displayed among small sample sizes do not fully capture the level of variation that exists among the few responses. The range of values for price per liter are not shown because the average price per liter is manually calculated.

²The largest processor was excluded at both midterm and endline because it provided data only for the rainy season at midterm and extreme values for endline.

³Average price is calculated by dividing the average total value of products sold by the average total volume of products sold.
1 USD = 59 meticals

The firms in our sample identified three main challenges in increasing procurement of raw milk:

- **Seasonal nature of milk procurement.** Milk procurement was seasonal, with farmers supplying less milk in the rainy season than in the dry season. However, demand for milk was higher in the rainy season, which corresponded with summer. Therefore, the farmers, cooperatives, and processors were missing huge potential profits from the low rainy season supply, which was caused primarily by poor transportation conditions in the rainy season when, according to cooperatives, some farmers could not access the milk collection center.
- **Low prices paid to farmers and cooperatives.** Cooperatives also noted that in some cases farmers were selling to other buyers to be paid higher prices—for example, selling directly to processors or customers. While most processors reported preferring to purchase raw milk from cooperatives due to more affordable prices and more reliable quality, some noted turning directly to farmers if they needed more milk. Some processors reported increasing prices paid, to encourage farmers and cooperatives to provide greater quantities of raw milk due to operating below capacity. This corresponded to a project performance report detailing how MERCADO negotiated with a processor to increase raw milk price for small-scale farmers and cooperatives, depending on quality.
- **Changes in the market of contract selling and lack of access to credit.** Respondents identified as a major issue lack of compliance with contracts, and resulting payment interruptions. Non-compliance, which happened at all levels from farmers to processors, affected the whole value chain. For example, a cooperative noted receiving milk from farmers but not being able to pay them due to not yet receiving payments from processors and lack of access to credit. In turn, processors for the most part noted their preference for purchasing milk from cooperatives due to greater reliability. Farmers, cooperatives, and processors all discussed wanting to work with more reliable buyers who could provide timely, dependable payment. Cooperatives and processors detailed having limited access to finance due to banks' hesitance to work in the livestock sector. It was noted in project performance reports that MERCADO was facilitating linkages among project participants (such as farmers, cooperatives, and savings and credit services) as an alternative approach for financing access.

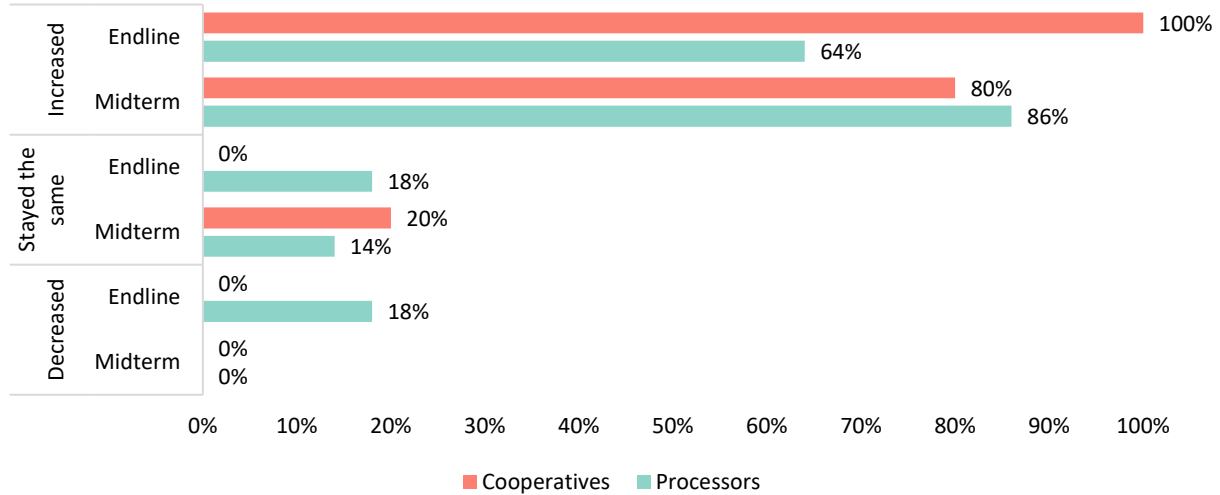
Buying at the cooperative has benefits because it probably has a contract and brings a certain amount of security. There is always a guarantee of milk. While for other suppliers there is no guarantee because they may or may not sell you the milk.

— Processor, Sofala

Impact of MERCADO on Milk Procurement

As we show in **Exhibit 57**, 80 percent of cooperatives reported an increase in their procurement due to engagement with MERCADO at midterm, compared with 100 percent at endline. For processors, around 80 percent at midterm reported an increase in milk procurement due to MERCADO at midterm, compared to only 64 percent at endline. However, both cooperatives and processors said that any increases in procurement were not enough to enable them to break even and that the project had been slow to tackle the barriers mentioned above to facilitate larger increases in procurement.

Exhibit 57. Changes in Milk Procurement due to MERCADO



* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

$N = 5$ midterm cooperatives, 5 endline cooperatives, 7 midterm processors, 11 endline processors

Impact of External Events on Milk Procurement

At endline, we asked cooperatives and processors about three types of external events: (1) lingering impacts of Cyclone Idai; (2) COVID-19 pandemic; and (3) local security concerns. We document the impacts of these external events on milk procurement in this section.

Lingering Impacts of Cyclone Idai. At midterm, Cyclone Idai significantly affected milk procurement: 80 percent of the cooperatives and 62.5 percent of the processors reported reductions in volume of milk procured due to the cyclone. At endline, we asked cooperatives and processors if they experienced any lingering impacts of Idai. Most cooperatives and processors said they did not face lingering impacts of Idai, but sample sizes for these questions were low, with only one cooperative and four processors responding to these questions. Those who responded mentioned that one year later, the impacts of Idai had dissipated and were no longer felt in either volume of milk procurement or price paid to suppliers. Qualitative findings reveal that Idai was, indeed, a factor in stagnating growth. While a few cooperatives and processors said there were no lingering impacts of Idai in the last 12 months, most described continuing impacts due to infrastructure damage, decreased volume of milk, animal deaths, lack of feed and pasture areas, loss of power, and decreased funds. Multiple cooperatives and processors cited long-term problems with decreased milk production linked to loss of cows, and remaining damage to cattle housing and pasture areas. One processor mentioned using funds to repair housing or other needs, leaving less money available for procurement and other business costs. Project staff echoed these impacts, including losses of animals, infrastructure (for cows and stakeholders), and financial capacity. The breeder also felt some lingering impacts of Cyclone Idai, including difficulties in the ease of obtaining genetics and breeding stock. Further, the breeder mentioned that the breeding/production of dairy cows had decreased due to Cyclone Idai's lingering impacts.

COVID-19 pandemic. As we show in **Exhibit 58**, all cooperatives and processors reported a reduction in the volume of milk procurement after the start of the pandemic. For cooperatives, the reduction in procurement volume was 491 liters per month, on average; for processors the reduction was 800 liters per month. Findings from qualitative interviews indicated decreased procurement from processors as a result of reduced sales. But some processors and cooperatives said there was lower milk production and procurement due to lack of food and supplements for cows, families consuming milk instead of selling it,

or selling cows to buy food. The breeder shared that borders closed due to the pandemic, making it impossible to procure breeding stock to import into the country.

Local Security Concerns. Only one cooperative reported any impacts on their business due to the local security concerns from the low-intensity civil war described earlier.

Exhibit 58. Impacts of COVID-19 on Milk Procurement

Variable	Cooperatives	Processors
Volume of Milk Procurement		
Increased after COVID-19	0%	0%
Stayed the same after COVID-19	0%	0%
Decreased after COVID-19	100%	100%
N	4	10
Reduction in procurement, in liters per month	490.5 liters	800 liters
N	4	8

*Note: N corresponds to the value above it and is the number of businesses who reported their procurement figures.
1 USD = 59 meticals*

Sales of Milk and Milk Products

This section examines the sales of milk and milk products for cooperatives and processors, reporting buyer types and sales volumes and values for cooperatives and processors for dry and rainy seasons. ^e of sales in the rainy season.

Exhibit 59 We present the volume and value of sales in **Exhibit 59**. The average volume of raw milk sales for cooperatives was 16,173 liters in the rainy season at midterm, and virtually the same at endline. In the dry season, the volume decreased marginally, from 24,475 liters sold at midterm to 17,874 liters sold at endline. At endline, since the average volume of milk sold was similar across the rainy and dry seasons, the average value of sales was correspondingly similar across the two seasons. As expected, there was no seasonal difference in the average price per liter of raw milk sold for cooperatives at endline.

At endline, the average volume of milk and milk products sold by processors in our sample was 9,750 liters in the rainy season and 10,096 liters in the dry season. The average price per liter of milk and milk products sold was higher in the rainy season (USD 0.79) compared to the dry season (USD 0.52), resulting in higher total value of sales in the rainy season.

Exhibit 59. Volume and Value of Sales for Cooperatives and Processors, by Season

Milk Sold ¹	Rainy Season		Dry Season	
	Midterm	Endline	Midterm	Endline
Cooperatives				
Minimum total volume of raw milk sold	3,290 liters	4,102 liters	8,898 liters	3,660 liters
Maximum total volume of raw milk sold	30,000 liters	29,728 liters	36,000 liters	32,541 liters
Average total volume of raw milk sold	16,173 liters	16,473 liters	24,475 liters	17,874 liters
N	4	4	4	5
Minimum total value of raw milk sales	\$1,115	\$1,272	\$3,016	\$1,427
Maximum total value of raw milk sales	\$12,508	\$11,589	\$14,034	\$11,582
Average total value of raw milk sales	\$6,763	\$6,343	\$8,301	\$6,938
N	3	4	5	5
Average price per liter of raw milk sold ²	\$0.42	\$0.39	\$0.34	\$0.39
N	4	4	5	5
Processors²				
Minimum total volume of milk products, such as milk and yogurt, sold	3,500 liters	404 liters	4,500 liters	1,800 liters
Maximum total volume of milk products, such as milk and yogurt, sold	12,000 liters	20,117 liters	12,000 liters	32,320 liters
Average total volume of milk products, such as milk and yogurt, sold	7,156 liters	9,750 liters	7,375 liters	10,096 liters
N	4	8	4	10
Minimum total value of milk and milk product sales	\$1,186.44	\$0.68	\$1,383.05	\$106.78
Maximum total value of milk and milk product sales	\$6,915.25	\$26,474.85	\$15,585.93	\$15,037.29
Average total value of milk and milk product sales	\$3,770	\$7,683	\$6,304	\$5,269
N	5	8	6	10
Average price per liter of milk and milk products sold ³	\$0.53	\$0.79	\$0.85	\$0.52
N	5	8	6	10

* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: N corresponds to the observations used to generate the average value above it and is the number of businesses who reported in each category.

¹Minimum and maximum values are shown for the total volume of raw milk sold, the total value of raw milk sales, the total volume of milk products sold, and the total value of milk product sales because the average values displayed among small sample sizes do not fully capture the level of variation that exists among the few responses. The range of values for price per liter of milk and milk products sold are not shown because the average price per liter is manually calculated.

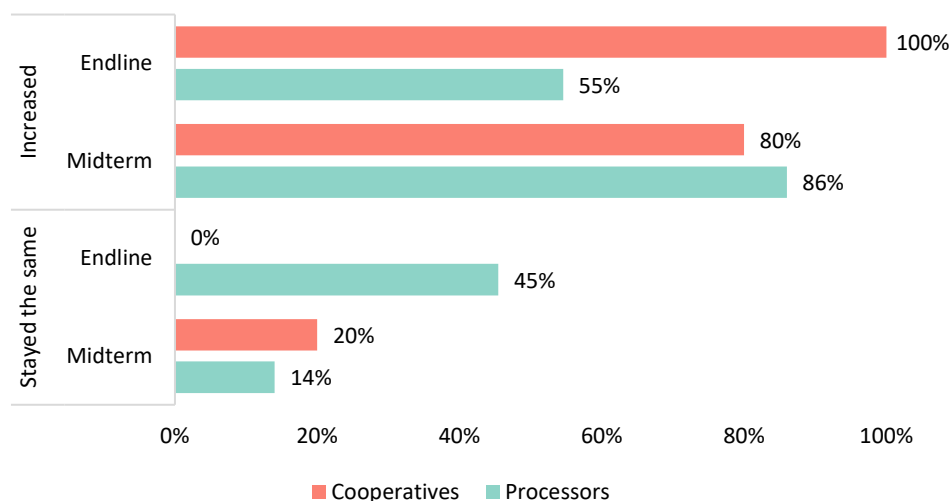
²The largest processor was excluded at both midterm and endline because it provided data only for the rainy season at midterm and extreme values at endline.

³Average price is calculated by dividing the average total value of products sold by the average total volume of products sold.
1 USD = 59 meticals

Impact of MERCADO on Milk and Milk Product Sales

All cooperatives reported an increase in milk sales from midterm to endline due to engagement with MERCADO. For processors, 86 percent at midterm reported an increase in milk sales due to MERCADO, compared to 55 percent at endline (**Exhibit 60**). For about 45 percent of processors, there was no change at endline.

Exhibit 60. Changes in Cooperative and Processor Milk Sales due to MERCADO



* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

N = 5 midterm cooperatives, 5 endline cooperatives, 7 midterm processors, 11 endline processors

While sales increased during the project, the majority of the interviewed cooperatives and processors, and the breeder, described challenges—and actions taken to address these challenges—to improve sales related to transportation, marketing, and linkages to retailers. Transportation was identified as a challenge to sales by processors, with some saying they lacked adequate transportation to distribute milk and dairy products. For example, one processor lacked a vehicle for distributing products and had to rent a motorbike taxi. The breeder mentioned transportation difficulties due to poor roads. Additionally, processors highlighted lack of access to finance, especially from banks, as a challenge to growth and to improving sales. Lastly, processors focused on the importance of marketing and advertising for sales, with some noting continuing challenges and others appreciating efforts made by MERCADO. One processor described low visibility due to poor branding; others said marketing was expensive. Given the expense, processors appreciated the project engaging in advertising at events, in schools, in newspaper, and radio; and saw improved sales as a result. Processors noted a need for more marketing after the project ended. In a project semi-annual performance report, there was a highlight that the project provided a DIF grant to a processor to launch and roll out its new brand across the country, with the goal of increasing demand for local milk and dairy products.⁵² Regarding linkages, processors and cooperatives noted that the project facilitated connections with retailers to improve sales. Triangulating with MERCADO's semi-annual performance reports reveals that the project worked to place vertical display refrigerators in small-scale kiosks or 'barracas,' to increase sales and access to customers and use DIF grants to cover the costs of some of these retail refrigerators.⁵³

Impact of External Events on Milk and Milk Product Sales

At endline, we also asked cooperatives and processors about the impact of three types of external events: (a) lingering impacts of Cyclone Idai; (b) COVID-19 pandemic; and (c) local security concerns; on milk and milk product sales. We document the impacts of these external events on sales below.

Lingering Impacts of Cyclone Idai. At endline, we asked cooperatives and processors if they experienced any lingering impacts of the cyclone on milk and milk products sales. Most cooperatives and processors did not face lingering impacts of Cyclone Idai and sample sizes for these questions were low with only one

⁵² MERCADO Semi-Annual Performance Report, October 2020 – March 2021

⁵³ MERCADO Semi-Annual Performance Report, October 2019 – March 2020

cooperative and five processors responding to these questions. Those who responded mentioned that one year later, the impacts of Idai were no longer felt on milk and milk product sales. In qualitative findings, a few processors reported no lingering effects on sales due to Cyclone Idai. However, some cooperatives and processors cited damage to equipment such as pasteurizers, milk testing machines, generators, and computers. Another processor shared having lingering debts to milk suppliers and still owing money to farmers and cooperatives. Others said that some shops closed due to damages and never reopened, affecting sales for processors. One retailer confirmed that the cyclone destroyed infrastructure and described forced relocation to continue with business. Another retailer noted increased sales initially, as people purchased whatever they could from stores, but decreases in sales a few months later, as customers focused spending on rebuilding homes and cyclone-related other costs. The breeder told a similar story—that while demand for buying cattle increased after the cyclone, customers’ financial capacity to purchase cattle decreased.

COVID-19 pandemic. Most cooperatives and processors were impacted by COVID-19, reporting a reduction in the volume of milk procurement after the pandemic (**Exhibit 61**). For cooperatives, the reduction in sales volume averaged close to 200 liters per month; for processors, it was close to 700 liters per month. Although a few cooperatives and processors said there was no impact on milk and dairy product sales, most described decreased sales—with reasons including lack of access to customers given closures of stores, schools, markets, hotels, and restaurants. Retailers also noted that sales had been increasing until COVID-19 caused sharp reductions due to forced closures. Cooperatives and processors reported decreases in workers, which affected processing capabilities. The breeder noted that, while sales of cattle increased over the last 12 months, this was due to involvement with the project—that without MERCADO, sales would likely have decreased at least in part due to COVID-19, since there had been a longer list of interested buyers before COVID-19, many of whom dropped off the list during the pandemic.

Local Security Concerns. Almost no cooperative or processor reported any impacts on milk and milk product sales due to local security concerns.

Exhibit 61. Impacts of COVID-19 on Milk Sales

Milk Sales	Cooperatives	Processors
Volume of Milk Sales		
Stayed the same after COVID-19	25%	22.22%
Decreased after COVID-19	75%	77.78%
N	4	9
Reduction in sales in liters per month	202 liters	773 liters
N	4	6

Note: N corresponds to the observations used to generate the average value above it, and is the number of businesses who reported their sales figures.

3.2.4 Milk Quality Testing

In this section, we report on the types of quality and methods of quality checks, and rejection rates for milk and milk products by cooperatives and processors.

Quality Checks of Milk and Milk Products

As we show in **Exhibit 62**, we asked about testing for water adulteration, bacteria, butter and fat content, antibiotic residue, pH level for acidity, mastitis, freshness of milk. Among cooperatives we see a significant increase in testing for water adulteration from midterm to endline (significant at the 5 percent level), as well as increases in testing for bacteria, butter and fat content, and freshness of milk. For processors, there was an increase in testing for butter and fat content, and mastitis (both significant at the 10 percent level), as well as water adulteration, bacteria, antibiotic residue, and freshness of milk. In line with the findings on quality checks, most cooperatives and processors used instruments for testing the quality of

incoming milk. Taste, smell, and visual inspection were the most common tests conducted by all the cooperatives and processors. Qualitative findings presented that cooperatives changed milk quality testing procedures after receiving trainings. While this was also true for some processors, others shared either not having quality testing equipment or relying on cooperatives to supply milk that had already been tested.

Exhibit 62. Milk and Milk Product Quality Checks by Cooperatives and Processors

Quality Check (Test)	Cooperatives		Processors	
	Midterm	Endline	Midterm	Endline
Water adulteration	40%	100%**	71.43%	88.89%
Bacteria	60%	100%	28.57%	44.44%
Butter and fat content	80%	100%	28.57%	77.78%*
Antibiotic residue	60%	33.33%	28.57%	33.33%
pH for level of acidity	100%	100%	85.71%	77.78%
Mastitis	100%	100%	71.43%	100%*
Freshness of milk	80%	83.33%	71.43%	66.67%
N	5	6	7	9

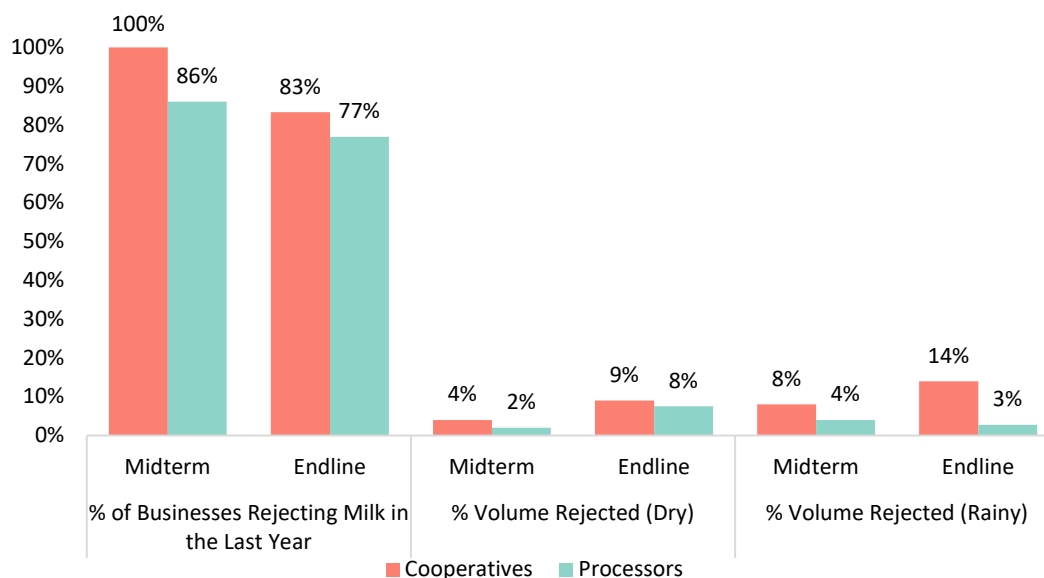
* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: Multiple responses were allowed, so responses add up to more than 100 percent.

Milk Rejection Rate

Exhibit 63, we report the proportions of cooperatives and processors who rejected milk in the last 12 months, and the volume of milk rejected in the rainy vs. the dry season. Although none of the findings was significant, a major proportion of cooperatives and processors rejected incoming milk at both midterm and endline. Cooperatives rejected 4 percent of the incoming milk in the dry season at midterm and this increased to 9 percent at endline. For processors, too, there was a jump in the percent of milk rejected in the dry season from 2 percent at midterm to 8 percent endline. In the rainy season, there was no clear pattern. Cooperatives saw an increase in the percentage of milk rejected from midterm to endline, while for processors it remained similar across midterm and endline.

Exhibit 63. Milk Rejection Rates and Volume Rejected for Cooperatives and Processors



* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

Note: Statistical significance comparison is between midterm and endline values.

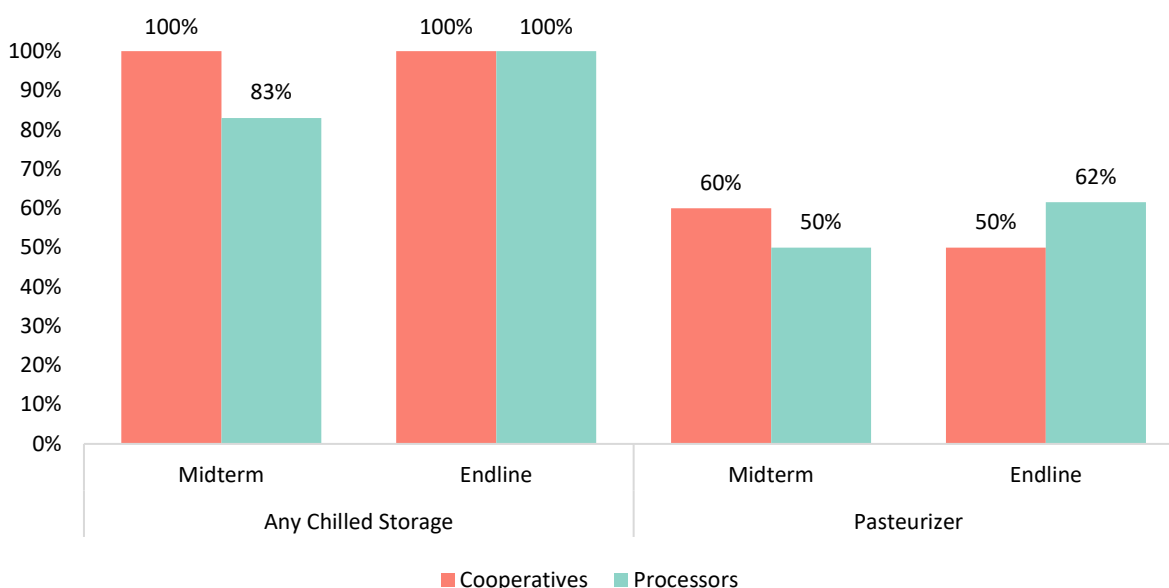
N = 5 midterm cooperatives, 5 endline cooperatives, 7 midterm processors, 13 endline processors

3.2.5 Equipment

This section reports on the types of equipment used by cooperatives and processors. More than 80 percent of cooperatives and processors owned chilled storage for milk (bulk milk tanks, chilling systems, or bulk refrigerators) at midterm. At endline this share rose to 100 percent for both cooperatives and processors reporting owning at least one of the three types of chilled storage for milk. Ownership of pasteurizers remained similar among cooperatives and processors across midterm and endline.

Existing and new dairy milk producers, cooperatives and aggregators, input businesses, and service providers used MERCADO DIF grants for co-financing equipment, infrastructure, and other innovations to expand their businesses.⁵⁴ The cooperatives, processors, and breeder showed great interest in using the DIF to increase their procurement, processing, collection, and sales. Stakeholders—cooperatives, processors, breeder, and others—shared receiving a wide variety of equipment with financial assistance, ranging from larger items such as pasteurizers, refrigerated trucks, refrigerators, freezers, and packaging machines, to milk collection tools such as funnels, buckets and cans, and machinery such as a feed mixer and rotary mower. They also identified access to equipment due to both, lack of local access and lack of finance as a likely challenge in the future after the project ends.

Exhibit 64. Types of Major Equipment Owned by Cooperatives and Processors



* $p < 0.10$; ** $p < 0.05$; *** $p < 0.01$.

N = 5 midterm cooperatives, 6 endline cooperatives, 6 midterm processors, 13 endline processors. Multiple responses were allowed, so responses add up to more than 100 percent.

⁵⁴ There are two gates for the DIF. Gate 1 is mostly used for grants, with a ceiling of \$12,000, and requires beneficiaries to contribute 20 percent, while using 80 percent of grant funds for the purchase. Gate 2 extends to a ceiling of \$500,000 and requires at least 50 percent beneficiary participation.

SECTION 4. QUALITATIVE FINDINGS

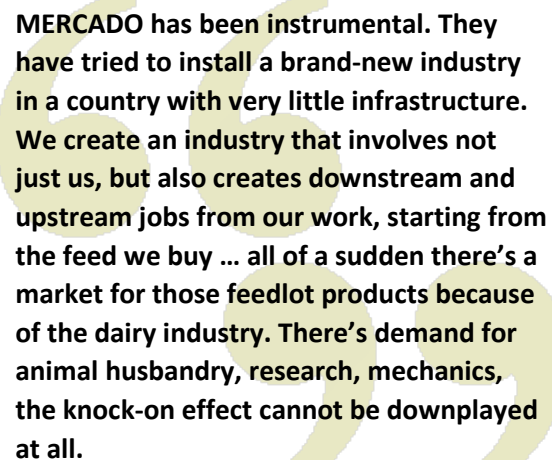
This section presents the most pertinent findings from our qualitative analysis, drawing upon the KIs and FGDs conducted with dairy value chain stakeholders and project participants—farmers, cooperatives, processors, breeder, retailers, student interns, lecturers, community livestock workers, veterinary shops, and feed suppliers. Where relevant and appropriate, IMPAQ provides perspectives from Venture37 project staff, USDA, and government officials. The qualitative results reflect the opinions and attitudes of a small sample of respondents. They provide context to help with interpretation of the quantitative findings, and highlight areas that could benefit from further exploration and study. Through these KIs and FGDs, we assessed the relevance, effectiveness, efficiency, perceived impact, sustainability, and gender equality and equity of the MERCADO project at endline. Following the organization of research questions in the endline terms of reference (TOR), we break down the presentation of results into the categories of relevance, effectiveness, efficiency, sustainability, perceived impact, and gender equality and equity. We provide details in the appropriate categories below.

4.1 Relevance

Through interviews with project staff and government officials, the research team assessed the relevance of the MERCADO interventions at endline. Interview topics focused on stakeholder satisfaction with project participation, and the project's alignment with US and Mozambican government priorities. We also asked stakeholders to describe their perceptions regarding barriers to expanding the dairy industry.

4.1.1 Stakeholder Satisfaction with Project

Stakeholders across the dairy value chain reported being largely satisfied by the project's activities in the dairy sector. Farmers, cooperatives, and processors were pleased with the support for infrastructure building and equipment, as well as trainings on animal health and diseases and recordkeeping, as they had seen increased milk quantity and improved milk quality since the project's implementation. The changes in milk quantity and quality are further discussed in their respective sections under **Section 4.4**. This increase in quantity and quality impacted other parts of the dairy value chain: Community livestock workers and veterinary shops saw the number of farmers and cooperatives that requested their services and products increase, in recognition of their importance in maintaining animal health and improved milk production. Stakeholders were also satisfied with the role the project played in marketing and raising awareness of dairy products in the country. A processor in Sofala explained, "The biggest support of the MERCADO project is the promotion of milk and its derivatives on holidays at the provincial level to disseminate the image of what is being produced, which has resulted in increased sales."



MERCADO has been instrumental. They have tried to install a brand-new industry in a country with very little infrastructure. We create an industry that involves not just us, but also creates downstream and upstream jobs from our work, starting from the feed we buy ... all of a sudden there's a market for those feedlot products because of the dairy industry. There's demand for animal husbandry, research, mechanics, the knock-on effect cannot be downplayed at all.

– Breeder

4.1.2 Project Alignment with Government Priorities

Government officials and project staff discussed how the project aligned with US and Mozambican Government objectives. One Mozambican government official shared, "The project was well designed and suited to the needs of the dairy sector." Another government official said that a major project strength was how the project staff worked closely with the Mozambican government and took ownership. From the US government side, officials described the project as designed with the USDA's FFP strategic

objectives in mind to increase agricultural productivity and trade. Project staff described main project goals to scale up dairy businesses to ensure a sustainable private-sector led dairy value chain in Mozambique. Another official noted alignment with government priorities in promoting market access, food security, and income generation components; and emphasized that the project required co-funding from beneficiaries to invest some of their own money in their businesses, which would promote sustainability. The official explained: “This project focused on teaching, educating, and making beneficiaries realize they cannot depend on outside funding and resources indefinitely. USDA likes these aspects for sustainability.” However, it was expected to be challenging for farmers to afford to buy cattle and other items without assistance after the project ended.

4.1.3 Barriers to Growth in the Dairy Industry

To identify barriers in development of the dairy industry, the project conducted a special study published in 2017, at baseline, and used the results to inform its activities.⁵⁵ At the farmer level, barriers included lack of understanding about quality, milk production, animal health and care, and understanding the role of cooperatives. At the processing and market level, barriers included a market dominated by imported milk; poor relations between milk buyers and suppliers; lack of management capacity and investment in processing facilities and marketing; and infrastructure challenges such as access to adequate water, energy, and roads. At the policy level, barriers included lack of regulatory and support frameworks, resulting in uncoordinated development in the dairy sector, and challenges for local actors to compete in a market dominated by imported milk and dairy products.

At midterm, major barriers identified included high cost of feed, and farmers’ need for knowledge and support on animal health and milk production and quality. This barrier was also identified at endline. Also described were procurement barriers—such as poor roads, especially during the rainy season; low prices paid to farmers and cooperatives; need for more connections between dairy value chain actors, and challenges with following contracts and access to finance—which were also noted at endline. Lastly, there was a noted lack of local dairy supply and a need for improved packaging, marketing, and branding of local milk products for local processors, a barrier also noted at endline. Lack of legislation supporting dairy sector investment was identified in the midline study, and also noted at endline. New barriers discussed at endline included lack of access to local animals and inputs such as equipment and medication, as opposed to imported ones.

The project tackled knowledge barriers through a variety of trainings to all stakeholders, as well as revision of student dairy curriculum—so new entrants in the sector were equipped with required skills, as well as new methods and technology. Dependence on imported animals and inputs was addressed by encouraging local breeding of cows, and creating connections with veterinary shops. The project facilitated linkages between different dairy value chain actors to promote connections between suppliers, buyers, input and service providers, and retailers. Local dairy product consumption was promoted through fairs, and working with processors and retailers to market products. With respect to credit access, a member of the project staff stated that the project initially planned on identifying formal financial institutions to open credit lines within the sector. However, during implementation, project staff found that many financial institutions were wary of investing in dairy due to lack of knowledge on the sector. Additionally, many in the dairy sector at the grassroots and smallholder levels were not eligible for bank financing. Formal financial access was only available to larger commercial farmers, or to retailers with assets. Small farmers, in contrast, were unable to use land as collateral. Thus, for small farmers, the project helped created village savings and loan associations (VSLAs), in addition to the DHF and the DIF, which

⁵⁵ MERCADO Special Study, Barriers to Growth, 2017.

were open to all types of actors in the dairy value chain.^{56,57} Finally, with respect to government legislation, all interviewed government representatives acknowledged that lack of dairy legislation had been a barrier to growth in the industry, leaving a lack of policies and strategies to organize the sector. According to one national government official: “The barriers to growth of the dairy industry include first, the lack of policies and strategy to structure and guide the sector.” The project worked with government agencies to draft relevant legislation that was still awaiting approval from parliament at endline. Government representatives stressed the importance of public-private partnerships to support further dairy sector development.

4.2 Effectiveness

We assessed the effectiveness of project activities through interviews with stakeholders, focusing on program implementation of training, financial assistance, and capacity building. Additionally, we examined successes, challenges, and recommendations regarding project implementation.

4.2.1 Project Implementation of Training

Trainings the project provided various to stakeholders ranged from the care of animals and milk production to processing and retail. Trainings to farmers, cooperatives, community livestock workers, processors, and retailers included livestock management in terms of animal health: disease and mastitis prevention, vaccination, identification, treatment, and medication. Trainings also included reproductive management and detection of when cows were ready for insemination. Stakeholders further received training in animal nutrition—including grazing practices, processing feed, creating fodder and mineral blocks, and the addition of supplements. In addition, the project provided training in kraal building and cleaning, milk quality testing, milk storage, and dairy product processing, as well as financial management skills (saving, accounting, recordkeeping, and creating viable business plans).

4.2.2 Project Implementation of Financial Assistance

MERCADO provided resources to stakeholders in a variety of ways, including through financial assistance. The project ran the DHF and DIF, which approximately 100 farmers, cooperatives, processors, and other stakeholders availed successfully over the entire project, according to project staff and MERCADO semi-annual performance reports—with 29 additional grantees dropping out due to not being able to provide cost-share contributions, meeting 92 percent of the project target.⁵⁸ For those able to access funding through the DHF and DIF, herd sizes increased. However, several who applied for the DHF and DIF were unsuccessful, because they did not have the financial means to participate in the co-financing scheme. When the project recognized that co-financing was a challenge for many stakeholders, it aided in creating VSLAs.

The project also helped build milk collection centers, so farmers could deposit raw milk and maintain quality. Farmers, cooperatives, and processors either received or partly paid for equipment to aid in milk collection as well (such as cans, funnels, sieves, buckets, tanks, pasteurizers, and fridges). And they received supplements, medication, and veterinary kits, in addition to construction of kraal and

⁵⁶ The DHF enabled enterprise-minded farmers to access capital to purchase both imported and local dairy cattle. Commercial breeders could also access this fund to expand their dairy herds and to invest in appropriate reproduction techniques to reduce the need for imported cattle in Mozambique. Venture37 also used the DHF to provide in-kind grants using a scaled match component.

⁵⁷ Entrepreneurs, including input and service providers, producers, processors, and retailers, could access to finance equipment, infrastructure, and other innovations to expand their businesses through the DIF. MERCADO also identified entrepreneurs in input or service provision, and linked them to the DIF or financial institutions to access finance to develop and grow their enterprises. MERCADO used the DIF to administer in-kind grants using a scale match component.

⁵⁸ MERCADO Semi-Annual Performance Report, October 2020 – March 2021

motorcycles. Stakeholders also requested further resources, such as equipment, machinery, assistance building kraals, and water access.

4.2.3 Project Implementation of Capacity Building

Beyond trainings on various topics and financial assistance, the project implemented capacity building activities, at times adapting to needs in the field. For instance, the project supported the breeder in navigating government agencies to import genetics, which was vital to obtain hardier dairy cattle breeds. Further, while initially planning to establish a national dairy representative body, the project shifted work to prioritize facilitating creating and formally registering provincial dairy unions in Manica (COCOLEMA) and Sofala (SOLEITE), to promote dairy and coordinate with government officials to address challenges in the dairy value chain. Additionally, the project implemented activities to support students aiming to work in the dairy industry in the future, as described below.



It was interesting to know that the quality of food directly influences the quality of milk.

Student intern, Manica

Educational Curriculum. The project worked with educational and vocational institutions to revise the dairy curriculum to best equip students with the skills required in the dairy industry. While many lecturers interviewed had already started implementing the revised curriculum, several were still waiting on their institutions' approval to start using it. Both lecturers and students agreed that the curriculum changes aided students in getting a wider breadth and depth of knowledge of the dairy sector. In particular, many students mentioned, as useful knowledge, learning about cleaning kraal and feeders, as well as boosting animal nutrition through hay and mineral blocks. Students also desired further knowledge on animal health in regard to combating diseases through

vaccinations, treatments, and medications.

Student Farms. Several institutions maintained a student farm to give students a more holistic learning experience. Institutions that did not have student farms on their campuses partnered with local farmers or producers to give students hands-on experience. All students with access to farms directly, or indirectly through their institutions, praised the ability to enhance theoretical classroom learning with practical skill development. One student in Manica without access to a student farm lamented that lack of practical experience made him a less competitive candidate in the milk production space.

Student Internships. The project worked in tandem with various types of stakeholders to create internship opportunities for students to get real-world experience in the dairy industry, placing interns with farmers, cooperatives, and processors. Student interns performed multiple activities (cleaning kraals, building mineral blocks, milking cows, testing for mastitis, testing milk quality, and keeping records). All student interns interviewed said they valued the practical experience the internship provided. A member of the project staff noted that some students had found employment due to their participation in the internship. Though student interns found the length of their internships sufficient, many wanted additional experiences, such as in processing dairy or internship with larger companies. Student interns and lecturers noted that communication with the project regarding internships was smooth. Additionally, at least three of the processors interviewed were also affiliated with educational centers, which provided students with opportunities to gain practical experience with milk processing activities.

4.2.4 Strengths: Project Components Working Well

The project had many successes. Many stakeholders referred to the increase in milk volume and quality as key successes that impacted the sector. The project also had success in building infrastructure to enclose cattle, and providing support to expand and diversify procurement chains—for example, creating

more connections between processors and farmers, expanding value-added activities such as milk processing, and conserving and selling dairy products through training and equipment investments in cold storage.

The project had a multi-pronged approach to maintain dairy quality: skill development for community livestock workers and farmers, reduced distances to milk collection centers, and financial assistance with storage and processing equipment. A cooperative in Sofala stated that the project had been instrumental to its success, as it helped farmers understand how a cooperative operated, and how such a set-up would affect them (e.g., shared costs and risks). Working with the project enabled farmers to preserve milk until its arrival in a milk collection center and receive a higher payment for maintaining milk quality. Increasing quantity and quality had a further impact on the value chain, exemplified when a processor stated he appreciated the ability to buy milk from the milk collection centers. Stakeholders said the project had increased their market access by providing linkages to other actors—such as new buyers for farmers and cooperatives, and connections for processors to retailers to buy their products. With the increased number of processors and retailers locally, along with the increased volume of dairy and more marketing, dairy consumption expanded; and local products could be found in supermarkets and in kiosks, carts, and street vendors.



The Mercado project helped sell the milk because it linked the cooperative to a retailer and processor to purchase the milk.

Cooperative, Sofala

Respondents indicated significant buy-in to project activities by the Mozambican government. On top of conducting joint policy discussions and drafting legislation, the project was instrumental in facilitating the campaign created by producers and government agencies to increase local dairy consumption. Government officials and project staff emphasized that the project's collaboration with the government was a strength, since government ownership would enhance sustainability.

4.2.5 Weaknesses: Challenges with Project Components

The many challenges during the project's life cycle included external factors, such as natural disasters, security concerns, and the pandemic; and the shortened length of the project led to challenges in project implementation. Project staff stated that uncertainties on project length and budget limited the ability to develop activities, and implementation of activities in the final year were ad-hoc. Additionally, currency devaluation of the Metical in Mozambique led to higher prices on goods than anticipated in the project design, adding to the project's financial constraints.

A USDA representative acknowledged that the project was initially overly ambitious. Limited infrastructure, along with a small established dairy sector, led to the project scaling back several times. The USDA representative also acknowledged that a better pre-project evaluation of the situation on the ground would have better informed project design. The initial project design was geared towards large farmers, for example; but most dairy farmers in Mozambique were small to medium farmers, so the project had to adapt to the reality on the ground. The representative also agreed that funding was challenging. With USDA's monetization structure, the project started each year with less funding than expected. Additionally, the possibility of not receiving funding for the next year loomed from the second year onwards. That caused uncertainty and slowing down of project activities, as the project had to determine whether it would stretch the budget, reduce activities, or reduce project involvement in specific tasks. Human capital was also a challenge. This was related to the time needed to provide training and coaching to increase the technical capacity of staff in dairy and related areas. For example, the roll out of the DHF and DIF took a long time, given the substantial internal training required to use the

complicated administrative system. Eventually, staff were trained and became comfortable with the processes.

4.2.6 Lessons Learned and Recommendations for Improvement

According to a USDA representative, lessons learned included how to engage with the private sector and youth. This representative, along with project staff, emphasized how important it was for the private sector to be involved in aspects of project design, so it could take ownership of activities once the project ended. Additionally, engaging youth and educational institutions provided a mode of introducing new ideas and methods of working in the dairy sector. Trainings, learning exercises, and use of new products made it less challenging for youth to adapt to changes and adopt new technologies, compared to older actors who might feel more comfortable to continue with previous practices.

Stakeholders made many recommendations. Additional trainings on animal health and nutrition were requested by farmers, cooperatives, and student interns. In particular, farmers specified the need for further assistance with feed and mineral blocks; student interns wanted further training on animal nutrition, disease treatment, medication, and vaccination. A farmer also described a need for more community livestock workers or technicians to maintain animal health. Government representatives echoed the same sentiment when they stressed the need for further vet assistance to aid in animal health and disease control. As one government representative stated: “The department proposed that Venture37 put a project technician in the department with one-year salary, until the government could open a vacancy.” Since Venture37 had highly trained technicians, the department wanted time to create an appropriate job opening to hire those technicians and grow institutional knowledge.

Farmers, community livestock workers, and student interns also made recommendations to include or improve artificial insemination training. Additionally, farmers made recommendations for the project to assist in individual infrastructure development: build kraal and feeders; procure machinery for cutting fodder; and access water during the dry season, perhaps through waterholes.

The transport of dairy products was a key concern shared by farmers, cooperatives, and processors. While the project did reduce distances needed for farmers to travel, by linking them to existing milk collection centers and cooperatives, there were still challenges for farmers to access these in some areas during the rainy season. The project facilitated access to bulk milk cooling tanks, chest freezers, vertical display fridges and provided capacity building, so farmers could deposit raw milk in a safe way. The project also supported some farmers, processors, and retailers to improve transport of raw milk and processed dairy products by facilitating access to motorized vehicles, such as motorcycles, cargo tuk-tuks (three-wheeled motorized vehicles) and refrigerated trucks through the DIF; however, uptake was relatively restrained as cost-share capacity of some farmers was limited. However, there was still a need for further improvements in transportation to allow dairy products to maintain quality—especially for processors to collect milk and distribute milk and other dairy products—given the challenges with road quality and vehicle access.

4.3 Efficiency

Through interviews with project staff and government officials, we assessed how project resources led to results achieved, and we looked at cost efficiency and timeliness for achieving objectives. Additionally, we examined project management, monitoring, collaboration with stakeholders, and responses to midterm evaluation recommendations.

4.3.1 Project Management and Monitoring

Management. Government officials consistently shared experiencing strong and competent project management at both central and provincial levels. They especially noted the role of project leadership in being integrated in the Mozambique community and having expertise in the dairy business. For their part, project leadership described using an adaptive management approach, giving it the flexibility to incorporate lessons learned and make changes as needed.

Use of Project Resources. Given external shocks—such as Cyclone Idai and the COVID-19 pandemic, among others—government officials noted good communication from the project, including making budget adjustments as needed.

Officials reported no budget concerns with submitted reports. Another government official conceded that, although the dairy project was expensive, it was important to look at the benefits and how farmers and other dairy sector stakeholders were doing after the project ended. In particular, the official stressed seeing real cultural changes brought about by the project in teaching, as well as changing attitudes regarding the dairy value chain. Project staff noted the internal challenge with less funding than expected each year, due to changes in freight budgets and USDA monetization. The project also ended a year earlier than expected, as discussed in **Section 4.4.8**.

Project monitoring and evaluation. Project staff described using monitoring and evaluation (M&E) data, studies, and surveys to adjust activities and identify training needs for beneficiaries. For example, adjustments were made to financial services activities, in which the project started promoting community savings groups to provide access to credit, which had not been part of the original plan. Additionally, the project used M&E data to inform structuring cooperatives, establishing unions at the provincial level, and training dairy sector actors in milk testing and quality. Project staff also noted that the M&E data allowed for focusing, adjusting, and targeting training and business needs for beneficiaries; and for informing regular meetings with grant beneficiaries. Some project staff noted challenges with M&E system implementation, especially that beneficiaries did not always record complete information. This included not recording milk sold directly to customers in the informal market, and some records being lost or not collected during Cyclone Idai. Staff also shared challenges with M&E data collection when staffing changes occurred, as the project shifted from technicians providing general technical assistance to farmers, and to dairy business officers providing business coaching. This was especially the case with getting reliable data from small farmers.

4.3.2 Achievement of Project Timeline

Most project stakeholders—including cooperatives, farmers, CLWs, lecturers, retailers, and veterinary shops—said that activities were carried out, trainings were received, and resources arrived on time. However, some farmers said that delivery of animals as part of the DHF was delayed. This was noted by both project staff and government officials, noting import restrictions on cattle due to multiple outbreaks (including in March 2020) of foot and mouth disease in South Africa and Mozambique, which delayed import, purchase, and distribution of animals to grantees. In addition to delays receiving animals, grantees such as farmers, processors, and retailers reported delays in receiving other resources through the DIF, including animal medicines and milk scanners.⁵⁹ Government officials said clear communication existed regarding any delays, which were typically out of the project's control. A local government official noted

They had to pivot two to three times from standard project management model to emergency management: use funds instead to save some of the cattle, or rebuild things destroyed by cyclones ... and [went] back to regular management very quickly.

Government official

⁵⁹ MERCADO Semi-Annual Performance Report, October 2019 – March 2020

receiving regular reports, but that there were sometimes delays due to the project's provincial staff needing authorization from central staff prior to sharing certain information. Project staff also noted that the project was not able to begin until after the baseline study was approved, which caused some delays at the beginning. In addition to foot and mouth disease outbreaks, project staff described other external factors, such as Cyclone Idai, that set back progress by 12-18 months. Cyclone Eloise, making landfall in January 2021, moved back progress as well; and the COVID-19 pandemic, limiting work from March 2020 onwards, resulted in school closures—preventing activities with school groups from taking place as planned and suspending the student internship program. The project worked to adapt to these external factors by reviewing the annual work plan and budget to determine which activities to prioritize, according to a semi-annual performance report—for example, focusing on Activities 1 and 2, to monitor grantees and deliver materials through the DIF grant and cattle through the DHF grant; providing targeted capacity building for Activities 3 through 6; and finalizing policy actions with the Mozambican government.⁶⁰

4.3.3 Collaboration of Project with Stakeholders

Government officials, student interns and lecturers, and project staff all discussed collaboration and coordination for the MERCADO project. On the education side, nearly all student interns interviewed said they had good communication with the project and internship hosts. While one lecturer reported not being directly engaged with the project other than students participating in internships, all the other lecturers interviewed noted good relationships and communication with the project. For example, two lecturers emphasized project successes in providing training for students and teachers, and improvements and revisions to the curriculum. A challenge noted one lecturer noted was not having the opportunity to receive dairy cattle, due to not having the necessary facilities and resources. Another lecturer applauded how the project improved the practical component for student learning.

Project staff and government officials discussed their coordination for the project. Both groups spoke about close collaboration on updating dairy sector legislation, drafting the National Dairy Sector Development Strategy, and providing support for improving management of the Beira Dairy Factory.⁶¹ Both groups also noted that the project provided regular reports to government officials. Project staff described working together with all levels of government institutions, including central, provincial, and district levels. Project staff said that government officials were involved throughout the project from its launch, as implementing partners and as government-appointed focal points in districts with project activities. However, some government officials said there could have been improvement in coordination with district livestock delegates appointed as focal points for dairy activities in the district and collaborating and monitoring MERCADO project activities—specifying that, in some cases, they were not informed where project activities were taking place and not aware of all activities as they happened.⁶² One government official also expressed a desire for veterinary assistance to be more comprehensive, reaching all cattle in areas of project implementation (not just dairy cattle) for disease control and vaccination. Finally, in addition to government collaboration, project staff described close coordination with the private sector in all components of the project.

⁶⁰ MERCADO Semi-Annual Performance Report, April 2020 – September 2020

⁶¹ The Beira Dairy Factory is a government-owned processing plant. A project semi-annual performance report from 2017 notes poor management of the Beira Dairy Factory and a lack of a transparent and functioning dairy processor in Sofala as a major concern.

⁶² According to the MERCADO Narrative Project Progress Report, October 2017–March 2018, project staff worked closely with the National Veterinary Directorate and Ministry of Agriculture, with the government appointing dairy focal points at national, provincial, and district levels in areas where the MERCADO project was operating. These dairy focal points aimed to improve cooperation, communication, and learning among dairy actors, demonstrating the government's interest and commitment to the dairy sector. The project held a brainstorming session with all dairy focal points to review opportunities and challenges.

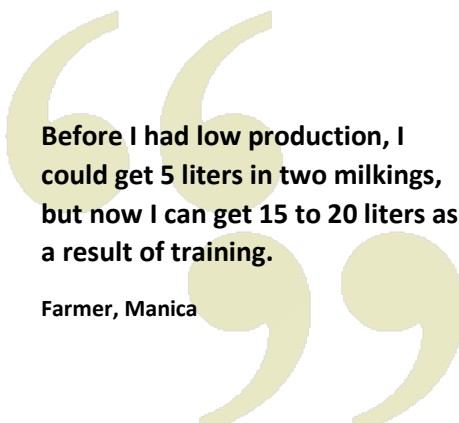
4.4 Perceived Impacts

Although the qualitative data cannot yield definitive causal conclusions about program impact, stakeholder perceptions of change brought about by MERCADO indicate areas where the project potentially had a beneficial effect, while pointing out other areas that may require attention. This section focuses primarily on perceived impacts of project activities—on stakeholder practices; dairy value chain linkages; milk procurement, sales, and quality; and dairy policy changes. This section also covers effects due to external factors.

4.4.1 Challenges and Changes in Practices

Farmers. Most farmers spoke about changes to the practices for improving animal health, feeding, and water. For example, for animal treatment, farmers shared identifying sick animals, cattle baths, and learning about veterinary stores for necessary supplies. Farmers also reported improving feeding after learning how animals should eat properly with a balanced diet, including mineral blocks and supplements, and access to clean water. Farmers also spoke about improving their animals' environment with more cleaning of kraals. A few farmers shared making changes in business and farm management after receiving refresher trainings through the project. These changes included better record keeping, tracking sales and profits, and joining and selling to cooperatives.

As a result of training and participating in the project, some farmers reported increased milk production. Project staff supported these findings, noting that farmers adopted good production and post-harvest practices, including improving animal feeding, leading to increased production and improved milk quality.



Before I had low production, I could get 5 liters in two milkings, but now I can get 15 to 20 liters as a result of training.

Farmer, Manica

As a result of increased production and sales, some farmers in Manica and Sofala reported having improved family income due to participating in the project. Student interns echoed findings that the project affected farmers by providing support, helping improve milk production, providing training, and improving livestock management. These supports combined to improve living conditions and income generation for farmers. A farmer in Manica reported increasing herd size to become a medium-sized farmer: “It had a positive impact because [as] we started from small producers to medium producers, the herds

increased.” This was supported by project staff, noting that many producers had increased from small to medium size, saying, “MERCADO has increased the number of producers and their level, many producers have more than four animals in production.” Despite these positive experiences from many farmers on milk production and milk quality, we also heard challenges from some farmers, such as maintaining animal health, especially with pure-bred cows and a belief that cross-bred cows were more resilient. Some farmers also noted challenges to increasing the number of cows in their herds; getting enough feed, supplements, and mineral blocks to improve milk quality; and finding good buyers for their milk.

Cooperatives. When asked about changes in practices, most cooperatives described improved record keeping for better management, transparency, and monitoring of activities and sales. Others noted providing support services to farmers (such as feed, hay, and mineral blocks), to help improve the amount and quality of milk produced. Many cooperatives also noted changes in milk quality testing after receiving training—for example, starting to use CMT, lactoscan (milk analyzers), alcohol, water, mastitis, and fat content tests. Lack of adequate milk quantity was the most common challenge shared by cooperatives. To address this, some cooperatives increased purchase prices to motivate farmers to bring more milk, noting beliefs that farmers were producing less milk, selling to buyers for a higher price, or selling in the informal market. They also said that project staff helped raise awareness and provide training to

encourage farmers to bring milk to cooperatives. However, one cooperative in Manica reported not buying or selling any milk in the last 12 months. Other challenges included lack of access to credit, especially from banks, and a need for more dependable buyers to commit to collecting milk each month and providing timely payments to be able to pay farmers on time, as well. However, with assistance from the project, a few cooperatives described investing in new equipment such as refrigerators, freezers, and coolers. Additional challenges shared included having an adequate power supply and the need for backup power in case of outages.

Processors. Regarding current practices and changes made since participating in the Mercado project, processors noted improved record keeping, improvements in milk quality testing, investing in new equipment, paying higher prices to increase volume of milk purchased, and renting vehicles for product distribution. Most processors described having better record keeping after receiving training for better accountability, business management, tracking performance—including sales, controlling production, and creating monthly reports. A few processors also reported making changes to milk quality testing after receiving training, such as using CMT, lactoscan (milk analyzers), and pH tests. Many processors described investing in new equipment, in some cases with financial assistance from the project—such as purchasing cans, buckets, sieves, refrigerators, freezers, refrigerated trucks, packaging machines, and milk analyzers. Regarding transportation challenges, one processor said the project helped by creating milk collection centers, where the processor could go to buy milk instead of going to each farmer, given poor road conditions. Another processor, lacking a vehicle for product distribution, decided to rent one—but would have liked support from the project to purchase one, noting that this item could have been requested with DIF but would require cost-sharing. For inadequate milk quantity, some processors in Manica increased prices paid to producers and cooperatives for high quality milk.

Processors identified challenges regarding milk quantity, milk quality, access to finance, and transportation of milk products. Regarding transportation, processors noted challenges distributing milk and dairy products to buyers. For example, one processor lacked a vehicle and had to rent a motorbike taxi to get their dairy products to nearby communities. While processors appreciated being able to go to milk collection centers and cooperatives to get milk, as opposed to coordinating with individual producers, they did note challenges with transportation, especially in the rainy season with bad road conditions. Many processors, especially in Sofala, shared not getting enough milk. Processors explained that this was primarily due to cooperatives not getting enough milk from farmers—which, in turn, meant not having enough to sell to processors. They described providing support to cooperatives, sensitizing farmers, and in some cases wanting to start their own milk production to avoid relying on others. Some processors described challenges that included not receiving milk of good quality, high costs of packaging supplies, a need for better marketing and visibility, need for backup power, and lack of qualified labor for processing. Similar to cooperatives, processors also noted challenges in accessing finance, specifically from banks.

Breeder. The breeder reported positive changes in practices, such as having an in-house breeding program using imported semen, with assistance from the project in navigating expenses and government processes for importing semen needed for artificial insemination and crossbreeding. The breeder said the project also provided financial assistance for improved practices—including equipment such as a feed mixer to provide a balanced diet for cattle, and a mower; and infrastructure such as a shed for cattle to provide shade, and technical assistance such as pregnancy checks and tuberculosis tests.

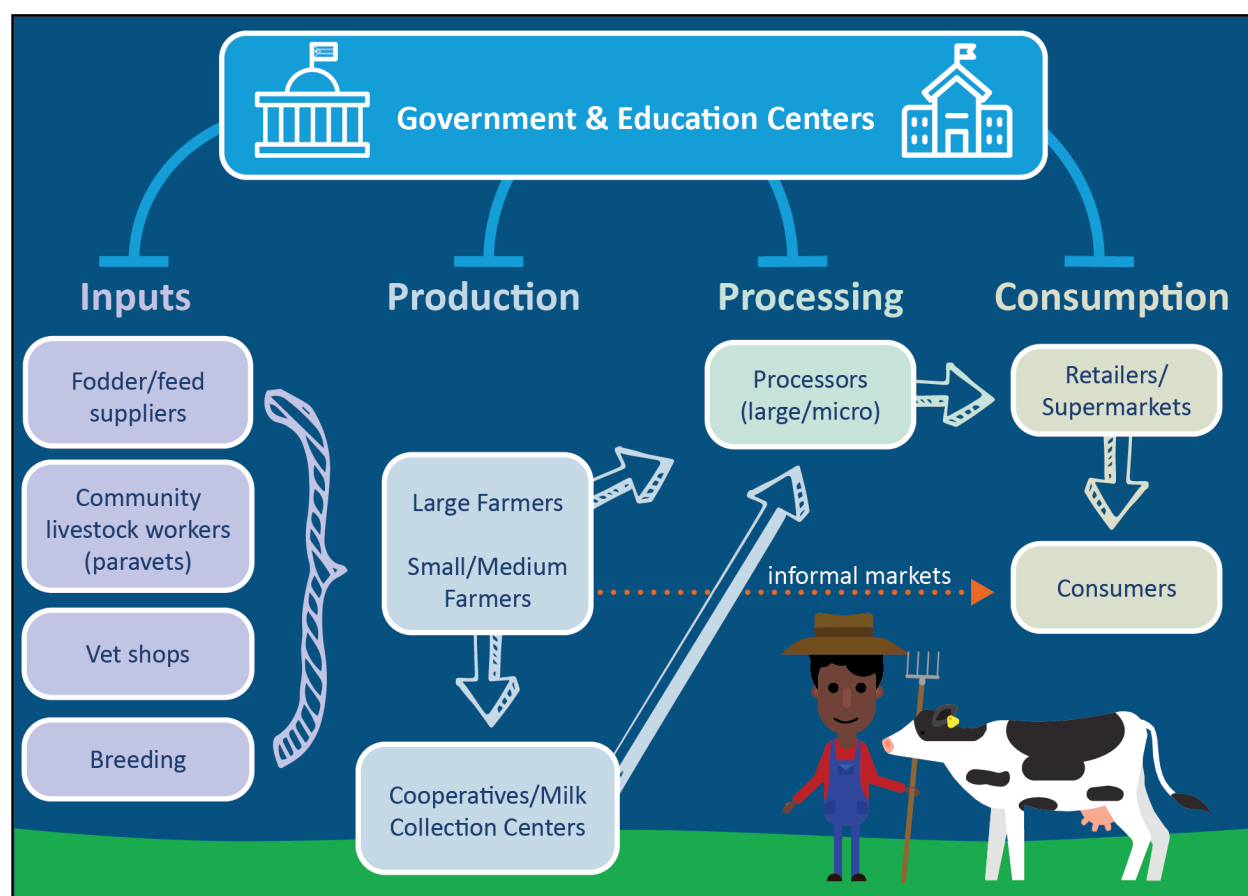
The breeder also described continuing challenges, such as high costs and government bureaucracy involved in obtaining genetics and breeding stock. This involved negotiation between the governments of Mozambique and the genetics' country of origin. For example, the breeder imported genetics from the Kiwi breed in New Zealand, to withstand heat and still produce large quantities of milk. In addition to government bureaucracy, the breeder reported high costs of purchasing, transportation, and storage of the semen. Another challenge noted was the need to import mineral blocks into Mozambique for cattle.

The breeder noted that, while cross-bred cattle were available for purchases, with high demand pushing up prices, the buyers lacked financial means to pay for these cross-bred cattle.

4.4.2 Dairy Value Chain Linkages

This discussion covers dairy value chain linkages, including perceived effects of access to input suppliers and connections between different actors in the dairy value chain. In **Exhibit 65**, we present the diagram on dairy value chain linkages.

Exhibit 65. Dairy Value Chain Linkages



Source: IMPAQ International

Farmers and other project participants discussed connecting to other dairy value chain actors, such as increased access to input suppliers, on their practices. For example, one group of farmers in Manica said that participating in the project increased their demand for supplements, and that they were connected with veterinary shops and other input suppliers. Veterinary shops described a range of customers, from small and large farmers, cooperatives, small companies, to Venture37 staff. Two veterinary shops said they worked with CLWs to provide products to farmers—one working with farmers directly and the other working through Venture37 staff. Government officials noted that, because of the connections facilitated by the project, feed suppliers had an increased market for dairy farmers. Student interns also expressed that the project strengthened connections among educational institutions, students, and farmers.

Through participating in the project, farmers described recognizing the value of animal health, and discussed the need for more CLWs. CLWs, for their part, reported seeing positive changes in practices and outcomes for farmers. For example, one CLW in Sofala described the impact of their work with farmers as

including: “Effective treatment of animals, increased herd, reduced mortality, increased production, reduced cases of mastitis and improved milk quality.” Other CLWs said some farmers—but not all—learned that, to improve milk quality, they needed to provide adequate feed and mineral blocks, and to prevent mastitis for their animals. CLWs also said they had seen more animals dying before, but that after farmers followed their recommendations, along with training from the project, animal mortality decreased.

Regarding milk sales, some farmers discussed starting to work with a cooperative to unite their efforts for better prices, quality, and buyers. A government official shared that individual farmers got to know one another better through working together with the cooperatives. However, one farmer group in Sofala was not happy with the processors engaged with the project, noting that the processors were also producing milk but not bringing it to the cooperative. When asked about connections facilitated by the project, cooperatives noted being linked with new processors, retailers, and farmers. However, a cooperative in Sofala described a need to find new partners and donors for financing and providing payments for products on time.

Pros of the cooperative are that they have the means to test the milk, but sometimes not the amount of milk they want. For farmers, the failure is to not have the means to test the quality of the milk. Prices are high compared to cooperatives.

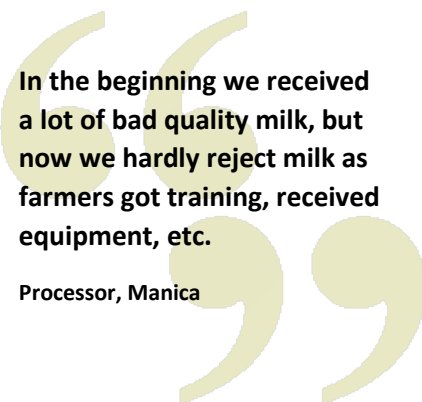
Processor, Sofala

Processors discussed their sources of milk in the dairy value chain, with most, especially in Sofala, preferring to purchase from cooperatives—due to reliability, milk quality testing, low prices, and transportation. This means that the processor can get all milk from the cooperative instead of coordinating with each farmer, as long as the cooperative can provide an adequate quantity of milk. Many processors in Sofala said the project provided connections for them with cooperatives. However, processors noted that the cooperatives did not always have the desired quantity of milk available. In Manica, one processor described a preference for medium and large-scale farmers over small farmers for more consistency in milk quality; but other processors said small farmers were the only option in the area, and this provided much needed

income for the community. In Sofala, two processors said they did not have a preference related to milk suppliers; they just cared that the milk be of good quality; one processor said they were not able to work with farmers due to not having the needed equipment for milk quality testing. At the next step in the dairy value chain, retailers primarily reported purchasing milk and dairy products from one large processor, with one case of buying milk from small farmers. That retailer had also tried working with a technical college processor, but said the product was not accepted in the market due to the poor quality of the packaging.

4.4.3 Milk Quality

Nearly all dairy value chain stakeholders noted the importance of milk quality and changing testing procedures. In Manica, while some farmers noted challenges to improving the quality of their milk, others noted a positive impact on quality after participating in the project with fewer cases of mastitis among their cows and through quality testing. Many cooperatives reported changing milk testing procedures after participating in the program, and seeing improved milk quality after project training. Most cooperatives said they adjusted milk prices based on quality. Most processors described testing milk for quality and to ensure good health and safety. Some noted that they preferred to purchase milk from cooperatives that had already tested milk, or medium to large farmers that had better quality milk. A few processors noted not having the equipment needed for testing, and having to rely on cooperatives to test the milk. All CLWs interviewed said that, based on their work with farmers, the quality of milk improved and there were fewer cases of mastitis.



In the beginning we received a lot of bad quality milk, but now we hardly reject milk as farmers got training, received equipment, etc.

Processor, Manica

4.4.4 Milk Value and Quantity

Perceptions of milk value and quantity varied across stakeholder types in the dairy value chain. For example, farmers interviewed reported increased herd sizes, as well as increased volumes of milk produced after receiving project training. However, they also noted animal mortality and lower milk production after Cyclone Idai. CLWs also shared that farmers had higher production when animals were treated well, and decreased profits when animals were not properly cared for or did not receive enough food. Cooperatives, on the other hand, gave mixed views regarding milk quantity received. While many cooperatives said farmers had more animals and were able to increase production and sales, many other cooperatives described not getting enough milk from farmers, leading to decreased revenues. Their shared reasons for the decreased milk quantity included loss of cows for farmers, reduced productivity, and selling milk to other buyers for higher prices. One cooperative said they had not bought or sold milk in the last 12 months, due to poor milk production from farmers. Among processors, many also described reduced milk volume and resulting sales, and that COVID-19 affected sales with school closures and customers purchasing less milk. Processors noted generally getting lower and more affordable prices when purchasing milk from cooperatives than from individual farmers, but sometimes not receiving the desired quantity of milk. At the retailer level, reaction was mixed—with some retailers saying there was greater demand and increased sales for local products, but others noting that sales at first increased and then decreased due to COVID-19 and market closures, as well as customers losing their jobs and staying home to avoid catching the virus. They described also seeing higher sales immediately after Cyclone Idai, and then decreased sales as customers directed funds towards rebuilding.

4.4.5 Access to Finance

Access to finance has been challenging for farmers, processors, and input suppliers. As noted above, many of these stakeholders applied for the project's grants, with varying levels of success. Access to finance through other means was even more limited. A processor explained that banks wanted assurances in a business plan's yield and had limitations on what type of assets they would evaluate for their credit line. Project staff highlighted that the longer-term impact of Cyclone Idai led to further hesitance in investing in the dairy sector. With the newness of a developing local dairy sector and external factors that have impacted the sector, financial institutions were hesitant to get involved as they did not believe they had sufficient collateral.

There are challenges because most financiers (banks) do not accept the livestock sector as a priority.

Cooperative, Sofala

4.4.6 Role of Marketing and Advertising

Processors, the breeder, student interns, veterinary shops, and project staff discussed the role and importance of marketing for the dairy industry. Processors in Manica and Sofala noted the need for more advertising in the dairy sector—commenting that marketing was expensive and they appreciated when the project provided marketing (for example with advertisements at school fairs), which they said increased sales in schools. Project staff described promoting demand of milk through events, schools, and a 'milk day.' A student intern in Manica echoed the need for more advertising in the dairy sector. The breeder appreciated the project's assistance in advertising about purchasing cattle. Veterinary shops described their own efforts in marketing to reach customers through radio, websites, phone calls, and social networks.

4.4.7 Dairy Policy and Regulatory Framework

Mozambican government officials, USDA representatives, and Venture37 project staff all noted close collaboration on policy—describing the need for an updated legislative framework, and a specific focus on Livestock Health Legislation and National Dairy Development Strategy. Government officials described the need for legislation and policies to better guide and organize the dairy industry. One project staff member emphasized the focus on “what regulations are required so that Mozambique can compete internationally on livestock and dairy.”

To this end, Venture37 project staff provided support to various levels of government on updating the legislative framework for the dairy sector—including the Ministry of Agriculture and Rural Development (MADER), National Directorate for Livestock Development, provincial directorates, and district services. This included developing an approval and roll-out schedule for the Livestock Health Legislation; Livestock Feed Regulation; Regulation on Raw Milk Collection, Refrigeration, and Bulk Transport; and development of the National Dairy Strategy. For example, project staff hosted seminars in 2020 and 2021 with key stakeholders to discuss the National Dairy Strategy, according to semi-annual performance reports.⁶³ Provincial and district level officials in Manica and Sofala said they were involved in the process of drafting legislation. National government officials said that they collaborated with Venture37 staff on drafting the livestock health legislation, which then awaited approval from MADER, before proceeding for review and approval by the

The approval of the regulations would help a lot in improving the procedures and the quality of the milk, which is a great challenge.

Government official

⁶³ MERCADO Semi-Annual Performance Report, October 2020 – March 2021

Council of Ministers and Parliament. In addition to the Livestock Health Legislation, Venture37 provided support for drafting the National Dairy Development Strategy, which national government officials said would continue after the project ends. Project staff highlighted the importance of the strategy for securing funding for future initiatives and directing future investments. Project staff noted intentions to work on other policies, but having to scale back due to timing and budget. Project staff highlighted working with government representatives on drafting policies and coordinating on project implementation. According to a project progress report, the government appointed focal points at national, provincial, and district levels, where the project was active in improving cooperative, communication, and learning between dairy actors—showing the government’s interest in the dairy sector and creating staff members to promote sustainability.⁶⁴ On the project side, there was work to create representative bodies to better coordinate between dairy value chain stakeholders—including cooperatives, members of the private sector, and government officials. Project staff noted starting at the provincial level by forming dairy unions in Manica and Sofala.

4.4.8 External and Internal Factors

Cyclones Idai and Eloise. Two cyclones, Cyclone Idai and Cyclone Eloise, hit Mozambique during the project’s lifespan. Cyclone Idai made landfall in Mozambique in March of 2019, one of the most devastating cyclones ever to hit the nation. Stakeholders across both Manica and Sofala provinces were affected. The cyclone led to high animal mortality, affecting the quantity of milk produced. It also devastated infrastructure and equipment, again affecting the quality of milk produced. More than two years on, many farmers had not been able to replace kraals due to financial constraints and priorities for other necessities. The project adapted to Cyclone Idai. As one member of the project staff explained: “To minimize the challenges, MERCADO reallocated funds and activities to replenish part of the capacities of the main players in the value chain,” such as replacing animals lost and providing medicine kits. However, project staff pointed out that Cyclone Idai caused instability in the investment area, withdrawing the interest of actors to invest in the dairy value chain, which affected implementation of some activities, such as the DIF.

Cyclone Eloise made landfall in Mozambique in January of 2021, less than two years after Cyclone Idai, with varying impacts of stakeholders in Manica and Sofala provinces. In Manica province, while most stakeholders interviewed stated the cyclone had no effect on their practices, some reported loss of farming and business infrastructure, disease and death in animals, and a pause in their activities for a few days. In Sofala province, stakeholders faced a wide set of issues: loss of farming and business infrastructure, disease and death in animals, road blockage due to floods, and a long period of power outage. Although one veterinary shop respondent stated that the impact of Cyclone Eloise was negligible when compared to the effects of Cyclone Idai, another veterinary shop respondent stated he was still recovering from the effects of Cyclone Idai when Cyclone Eloise occurred, which negated his progress since Cyclone Idai. The project was limited in the support they could provide stakeholders in the aftermath of Cyclone Eloise, as the project was coming to an end by that time.

COVID-19. COVID-19 impacted project stakeholders in numerous ways. Cooperatives pointed to the fact that, despite regular milk production, the number of milk buyers shrank, meaning that COVID-19 had a greater effect on sales than on milk production. For example, many processors and retailers typically sold to hotels, restaurants, and schools; and because COVID-19 forced their closure, their milk sales were reduced. Not only did this lead directly to low sales, but the reduced amount of milk bought meant stored milk deteriorated in quality, leading to even lower sales. All these affected farmer payments and prompted low morale amongst farmers. COVID-19 also impacted community livestock workers’ mobility; they had to stay home because trips to provide their services increased the risk of getting or spreading

⁶⁴ MERCADO Narrative Project Progress Report, October 2017 – March 2018

the virus. Other impacts of COVID-19 included less feed and supplements for cows, as families with limited resources prioritized other necessities; loss of dairy sector jobs and freezes on new hires; low availability of equipment; soaring prices of feed, medication, and equipment; delays of imported raw materials; and disruptions to classes and practical learning for student interns.

Low-Intensity Civil War. Stakeholders in both Manica and Sofala provinces stated their milk production had not been affected by the low-intensity civil war. Lecturers in Manica acknowledged that it affected some students, who were unable to participate in internships due to immobility caused by security concerns. Veterinary shops in both Manica and Sofala described a loss of customers due to displacement and loss of homes and animals. Project staff noted that the conflict affected trade, such as processors who stopped distributing their products close to areas where hostilities occurred. A government representative echoed the impact on trade, adding that difficulties in acquiring some inputs and medicines led to the closure of some businesses.

Shortened Length of Project. Had the project continued, stakeholders stated they would have benefited from more technical support, both in resources and in trainings. A cooperative in Sofala summed up the impact of the shortened project length: “If the project continued for another 12 months, it would help in gaining more knowledge and more financial support. And we could request support to repair the milk collection center that suffered from Cyclone Eloise.” Stakeholders also mentioned other requests they would have made to the project given more time: assistance with milk transportation, acquiring more cows to increase milk quantity, acquiring relevant equipment, a semen tank to aid in insemination, and more support for breeding. But some respondents stated that their situations would not have changed much even if the project had continued, as they would still have been unable to participate in the co-financing scheme, and thus remained unable to expand their farm or business.

Government representatives stated that the project’s continuation would have ensured progress in approving legislation and policies relating to the dairy sector. Additionally, they said the project could have continued to work to strengthen the functioning of the Beira Dairy Factory. Project staff also noted that the shortened duration limited project activities. Furthermore, according to a project staff member: “it reduced the opportunity to strengthen the recently implemented actions such as the role of the provincial Union and the investment in processing and selling.”

4.5 Sustainability

To assess the sustainability of project interventions, the research team asked stakeholders which project activities and benefits they expected to continue after the project ended, their future plans in the dairy sector, and understanding the project’s exit strategy to ensure sustainability. Project staff described the project’s exit strategy for sustainability as: (1) promoting connection and linkages among different parts of the dairy sector, and (2) training actors in the dairy sector on how to continue activities to ensure continuity.

4.5.1 Expected Sustainability of Project Activities and Benefits

Sustainability Strengths. Project participants described areas where they expected project activities and benefits to continue after the project ended as including: milk production; continued operations overall for farmers, cooperatives, processors, breeder, CLWs, veterinary shops, and education centers; and policy and regulations.

- **Milk production.** Farmers emphasized that milk production would continue, especially as it was a source of income for families, as well as farm management and activities. One group of farmers in Manica said that they would continue selling their milk to cooperatives; others neither specified their future plans for selling milk produced nor noted challenges in finding new buyers and contracts.

- **Continued operations.** Among cooperatives, most interviewed said they would continue operations and support their farmer members. Likewise, processors mostly said they would continue their overall processing business activities, with some hoping to expand into new production lines. The breeder believed current activities would continue, having developed core competencies. The CLWs also planned to continue providing services, noting that farmers would still need their services after the project ended, and would be interested in more training. Veterinary shops interviewed believed purchases for dairy production would continue, for example, the need for antibiotics and for treatment after detecting disease in cattle. Project staff supported these findings, sharing beliefs that milk production, processing, marketing, and retail activities would continue after the project ended. They added that education would also continue, given that new curriculums focused on the dairy sector would lead to increased technical capacity as students completed their programs. Project staff also noted that individuals had been entering the retail business on their own, demonstrating solid business opportunities in the dairy sector.
- **Policy and regulations.** Multiple officials expressed their belief that the government would continue moving forward with the National Dairy Development Strategy and existing regulations. Multiple national and provincial officials also believed work would continue to find new management to reactivate the Beira Dairy Factory for increased processing in Sofala.

Sustainability Challenges. Project stakeholders also shared areas they perceived as challenges for sustainability of project activities and benefits, including animal health, access to materials, and changes in the dairy value chain.

- **Animal health.** For farmers, perceived challenges included continuing to promote animal health and treatment, as well as providing adequate feed, supplements, and minerals to animals. One farmer shared: “The challenges they will encounter are in animal health. Feeding affects a great deal of profit generation, and it is necessary to feed the animal well to improve milk production, and the biggest is the return.” Government officials also shared concerns about decreases in veterinary assistance for farmers after the project ended, with one official requesting the project to leave a technician with the government for a one-year transition, to continue work with veterinary care and business connections until the government could hire a new staff member the following year.
- **Accessing materials and inputs.** Among processors, expected challenges included obtaining materials such as buckets, which the project had provided. This was echoed by a lecturer who said stores were not selling necessary items, and it would be hard to get those items in the future, since they had been provided by the project. Farmers, cooperatives, and processors also anticipated challenges in getting necessary equipment. And government officials shared that the project had helped obtain many inputs that could be difficult to continue after the project ended.
- **Dairy value chain changes.** One official noted concerns with sustainability, and that milk collection centers and cooperatives might close, resulting in informal sales with farmers selling directly to customers. Some farmers and cooperatives also anticipated challenges in finding new buyers for milk. A project staff member shared that the processing component of the dairy value chain was a real challenge for sustainability, which led to pressure for the government to restructure the Beira Dairy Factory as a large processor in

We don’t have stores selling buckets for milk extraction, stores selling metal milkers, pasteurizers. This is going to be a challenge because the material was provided by Land O’Lakes.

Lecturer, Manica

Sofala. Some project staff said they expected a period of consolidation after the project ended, meaning that larger and stronger farmers and businesses would likely purchase cattle or operations from smaller or weaker farmers and businesses, given the experience with previous projects, which would not necessarily be a bad thing. One staff member shared: “Between the last two projects, we noted that the stronger farmers or new players in the dairy value chain purchased businesses or cattle from smaller farmers. I do think there will be a consolidation of some kind.” A government official echoed that the large and strong farmers would continue after the project, and that small- and medium-sized farmers would also do their best to continue.

4.5.2 Future Plans

When asked about future plans, nearly all farmers interviewed said they planned to continue activities of raising animals and producing milk, especially since this helped with their income and covering expenses. Many also wanted to expand their farming and teach their children how to raise cows and produce milk. Cooperatives also expressed interest in expanding and encouraging farmers to get more cows. Likewise, processors interviewed shared plans to expand and grow—for example, creating new production lines for flavored yogurt, butter, ice cream, and cheese. They said they were also were looking to expand their reach to other areas in the country. This was echoed by retailers, who planned to continue selling local dairy products and expand their reach. One processor emphasized plans to improve branding. Nearly all student interns interviewed said they saw dairy as an attractive sector, with hopes to work as farmers, processors, or in promoting animal health. One student said future work would depend on the options available. The CLWs interviewed also planned to continue their work, with one already having contracts signed with farmers. The veterinary shops interviewed also had plans for expanding their customer bases for dairy products.

4.6 Gender Equality and Equity

Through interviews with project stakeholders, the research team examined constraints faced by women in the dairy sector and actions the project had taken to encourage women’s participation in the dairy value chain.



We liked all the training we had; it was useful because it greatly increased production.

Women farmers, Manica

As described from the farmer surveys, women saw significant increases in the value of daily milk sales in the rainy season. This was supported by focus group discussions with women in Manica who described seeing increased production of milk which improved their incomes and quality of life.

Respondents had differing views as to the barriers faced by women in the dairy sector. While many believed women farmers and other women dairy sector stakeholders did not face additional challenges due to their gender, many others indicated areas where women did face challenges—such as balancing childcare and household responsibilities, and being taken seriously by customers. One female veterinary shop owner described customers questioning her knowledge on products and services, as agribusiness was an uncommon profession for women. Many respondents also stated that women faced challenges in labor-intensive work, such as carrying heavy loads, baling hay, and tilling land. On the other hand, women farmers in Manica shared that men do not clean corrals or fetch water, leaving these tasks for women. An additional limiting factor women faced was time available to juggle multiple roles in the household. While men did not typically participate in housework work, women were expected to complete chores and watch children, limiting the time available to complete both dairy-specific and household work.

To help women get more involved in the dairy sector, the project took several actions. For example, the project encouraged women's participation in trainings. Additionally, following recommendations at midterm, the project prioritized women in its financial assistance fund allocations, by providing a 5 percent increase in scores for women when reviewing grant award applications. One project staff member shared: "My understanding was that in mainly rural societies, women have been discriminated against and have a feeling that they are not eligible to get resources. Mercado adopted criteria to give advantages to women to encourage their participation." The female veterinary shop owner mentioned above as facing customer hesitance also noted that, when project beneficiaries realized she was providing the project with necessary products for them, customers' hesitance faded and they trusted her knowledge of dairy products.

SECTION 5. CONCLUSIONS AND RECOMMENDATIONS

In this report, IMPAQ documents the state at endline of key dairy value chain actors who were MERCADO project beneficiaries; establishes project endline values; and provides recommendations for future programming. At endline, the IMPAQ team collected extensive qualitative and quantitative data from a broad population of dairy value-chain actors. Our mixed-methods approach frames the endline evaluation through the lens of Mozambique's dairy market system, considering how MERCADO's interventions contribute to development of a sustainable private-sector driven dairy market system. Our inquiries at different levels of the value chain paint a broad picture of MERCADO's relevance, impact, effectiveness, efficiency, sustainability, and gender equity. The team collected quantitative data through an extensive survey with 255 dairy farmers. We complemented these quantitative data with qualitative data collected from farmers in FGDs. We also conducted semi-structured surveys with other value-chain actors: cooperatives, processors (including microprocessors), and a breeder. These semi-structured surveys included both quantitative and qualitative questions. In addition, we conducted KIIs with additional stakeholders—including CLWs, lecturers, student interns, retailers, veterinary shops, feed suppliers, government representatives, and project staff.

We structure the remainder of this section as follows. We synthesize the major analytical results from the endline data collection in **Section 5.1**. In **Section 5.2**, we present preliminary findings on how the endline evaluation answered the project's evaluation questions in terms of relevance, impacts, effectiveness, efficiency, sustainability, and gender equity. In **Section 5.3**, we list the limitations of the evaluation. We provide recommendations for the MERCADO project and future programming, based on the endline evaluation findings in **Section 5.4**.

5.1 Key Analytical Findings

Overall, the endline evaluation suggests the project generally was on track to achieve many of the intended objectives, though achievements in some areas were limited. In addition to Cyclones Idai and Eloise, COVID-19 seemed to cause additional challenges for the implementation and effectiveness of the interventions. We outline below the implications of the endline evaluation findings for MERCADO's main outcomes.

Herd Size and Production Practices

- The proportion of medium-scale farmers (four to 19 cows) increased from 6 percent at baseline to almost 19 percent at endline.
- There was a significant increase in herd size for small-scale farmers from two cattle at baseline to three cattle at endline, and medium-scale farmers saw their herds grow from 14 cattle at baseline to 17 cattle at endline.
- The proportion of small-scale farmers who practiced zero grazing declined significantly, from 96 percent at baseline to 75 percent at endline; medium-scale farmers were also significantly less likely to practice zero-grazing at endline.
- The proportion of small-scale farmers who cultivated their own fodder increased significantly from 25 percent at baseline to 41 percent at endline.
- The proportion of small-scale farmers with continuous access to water increased significantly, from around 2 percent at baseline to 10 percent at endline.
- Small-scale farmers were also significantly more likely to use milking machines at endline compared to baseline.
- There was a significant decline in small-scale farmers using AI for breeding, and a significant increase in the use of natural breeding. Ease of access to buying a heifer declined from 32 percent of small-scale farmers finding it easy to access a heifer at baseline compared to 20 percent at endline.

- For dairy farm equipment like stainless steel cans, milk chilling equipment, milk filters, and milk feeders, the majority of farmers continued to rely on Venture37 for replacement of this equipment.

Animal Health Services

- The ease of access to animal health testing increased significantly, with 59 percent of small-scale farmers finding it easy to access testing at endline compared to 36 percent at baseline.
- For almost all diseases—brucellosis, mastitis, and tick-borne diseases—small-scale farmers were significantly more likely to test for their prevalence at endline compared to baseline.
- There was an increase in the proportion of small-scale farmers who vaccinated their cows, from 79 percent at baseline to 83 percent at endline.
- Small-scale farmers reported a significant increase in ease of access to health services, with those reporting that access was easy or very easy increasing from 36 percent at baseline to 43 percent at endline.

Milk Production and Sales by Farmers

- There was a general increase in the daily milk production per cow for all categories of farmers from baseline to endline in the rainy season, for all the subgroups in our analysis. Cows produced on average 7.79 liters of milk per day at baseline for the rainy season and 8.31 liters per day at endline. Women and small-scale farmers saw significant increases in milk production in the rainy season. In the dry season, the daily milk production per cow declined from 7.80 liters per cow at baseline to 6.93 liters per cow at endline.
- The daily volume of milk sales in the rainy season increased from 11.43 liters at baseline to 13.32 liters at endline. Women and small-scale farmers saw significant increases in milk sales volumes in the rainy season. The volume of milk sales in the dry season also increased from 12 liters at baseline to 15 liters at endline.
- The value of daily milk sales in the rainy season increased from USD 5.09 at baseline to USD 9.29 at endline. Once again, women and small-scale farmers saw significant increases.

Milk Procurement by Cooperatives and Processors

- On average, cooperatives procured more raw milk during the rainy season at endline compared to midterm; they procured 17,391 liters (with a value of USD 6,609) over the rainy season at midterm, versus 23,196 liters (with a value of USD 8,190) at endline for the same period.
- In the dry season, cooperatives procured more raw milk at midterm compared to endline; they procured an average of 26,007 liters of raw milk during the dry season at midterm and 17,582 liters at endline for the same period.
- On average, processors procured more milk at endline compared to midterm for the rainy season; they procured a little over 9,500 liters of raw milk in the rainy season (valued at USD 3,993) at midterm, versus 14,237 liters (valued at USD 5,194) at endline. Dry season procurement for processors did not change from midterm to endline.
- The average price per liter of milk procured by cooperatives and processors was similar in both seasons.

Processing of Milk

- On average at endline, processors had a larger processing capacity of 102,639 liters in the rainy season, compared to 87,857 liters in the dry season.
- Processors processed a similar amount of milk in the rainy season (58,286 liters) and the dry season (54,554 liters) at endline.

Sales of Milk and Milk Products by Cooperatives and Processors

- The average volume of milk sold by cooperatives in the rainy season was similar at midterm (16,173 liters) compared to endline (16,473 liters). In the dry season, sales were 17,874 at endline.
- For processors, the volume of milk and milk products sold in the rainy season was 9,750 liters and in the dry season was 10,096 liters.
- There were small seasonal differences in the average price per liter of raw milk sold by cooperatives and processors.

Milk Quality

- The number of times small-scale farmers had their milk rejected in the 12 months prior to the survey decreased from five times on average at baseline to four times on average at endline. Medium-scale farmers had their milk rejected three times at endline compared to eight times at baseline. This finding suggests an overall reduction in the frequency of milk rejection between baseline and endline.
- Quality checks and instruments varied among the cooperatives and processors, with few universal practices beyond the most fundamental. Testing for butterfat content, mastitis, acidity, and freshness were the most common quality checks.

Effects of External Shocks

- Lingering impacts on herd losses because of cattle illnesses after Cyclone Idai continued to be felt. Around 15 percent of small-scale farmers and 17 percent of medium-scale farmers reported that their cattle succumbed to disease because of the cyclone. The average number of cattle lost after the cyclone was 1.67 for small-scale farmers and 5.5 cattle for medium-scale farmers. There were also lingering impacts of the cyclone felt on milk production.
- For small-scale farmers, access to feed supplies (53 percent of farmers) and transportation of products to buyers (50 percent of farmers) were most impacted by the COVID-19 pandemic. Communication or visits from dairy business input vendors and from dairy buyers were also adversely impacted for almost 40 percent of small-scale farmers. Access to animal health/veterinary services was impacted to a lesser extent (around 30 percent of small-scale farmers). The findings were similar for medium-scale farmers.

5.2 Key Findings with Respect to Evaluation Criteria

The endline qualitative approach focused on understanding the six OECD-DAC evaluation criteria: (1) stakeholder satisfaction and project alignment with development goals, objectives, and strategies of USDA, the US government, and the Mozambican government goals (**relevance**); (2) project management, monitoring, and collaboration with stakeholders, as well as project implementation successes, challenges, and recommendations to better understand the **effectiveness** of MERCADO at endline; (3) steps taken to maintain the **efficiency** of project operations; (4) **perceived impacts** at endline; (5) planning for **sustainability** after MERCADO; and (6) extent to which project achieved **gender equality and equity**.

5.2.1 Relevance

To capture the relevance of MERCADO for addressing the dairy sector needs, we consider: (1) stakeholder satisfaction with the project; (2) alignment of MERCADO activities and strategies with government priorities and policies; and (3) barriers to growth in the dairy industry in Mozambique and how the project addressed them.

Stakeholder Satisfaction with Project

- Stakeholders across the dairy value chain reported being largely satisfied by the project's activities in the dairy sector. Farmers, cooperatives, and processors were pleased with the support for infrastructure building and equipment, as well as trainings on animal health and diseases and recordkeeping, because they saw increased milk quantity and improved milk quality since the project's implementation.

Alignment of MERCADO Activities

- The strategy of MERCADO aligned with the priorities of the governments of Mozambique and the United States. Venture37 project staff worked closely with the Mozambican government. For example, government officials described close coordination on policy initiatives including drafting legislation and regulations.

Barriers to Growth in the Dairy Industry

- Stakeholders identified barriers the project tackled—such as lack of knowledge, dependence on imports, lack of connections between different dairy value chain actors, and lack of local dairy product consumption.
- The project also focused on addressing lack of access to credit for dairy sector access as a barrier—first through formal financial institutions, then with village VSLAs, in addition to the DHF and DIF.
- Lack of dairy legislation was a barrier to growth in the industry to organize the dairy sector. The project worked with government agencies to draft legislation that was still awaiting approval as the project ended.

5.2.2 Effectiveness

In examining the effectiveness of the MERCADO project activities at endline, we looked at: (1) the extent to which the training, financial assistance, and capacity building activities had been implemented by the end of the project; and (2) key successes that could be replicated for future projects, as well as challenges, lessons learned, and recommendations for improvement.

Extent to which Activities Have Been Implemented by the End of the Project

- The project provided a range of trainings to stakeholders, including for farmers, cooperatives, processors, and CLWs. Trainings ranged from animal health, feeding, grazing practices, to business planning.
- The project provided financial assistance resources, including the DHF and DIF. While many applicants received the grants, others were unsuccessful, due to not having the financial means to participate in the co-financing schemes.
- The project provided capacity building—through supporting a breeder, promoting dairy sector policies and legislation, and supporting educational centers and students to build knowledge and technical skills for the sector. This included revising the dairy curriculum at educational institutions, helping promote student farms, and providing coordination for student internships across the dairy value chain.

Key Successes and Areas for Improvement

- Key successes include: (1) Mozambican government buy-in to project activities such as policy discussions, drafting legislation, and local dairy consumption campaigns; (2) increasing market access and creating linkages between different dairy value chain actors, such as suppliers and buyers of raw milk; and (3) training to improve quality and quantity of milk produced.
- Key areas for improvement include: (1) continuing training and assistance with animal health and nutrition; (2) increasing access to community livestock workers and animal health technicians;

and (3) providing assistance with transportation, especially for cooperatives to transport milk to processors, and for processors to transport milk and dairy products for distribution.

5.2.3 Efficiency

To analyze the extent to which MERCADO was efficient, we explored: (1) project management and monitoring, including use of M&E data; (2) timeliness of project resources and activities; and (3) how the project collaborated with stakeholders.

Project Management and Monitoring

- Project staff reported using M&E data to adjust activities and identify training needs for beneficiaries. For example, they noted adjusting financial services activities by starting community savings groups for credit access.

Achievement of Project Timeline

- Several external factors affected the timing of project activities. Factors included delay in distributing cattle through the DHF due to an outbreak of food-and-mouth disease, delay or redistribution of resources due to Cyclone Idai and further setbacks with Cyclone Eloise, and school closures and forced suspension of the student internship program due to COVID-19.

Collaboration of Project with Stakeholders

- Lecturers and student interns described good communication with the project, as well as assistance with revising curricula and practical experiences for students.
- Government stakeholders noted close collaboration on preparing dairy sector legislation, the National Dairy Sector Development Strategy, and support for improving Beira Dairy Factory management.

5.2.4 Perceived Impacts

We outline below the main perceived impacts of the MERCADO project on: (1) stakeholder practices; (2) dairy value chain linkages; (3) milk procurement and sales, safety, and quality; (4) dairy policy and regulatory framework progress; and (5) production and sales due to external factors such as cyclones Idai and Eloise, COVID-19, low-intensity civil war, and shortened length of project.

Stakeholder Practices

- Farmers described improving animal health, feeding, and water practices after receiving training and resources from the project. They noted that this resulted in increased milk production, which was supported by CLWs.
- Cooperatives described improved milk quality testing, record keeping, and providing support services for farmers.
- Processors noted investing in new equipment, improving milk quality testing and record keeping, and in some cases, paying higher prices to suppliers to access more milk.
- The breeder reported continuing with AI and cross-breeding to improve cattle sales in the country and for their own herd.

Dairy Value Chain Linkages

- Veterinary shops described being connected with farmers, CLWs, and cooperatives. Government officials noted that the project facilitated connections, leading to an expanded market for feed suppliers among dairy farmers.

Milk Value, Quantity, and Quality

- Farmers reported increased herd sizes and improved milk production after receiving project training. This was supported by CLWs, who noted increased milk production when animals were treated well.
- While some cooperatives and processors received adequate quantities of milk, many did not, describing reduced sales as a result.
- Cooperatives and processors described improving milk quality testing practices. Farmers also said that milk quality had improved and cases of mastitis reduced.

Dairy Policy and Regulatory Framework

- Venture37 staff collaborated closely with Mozambican government officials in drafting Livestock Health Legislation still under review as the project ended, as well as other regulations and the National Dairy Development Strategy.

External Factors

- Cyclone Idai had a devastating impact across the dairy value chain after making landfall in Mozambique in March 2019. Stakeholders reported lingering impacts—including animal mortality, destruction to infrastructure and equipment, and reduced finances for other investment due to rebuilding. As stakeholders were continuing to recover from Cyclone Idai, many, especially in Sofala province, were affected by Cyclone Eloise—which made landfall in Mozambique in January 2021, causing disease and death in animals, as well as loss of farming and business infrastructure.
- The COVID-19 pandemic impacted the dairy value chain in other ways—for example, reducing milk buyers due to hotels, restaurants, schools, and markets being closed. There was also reduced mobility of CLWs to visit farmers, and difficulties for stakeholders to import equipment and materials due to travel restrictions and increased costs.
- Most stakeholders in Manica and Sofala did not report being affected by the low-intensity civil war—although project staff noted challenges in travel on some roads, some students unable to participate in internships, veterinary shops losing some customers, and processors stopping distribution of products in some areas.
- If the project had continued for an additional year, some stakeholders said they would have benefited from more technical support, resources, and trainings. Government representatives said the project could have assisted with tracking approval and implementation of legislation and policies.

5.2.5 Sustainability

To analyze the extent to which MERCADO is sustainable, we explored: (1) which benefits and activities were likely to continue after the project ended; (2) which benefits and activities were less likely to continue after the project ended; and (3) future plans of project stakeholders.

Activities and Benefits Likely to Be Sustainable

- Farmers emphasized they would continue with milk production, as it served as a source of income for their families.
- Other stakeholders—cooperatives, processors, the breeder, CLWs, and veterinary shops—discussed continuing their operations after the project ended and hopes to grow and expand.
- Lecturers said educational institutions would continue with a revised dairy curriculum, as well as internships to provide practical experience for students.

- The commitment of the national and provincial government in Mozambique was critical for strengthening the dairy industry. Government officials planned to move forward with regulations under review as well as the National Dairy Development Strategy.

Activities and Benefits Less Likely to Be Sustainable

- Farmers, CLWs, and government officials noted challenges for promoting animal health and treatment after the project ended. Given costs, stakeholders noted expenses in providing adequate feed, water, supplements, minerals, and care; and treatment for animals. Government officials also hoped there could be continued technical staff after the project ended, until it became possible to hire a government staff member in that role.
- Stakeholders noted perceived challenges to accessing materials and inputs after the project ended, since it had provided many necessary items and equipment. Some stakeholders were not sure where to purchase some of the items without relying on Venture37 staff.
- Others noted dairy value chain changes, such as concerns that milk collection centers and cooperatives could close, resulting in more informal sales of farmers selling directly to customers.
- Other changes included expectations of consolidation, with larger and stronger actors purchasing businesses or cattle from smaller or less successful farmers and stakeholders.

Future Plans of Project Stakeholders

- When asked about future plans, farmers described plans to continue with milk production and teaching their children on dairy farming. Cooperatives and processors hoped to grow and expand production lines.
- Students reported seeing dairy as an attractive sector, and hoped to work in the field.

5.2.6 Gender Equality and Equity

To analyze the extent to which MERCADO improved gender equality and equity we focus on two main questions: (1) identifying constraints faced by women in the dairy sector, and (2) how the project encouraged participation of both men and women.

Barriers Faced by Women in the Dairy Sector

- While many stakeholders did not think women faced different challenges than men in the dairy sector, those who did identified cultural expectations, as well as responsibilities for women to care for children and household, which limited the time they had to focus on dairy activities.

Project Encouragement of Women's Participation

- The MERCADO project encouraged women to apply for financial assistance grants, by awarding additional points when evaluating grant applications.

5.3 Study Limitations

We note the following study limitations that are potentially relevant in interpreting the findings in this endline report: small samples sizes, reliance on self-reported data, inability to attribute causation, concurrent collection of qualitative and quantitative data, and farmer recruitment for qualitative data

Small Sample Sizes

In many cases, sample sizes for outcomes disaggregated by farm scale in the farmer survey are very small, especially for large farmers ($N < 5$). The number of medium-scale farmers is also low ($N < 20$). For cooperatives and processors, the sample sizes are five cooperatives and eight processors, respectively. Finally, we have a single breeder. Additionally, in many cases these few respondents did not answer important questions like milk production, milk procurement, and sales. Thus, we caution against drawing more than tentative conclusions from the evaluation findings.

Reliance on Self-Reported Data

We are reliant on self-reported data, which always includes the danger of socially desirable answers. For example, farmers could have under-reported how much milk they sold in the informal market. The self-reported data on milk production and utilization could also be incorrect, as many farmers relied on their memory, best estimates, or incomplete record books to answer very specific questions on the liters of milk produced daily in each of the two seasons.

Inability to Attribute Causation

Perhaps the main limitation of this evaluation is that the design does not allow us to do a rigorous causal assessment. Given that MERCADO essentially worked with all dairy farmers in the Beira corridor, an experimental or quasi-experimental design was not feasible. Therefore, any outcomes cannot be attributed to the project, although they can provide valuable indications of change.

Concurrent Collection of Qualitative and Quantitative Data

The simultaneous collection of quantitative and qualitative data led to several instances in which verification of quantitative findings with follow-up qualitative questions, especially for the farmer survey, was not possible. One example of this is the seasonal differences in milk production, which we were unable to explore directly through FDGs and KIIs with farmers and other local stakeholders who could have potentially explained the reasons for our quantitative findings on seasonal variations.

Farmer Recruitment for Qualitative Data

Farmers were, of necessity, recruited to participate in FDGs through the cooperatives. To the extent that the recruited farmers were more engaged with the MERCADO project and their cooperatives were more likely to be the ones recruited for the focus groups, the FDGs were not representative of the perspectives of farmers who were less engaged with the project or not members of a cooperative.

Changes in Farmer Composition from Baseline to Endline

As documented in **Section 3**, the number of project beneficiaries declined from baseline to endline due to the project's focus on those farmers who were most likely to succeed. This change in farmer composition means that at endline, our sample of farmers consists of farmers who are "self-selected" and are thus different on observable and unobservable dimensions from the baseline sample. We have attempted to mitigate this to a certain extent by focusing only on the matched sample in most of the analysis.

5.4 Recommendations

Based on our triangulation of findings, analysis, and lessons learned, IMPAQ developed the following recommendations. We focus on the main drivers of project success, as well as on any changes required for future projects; and we group our recommendations into two categories: best practices and future programming.

Best Practices with Respect to Current Activities

Continue and create more flexibility with Dairy Innovation Fund (DIF) and Dairy Herd Fund (DHF) opportunities. Most stakeholders appreciated how the DIF and DHF helped them access cattle and equipment, including farmers, cooperatives, and processors. They noted how the financial help allowed them to acquire cattle, and obtain items such as needed equipment and machinery, as well as retail refrigerators and branding and marketing opportunities. However, some applicants for DHF and DIF did not have the financial means to participate in the co-financing schemes, which was especially the case after Cyclone Idai. *Future projects could consider a wider range of financing options to enable participants unable to cover the current shares to participate including direct cash grants to applicants or advancing low interest loans to the poorest farmers.*

Build on the availability of skilled technicians with focus on employment opportunities following student internships. The project worked with at least 13 educational institutions, developing curriculum, improving resources, and facilitating student internships. The goal was to improve knowledge and expertise and to build a cadre of professionals in the dairy sector. When there were open positions in the dairy sector, the intent was to ensure candidates with relevant experience. Interviews with some stakeholders revealed a current lack and growing need for job candidates in Mozambique with dairy sector technical knowledge and skills. Most student interns interviewed said they saw dairy as an attractive sector and would like to work in the area. One staff member said the internship program resulted in employment for some interns. *Future projects could look at assisting students with employment after completing their internships and facilitating connections between dairy sector actors looking for skilled candidates and individuals who completed internships and the dairy curriculum. Additionally, future projects could invest funds to cover partial or full employment for student interns to work with cooperatives and other dairy sector actors that may not have funds to hire on their own.*

Recommendations for Sustainability and Future Programming

Continued focus on policy implementation. One of the project's successes was close coordination with the Mozambican government at all levels to draft and submit dairy-sector focused legislation for approval. During the project timeline, the Livestock Health Legislation was submitted for review to the Ministry of Agriculture and Rural Development, other regulations were in the approval process, and the National Dairy Strategy was drafted, with implementation pending. Some government officials noted that, after approval, implementation will be a challenge. *Future projects could investigate potential barriers to implementation as well as next steps.* Additionally, the project transitioned from working to create a national dairy board, to instead facilitate provincial dairy unions to serve as representative bodies to liaise among cooperatives, the private sector, and the government. For these two provincial dairy unions, COCOLEMA in Manica has finalized formal registration, while this is still in process for SOLEITE in Sofala. *Future steps could be providing additional support for those unions representing dairy value chain interests and coordinating with government officials.*

Enhance transportation capabilities for cooperative and processors. While the project helped create milk collection centers and cooperatives to ease transportation difficulties for farmers, there were still challenges for cooperatives and processors in transporting raw milk and dairy products. Even though it was possible for cooperatives and processors to apply for DIF grants to support dairy transportation, this was still identified as a continuing need among these stakeholders. *Future projects could look at including transportation for delivering larger quantities of milk and dairy products—both from cooperatives to processors, and for processors to deliver to retailers and other customers.* This could also include coordinating with government officials to get support for improving roads and infrastructure related to transportation—helping improve distribution and sales of milk and dairy products, acknowledging limited government budgets and resources.

Promote in-country cross-breeding. Over the course of the project, demand for cross-bred cattle increased. In interviews, farmers reported preferring cross-bred cattle over pure-bred cattle, due to perceived better health and resilience. According to MERCADO semi-annual performance reports, the project procured cross-bred heifers and bulls from a local breeder to distribute to DHF grantees; and after exhausting supply, imported cross-bred cattle from South Africa.⁶⁵ It is noted that later on the project was shifting more towards procuring locally cross-bred cattle, as possible. The local breeder also shared that there was great demand and many interested buyers for local cross-bred in-calf heifers, but that few buyers had the financial ability to pay the higher prices (e.g., ~USD \$1100 - \$1500), even with prices lower than for an imported purebred in-calf heifer (e.g. ~USD \$1980), compared to a local native breed (e.g.

⁶⁵ MERCADO Semi-Annual Performance Report, April 2020 – September 2020

~USD \$400) . *Future projects could continue to promote in-country cross-breeding of cattle and supporting additional breeders to increase access and affordability for farmers, since it was unlikely that imported purebred or cross-bred cattle would be sustainable after the project ended. Future projects could focus on promoting cross-breeding capacity, for example among more farmers or supporting other breeders with grants or other assistance. Future projects could also include a subsidy to farmers to buy cross-bred cows or make this a focus of activities such as the Dairy Herd Fund.*

Support cooperatives in becoming self-sufficient and sustainable. The dairy industry in Mozambique was still recovering and largely dependent on Venture37 even at endline. While cooperatives benefited immensely from the trainings provided by Venture37, this was not sufficient to raise their capacity to make them self-sufficient and enable them to become service providers for the farmers attached to them. For instance, most farmers at endline continued to rely on Venture37 for most dairy farm equipment, infrastructure, and animal health testing. There was marginal improvement in this regard, with a small proportion of farmers relying on cooperatives for some equipment such as stainless steel cans for milking. Additionally, the project also supported vet shops to increase the stock of testing equipment. However, there was substantial room for improvement in raising the capacity of cooperatives, to both become self-sufficient and financially viable, and become a service provider for farmers. *A future project could build on MERCADO's approach of placing long-term interns in cooperatives and embed a technical staff member within each project-supported cooperative to provide consistent advice, business support, and technical expertise on a regular basis. This technical staff member could eventually become a cooperative staff member and internally raise capacity of other staff members, thereby strengthening cooperatives in becoming more self-sufficient.*

Build in-country capacity for dairy farm equipment and animal health services. For most farmers, Venture37 continued to be the main source for dairy farm equipment, and infrastructure. *A future project could focus on decreasing reliance on the implementer by building local in-country capacity. For instance, a project could build capacity of local suppliers of dairy farm equipment and connect them with international suppliers, so that once the implementer exits the project region, the local suppliers established trade lines are already set up. Additionally, a future project could focus on more training and grants to local suppliers to help expand their dairy farm equipment businesses.* The project had started doing this by facilitating linkages between dairy sector actors and input providers such as veterinary shops and feed suppliers; this could be expanded for future projects. This would help in local suppliers becoming a viable source for dairy farm equipment for dairy farmers. *A future project could also explicitly focus on building local capacity of animal health technicians and veterinary doctors, to help farmers with disease control on a more sustainable basis.* Government stakeholders also requested that the project consider leaving a transitional staff member in place focused on veterinary and animal health needs for a year after the project ended, to allow time for the government to fill the position permanently.

Increase focus on women farmers and help them succeed. At midterm and endline, we observed women farmers having higher than average milk production and sales volumes and values. However, barring a few exceptions, most women were more likely to have smaller herd sizes and found it difficult to access credit to expand their farms. In addition, qualitative interviews revealed that women were often expected to care for children and complete other housework, which could limit their availability for dairy sector activities. The project had started facilitating linkages between men and women farmers and credit and savings associations, which could be continued and expanded for future projects. Additionally, the project prioritized women with grant allocations by adding points for gender when reviewing applications. *A future project could explicitly include a focus on women farmers, including specific trainings and resources for women farmers, to help them overcome the constraints they face and become more commercial, by expanding operations and adopting improved business practices. Providing additional resources for childcare could also help address this issue for future projects. Additionally, a future project could*

specifically target women to help them increase their herd sizes, either by providing them preferential credit to buy heifers or targeting them for training and support on breeding practices to help them expand their herd size.

Integrate disaster risk management upfront in project design and budget. One of the main challenges of the MERCADO project since its inception were frequent cyclones that disrupted project implementation and adversely impacted project beneficiaries. For instance, from 2019 to 2021, two major cyclones, Idai and Eloise, hit the provinces of Sofala and Manica, which led to significant herd losses and infrastructure damage. Given the predictability of these extreme events in Mozambique, *a future project could explicitly incorporate a disaster risk management plan in project design at the inception phase, to help mitigate the impacts of future crises by facilitating disaster preparedness.* This could allocate funds at the design phase of a project for a ‘rapid response,’ including immediate cash grants to purchase essential supplies, food, emergency animal health equipment, and temporary shelters for project beneficiaries, within five days of any event—complemented by a second in-kind and cash grant a few weeks after the event to reinforce local capacities. *A future project could also explicitly include funds to work with the government to stockpile commodities for a disaster response; review and update disaster preparedness and contingency plans at the central and local levels with government stakeholders; help form or improve systems of stakeholder coordination and engagement before and during a disaster; and strengthen the mapping of hazards and early warning systems.*

ANNEX A. PERFORMANCE MANAGEMENT PLAN

Exhibit 66. Performance Management Plan⁶⁶

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
1	Value of sales by project beneficiaries ⁷²	Producers, Cooperatives, Processors	\$1,050,635.61	\$289,877.50	\$5,762,112.80	\$5.25 million	135.29%
		Type of Business					
		Small producers	\$1,177.31 [\$3.96]	\$548.19 ⁷³ [\$3.49]	\$1,264.07 [\$15.42]		
		Medium producers	\$340.60 [\$18.92]	\$140.67 [\$5.86]	\$513.78 [\$17.13]		
		Large producers ⁷⁴	\$175,101.92 [\$127.40]	\$153,194.27 (N=1) [N/A]	\$287,852.68 [\$71,963.17]		
		MCC/Cooperatives	\$10,662.48 [\$2,665.62]	\$52,085.14 [\$10,417.03]	\$60,063.81 [\$8580.55]		
		Processors	\$865,126.70	\$59,709.23	\$5,242,818.46 ⁷⁵		

⁶⁶ We report midterm and endline cumulative totals to maintain consistency with the baseline report. However, since the number of respondents to important production and sales indicators were much smaller at midterm and endline, we also report the baseline, midterm, and endline mean values in square brackets, wherever applicable.

⁶⁷ We report only those indicators for which IMPAQ was responsible for ("consultant") as per the updated PMP shared by Venture37.

⁶⁸ Baseline values are generated using the full baseline sample for the PMP indicators, regardless of whether they were matched to midterm or endline respondents. Means are not calculated for totals across producers, cooperatives, processors, and breeders, due to asymmetries in data collection.

⁶⁹ Midterm values are generated using the full midterm sample for the PMP indicators, regardless of whether they could be matched to baseline respondents. Means are not calculated for totals across producers, cooperatives, processors, and breeders, due to asymmetries in data collection.

⁷⁰ Endline values are generated using the full endline sample for the PMP indicators, regardless of whether they could be matched to midterm or baseline respondents. Means are not calculated for totals across producers, cooperatives, processors, and breeders, due to asymmetries in data collection.

⁷¹ Percentage of project target achieved is calculated using the same methods as Venture37 used in their Indicator Tracking Table; life of project actual values are taken as a cumulative sum across waves for Performance Indicators 1, 2, and 3. Otherwise the life of project actual values are taken as the Endline values for the sake of calculating the percentage of the project target achieved.

⁷² Calculated midterm and endline values for this indicator are limited to the sample that answered the question series about volume of milk produced due to inconsistent response rates in this section of the questionnaire (the reduction in sample size with this condition is minimal at both midterm and endline).

⁷³ Departing from the calculation of the value of sales in the main report, the PMP indicator calculation does not limit the sample of responses to those who answered the survey questions on seasonal milk production. Instead, those cow owning farmers who do not provide sales value information or did not answer production questions are imputed with the median value of sales (median disaggregated by farm scale) and included in this indicator's calculation. This was done to give a better representation of the cumulative total sum of milk sales value among respondents.

⁷⁴ No large producer reported value of sales in the midterm survey. We used Venture37's monitoring data from January to July 2019 to supplement their values. We extrapolated for the missing months of June – December 2018. IMPAQ has not independently verified the monitoring data.

⁷⁵ For those processors who did not provide information of value of sales we impute their responses with the mean value of sales. This was done to give a better representation of the cumulative total sum of milk sales value among respondents. Additionally,

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
			[\$207,994.60]	[\$7,463.65]	[\$374,487]		
		Breeder	\$0.00	\$24,200.00	\$169,600.00		
		Type of Commodity					
		Dairy products	\$1,050,635.61	\$100,541.23	\$5,592,512.80		
		Livestock (dairy cattle)	\$0.00	\$24,200.00	\$169,600.00		
2	Volume of commodities sold by project beneficiaries ⁷⁶	Producers, Cooperatives, Processors	1406.56MT	984.92MT	54,427.53 MT	13,250MT	428.82%
		Type of Business					
		Small producers	3.29MT [0.11MT]	1.78MT [0.01MT]	1.66MT ⁷⁷ [0.02MT]		
		Medium producers	0.96MT [0.05MT]	0.44MT [0.02MT]	1.34MT [0.04MT]		
		Large producers ⁷⁸	225.36MT [0.40MT]	724.18MT (N=1) [N/A]	972.74MT [243.19MT]		
		MCC/Cooperatives	70.81MT [17.70MT]	168.28MT [33.65MT]	160.70MT [22.96MT]		
		Processors	1111.17MT [267.15MT]	90.24MT [11.28MT]	53,291.09MT ⁷⁹ [4,520.79MT]		
		Breeder	0 heifers	22 heifers	170 heifers		
		Type of Commodity					
		Dairy products	1406.56MT	230.66MT	53,281.07MT		
		Livestock (dairy cattle)	0 heifers	22 heifers	170 heifers		
3	Number of jobs attributed to USDA assistance ⁸⁰	Producers, Cooperatives, Processors	554*	424	564	300	514.00%
		Producers	460 [1.46]	361 [2.02]	548 [2.81]		

at endline, the value shown is largely driven by one very large processor who contributed about \$5 million of the total value of sales. If this very large processor is not included, the cumulative sum total value of sales is \$146,774 with a mean value of \$10,483.

⁷⁶ Calculated midterm and endline values for this indicator are limited to the sample that answered the question series about volume of milk produced due to inconsistent response rates in this section of the questionnaire (the reduction in sample size with this condition is minimal at both midterm and endline).

⁷⁷ Departing from the calculation of the volume of sales in the main report, the PMP indicator calculation does not limit the sample of responses to those who answered the survey questions on seasonal milk production. Instead, those cow owning farmers who do not provide sales volume information or did not answer production questions are imputed with the median volume of sales (median disaggregated by farm scale) and are included in this indicator's calculation. This was done to give a better representation of the cumulative total sum of milk sales volume among respondents.

⁷⁸ No large producer reported volume of sales in the midterm survey. We used Venture37's monitoring data from January to July 2019 to supplement their volume of sales. We extrapolated for the missing months of June – December 2018. IMPAQ has not independently verified the monitoring data.

⁷⁹ For those processors who did not provide information of volume of sales we impute their responses with the mean value of sales. This was done to give a better representation of the cumulative total sum of milk sales volume among respondents.

⁸⁰ Male and female employment calculated independently, then summed for cumulative totals.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
		Male ⁸¹	414 [1.31]	283 [1.58]	437 [2.24]		
		Female	46 [0.15]	78 [0.44]	111 [0.57]		
		MCC/Cooperatives	83 [2.75]	14 [2.8]	1 [0.14]		
		Male	52 [1.50]	11 [2.2]	1 [0.14]		
		Female	31 [1.25]	3 [0.6]	0 [0]		
		Processors	11 [17.80]	49 [6.12]	15 [1.07]		
		Male	6 [13.50]	32 [4]	15 [1.07]		
		Female	5 [8.75]	17 [2.12]	0 [0]		
7	Volume of milk output per cow per day during lactation for participating dairy farmers ⁸²	Producers	8.78 liters	9.46 liters	11.7 liters	11 liters	106.36%
		Male owner	8.60 liters	11.8 liters	13.81 liters		
		Female owner	9.06 liters	7.88 liters	8.08 liters		
		Small producers	9.06 liters	9.69 liters	10.43 liters		
		Medium producers	4.62 liters	8.19 liters	16.29 liters		
		Large producers	9.37 liters (N=2)	N/A	5.76 liters (N=5) ⁸³		
8	Average number of days in lactation period ⁸⁴	Producers	269.19 days	239.56 days	235.43 days	290	89.38%
		Male owner	283.21 days	197.92 days (N=4)	284.87 days (N=7)		
		Female owner	249.62 days	282.20 days (N=2)	251.43 days (N=4)		
		Small producers	261.83 days	233.48 days	242.48 days		
		Medium producers	451.42 days (N=3)	300.39 days (N=1)	209 days (N=4)		
		Large producer ⁸⁵	N/A	N/A	N/A		
9		Producers	510.16 days	464.16 days	490.09 days		101.00% ⁸⁶

⁸¹ Gender is defined in each round and the sample is restricted to those who self-reported their gender. Because of reduced sample sizes for those who self-reported, male and female values will not add up to the “total” value presented.

⁸² Baseline values for this indicator were calculated using the number of dairy cows owned by the farmer as the “per-cow” denominator since the baseline survey did not include questions on the seasonal number of lactating dairy cows. For midterm and endline, it is calculated using the number of lactating cows in a given season as the “per cow” denominator.

⁸³ At endline, very low values were reported for 3 of the 5 large producers that responded to this indicator and we interpret these values with caution.

⁸⁴ Average lactation period at midterm and endline has some negative values that we assume are off by one year from the intended end date of the lactation period; these values were increased by 365 days to adjust for the error (3 farmers affected at midterm and endline). This variable also had very low values which were below a reasonable minimum duration for cow lactation of 120 days and so were changed to missing values (2 farmers were affected at midterm and endline).

⁸⁵ This indicator was not asked of large producers.

⁸⁶ Since a lower calving interval is more desirable, we calculate the life of project percentage achieved by dividing the target value by the Endline value.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
	Average calving interval	Male owner	509.57 days	454.00 days (N=2)	439.18 days	16.5 months (~495 days)	
		Female owner	510.89 days	485.13 days (N=4)	569.05 days		
		Small producers	513.09 days	469.19 days	500.14 days		
		Medium producers (N=2)	497.06 days (N=2)	436.50 days (N=2)	439.85 days (N=5)		
		Large producers ⁸⁷	N/A	N/A	N/A		
10	Number of individuals who have applied new techniques or technologies as a result of USDA assistance ^{88,89}	Producers	315* [100%]	183 [100%]	195 [100%]	250	78.00%
		Male owner	187 [100%]	68 [100%]	70 [100%]		
		Female owner	128 [100%]	31 [100%]	42 [100%]		
		Small producers	295 [100%]	157 [100%]	151 [100%]		
		Medium producers	18 [100%]	24 [100%]	37 [100%]		
		Large producers	2 [100%]	2 [100%]	7 [100%]		
		Zero-grazing	N/A	141 [77.05%]	118 [60.51%]		
		Forage	N/A	148 [81.32%]	171 [94.48%]		
		Supplements	N/A	169 [92.35%]	187 [95.90%]		
		Continuous water access	8 [2.94%]	34 [18.78%]	43 [22.16%]		
		Milking machine	6 [1.90%]	7 [3.83%]	17 [8.72%]		
		CMT mastitis test	56 [22.13%]	102 [75.00%]	143 [87.20%]		
		Cup mastitis test	78 [30.83%]	51 [37.50%]	48 [29.63%]		
		Visual mastitis test	165 [65.22%]	58 [42.62%]	60 [36.81%]		

⁸⁷ This indicator was not asked of large producers.

⁸⁸ This indicator is defined at midterm and endline as having applied *at least one* of the following techniques: (1) improved feeding (use of zero-grazing, supplements, and fodder), (2) continuous access to water, (3) having a clean corral, (4) weekly tick treatments, (5) use of vaccinations on cows, (6) use of a milking machine, (7) using steel receptacles for milk, and CMT, cup, or visual testing for mastitis. At baseline this indicator was defined as using at least one of the following techniques: (1) use of supplements, (2) use of fodder, (3) continuous access to water, (4) use of a milking machine, (5) using a cup or CMT test for mastitis testing, (6) use of vaccinations, (7) testing for ticks at all, (8) use of steel receptacles for milk, and (9) withholding milk from sale after using antibiotics on cows.

⁸⁹ Gender is defined in each round and the sample is restricted to those who self-reported their gender. Because of reduced sample sizes for those who self-reported, male and female values will not add up to the "total" value presented.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
		Vaccinations	237 [75.24%]	155 [86.11%]	164 [84.97%]		
		Steel receptacles	282 [89.52%]	107 [60.11%]	147 [75.77%]		
		Withhold milk after antibiotics	36 [27.91%]	N/A	N/A ⁹⁰		
		Weekly tick control	101 [32.06%]	45 [26.32%]	110 [58.82%]		
11	Number of hectares under improved techniques or technologies as a result of USDA assistance ⁹¹	Producers	506.3* hectares [6.84 hectares]	339 hectares [13.56 hectares]	297.9 hectares [5.14 hectares]	600 hectares	49.65%
		New producer ⁹²	N/A	36 hectares [3.6 hectares]	112.8 hectares [2.56 hectares]		
		Continuing producer	N/A	303 hectares [20.2 hectares]	185.1 hectares [13.22 hectares]		
		Male owner	402.9 hectares [9.83 hectares]	33 hectares (N=14) [2.36 hectares]	181.8 hectares [7.90 hectares]		
		Female owner	103.4 hectares [3.13 hectares]	10 hectares (N=2) [5.00 hectares]	16.75 hectares [1.29 hectares]		
12	Number of individuals who have applied improved farm management practices (i.e. governance, administration, or financial management) as a	Producers	81* [33.20%]	145 [81.01%]	147 [88.55%]	150	98.00%
		Male owner	51 [35.42%]	56 [83.58%]	53 [89.83%]		
		Female owner	30 [30.00%]	22 [70.97%]	34 [91.89%]		
		Small producers	75 [32.33%]	120 [78.43%]	106 [86.89%]		
		Medium producers	5 [45.45%]	23 [95.83%]	35 [94.59%]		
		Large producers	1 (N=1) [100.00%]	2 [100%]	6 [85.71%]		

⁹⁰ This sub-indicator is no longer part of the overall performance indicator for “new technologies” at midterm and endline.

⁹¹ Gender is defined in each round and the sample is restricted to those who self-reported their gender. Because of reduced sample sizes for those who self-reported, male and female values will not add up to the “total” value presented.

⁹² New producers are defined as belonging to the midterm sample that could not be matched to baseline, while continuing producers are those midterm farmers who could be matched to baseline. At endline, new producers are defined as belonging to the endline sample that could not be matched to either midterm or baseline, while continuing producers are those endline farmers who could be matched to either midterm, baseline, or both previous rounds of data collection.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
	result of USDA assistance ^{93,94}						
13	Percentage of dairy farmers that indicate ready access to key dairy inputs ⁹⁵	Producers	13.3%*	36.61%	40.00%	50%	80.00%
		Male owner	14.4%	36.76%	32.86%		
		Female owner	11.6%	41.94%	50.00%		
		Small producers	12.1%	33.12%	35.76%		
		Medium producers	27.8%	58.33%	54.05%		
		Large producers	50.0%	50.00%	57.14%		
		Supplements	55.7%	35.33%	35.29%		
		Forage	56.2%	33.56%	49.12%		
		Milking machine	20.0% (N=5)	N/A	19.02%		
		Steel receptacles	17.6%	34.88%	46.35%		
		Mastitis test	31.9%	44.21%	51.43%		
		Heifers	22.9%	60.81%	53.85%		
		Health services for cattle	34.6%	52.20%	60.42%		
14	Percentage of dairy producers that have improved on-farm infrastructure ⁹⁶	Producers	98.65%**	86.89%	81.03%	50%	162.06%
		Male owner	8.6%	89.71%	84.29%		
		Female owner	11.0%	77.42%	76.19%		
		Small producers	9.6%	85.35%	75.50%		
		Medium producers	0.0% (N=3)	95.83%	100.00%		
		Large producers	N/A	100%	100%		
		Milk Chilling	N/A	25.14%	28.42%		
		Tractor ⁹⁷	1.4%**	N/A	N/A		
		Milk Machine	1.8%**	3.83%	8.72%		
		Milk Filter	74.3%**	75.84%	65.98%		

⁹³ IMPAQ used four variables at baseline to create this indicator: (1) keeping a daily dairy production register; (2) keeping a daily milk allocation register; (3) keeping a farm transaction register (revenues and expenses); and (4) keeping a register animal health visits (as was done at baseline). The farmers were counted to have applied improved farm management only if they had all four of these types of record keeping. At midterm and endline, we add the development *and* use of a business plan as a fifth type of improved management practice; those who used at least one of the five types of improved management practices are counted as having applied them at midterm. This is updated at midterm and endline to better match the PMP indicator description of using *at least one* of the practices.

⁹⁴ Gender is defined in each round and the sample is restricted to those who self-reported their gender. Because of reduced sample sizes for those who self-reported, male and female values will not add up to the “total” value presented.

⁹⁵ At baseline, access to key dairy inputs was defined as having easy or very easy access to at least four of the inputs listed after “large producers” for this indicator. At midterm and endline, easy or very easy access to a milking machine is no longer required, and only at least three of the inputs must be easy or very easy to access. This change was done to better match the given PMP indicator definition. However, the value of this sub-indicator for milking machine access is presented at endline for comparison to baseline.

⁹⁶ Improved infrastructure is defined as having at least one of the following: (1) improved kraal (with shade, ventilation, suitable flooring, concrete material under the milking area, and fodder receptor), (2) milking machine, (3) chilling facilities, (4) feeder, and (5) milk filter.

⁹⁷ Ownership of a tractor is no longer part of PMP indicator #14’s definition at midterm and endline and was not asked in either survey round.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
		Feeder	64.9%**	48.02%	45.36%		
		Corral with shade	77.4%**	48.30%	91.85%		
		Corral with ventilation	81.5%**	96.02%	99.47%		
		Corral with dry floor	N/A	90.34%	97.71%		
		Corral with concrete material under the milking area	37.4%**	42.05%	79.49%		
		Corral with fodder receptor	69.4%**	79.55%	96.43%		
16	Percentage of trained dairy producers that can accurately recite improved dairy practices ⁹⁸	Producers	70.3%	88.52%	90.77%	85%	106.79%
		Male owner	71.8%	83.82%	94.29%		
		Female owner	68.2%	87.10%	88.10%		
		Small producers	71.4%	79.61%	91.39%		
		Medium producers	55.6%	83.33%	89.19%		
		Large producers	50.0% (N=2)	100.00%	85.71%		
		Ways to improve pasture quality	83.3%	71.04%	88.72%		
		Advantages of artificial insemination	83.0%	74.86%	82.05%		
		Most important equipment in corral	83.0%	80.33%	87.69%		
		How to prevent or control mastitis	85.8%	90.71%	97.95%		
		Best practices in cow feeding	N/A	81.97%	98.38%		
		Advantages of keeping corral hygienic	N/A	97.27%	98.46%		
		Ways to maintain quality of milk	N/A	75.14%	94.87%		
17	Percentage of trained dairy producers that can demonstrate financial literacy ⁹⁹	Producers	71.30%	63.93%	71.28%	75%	95.04%
		Male owner	70.70%	66.18%	82.86%		
		Female owner	72.10%	70.97%	61.90%		
		Small producers	71.00%	61.78%	67.55%		
		Medium producers	77.80%	75.00%	86.49%		
		Large producers	50.00% (N=2)	100.00% (N=2)	71.43% (N=7)		
25	Number of producers, MCCs, and processors	Producers, Cooperatives, Processors	0	16	29	14	207.14%

⁹⁸ Three new practices were added at midterm and endline. Accurate recital of improved dairy practices is defined at midterm as those who can recite on at least 4 of the following: (1) pasture quality (2) artificial insemination (3) corral equipment (4) mastitis prevention (5) best practices in cow feeding (6) advantages of keeping the corral hygienic (7) ways to maintain quality of milk. At baseline this definition was that the farmer be able to recite at least 3 of the first four improved dairy practices.

⁹⁹ Financial literacy is defined as those who know to use both revenue and expenses to calculate profit from their dairy business.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
	that adopt established standards ¹⁰⁰	Small producers	0	0 [0.00%]	7 [4.64%]		
		Medium producers	0	3 [12.50%]	4 [10.81%]		
		Large producers	0	2 [100.00%]	3 [42.86%]		
		MCC/Cooperatives	0	5 [N/A] ³⁷	5 [N/A] ¹⁰¹		
		Processors	0	6 [N/A] ³⁷	10 [N/A] ³⁷		
24	Number of producers, MCCs, and processors that adopt improved post-production handling ¹⁰²	Producers, Cooperatives, Processors	7	13	26	14	185.71%
		Small producers	0	0 [0.00%]	5 [3.31%]		
		Medium producers	0	1 [4.17%]	3 [8.11%]		
		Large producers	0	0 [0.00%]	3 [42.86%]		
		MCC/Cooperatives	4	5 [N/A] ³⁹	6 [N/A] ¹⁰³		
		Processors	3	7 [N/A] ³⁹	9 [N/A] ³⁹		
25	Total increase in installed storage capacity (dry or cold storage) as a result of USDA assistance	Producers, Cooperatives, Processors	26.80 cubic meters*	28.32 cubic meters	173.09 cubic meters	10 m³	1730.90%
		Small producers	0.17 m ³ [0.001 m ³]	0.50 m ³ [0.50 m ³]	0.64 m ³ [0.21 m ³]		
		Medium producers	3.18 m ³ [0.20 m ³]	3.20 m ³ [0.80 m ³]	3.05 m ³ [0.61 m ³]		
		Large producers	0.00 m ³ [0.00 m ³]	1.70 m ³ [0.85 m ³]	4.63 m ³ [1.54 m ³]		
		MCC/Cooperatives	3.45 m ³ [0.86 m ³]	5.79 m ³ [1.16 m ³]	7.63 m ³ [1.09 m ³]		
		Processors	20.00 m ³	17.13 m ³	157.14 m ³ ¹⁰⁴		

¹⁰⁰ Adoption of standards is defined as using all of the following for baseline, midterm, and endline: (1) using a milking machine, (2) inspecting for mastitis, (3) using a stainless steel container, and (4) using milk filters.

¹⁰¹ The mean value of this indicator is noted as N/A for cooperatives and processors because it was calculated differently of cooperatives and processors than producers. For cooperatives and processors, the value shown is the cumulative total sum who reported rejecting milk for quality and safety reasons.

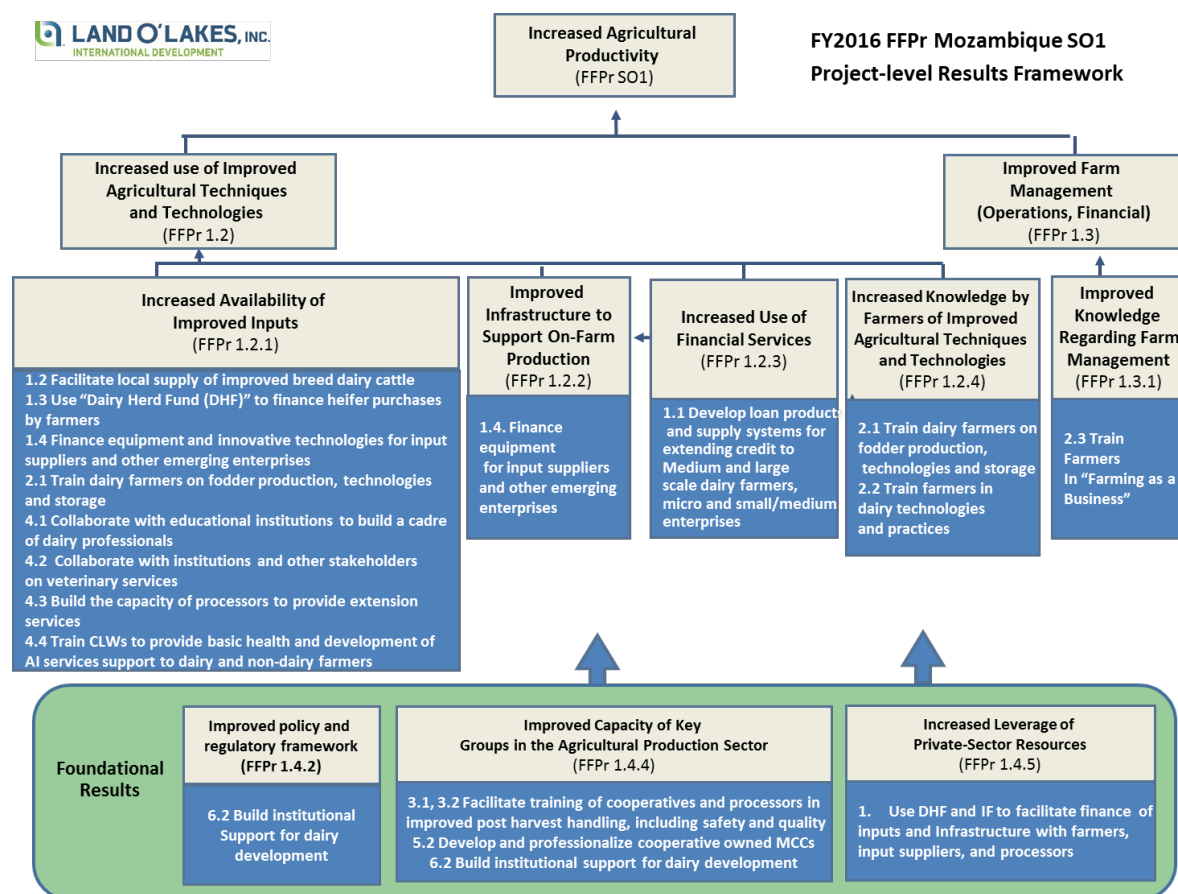
¹⁰² Adoption of improved post-production handling is defined as using all of the following at baseline: (1) using a milking machine, (2) at least one improved practice in corral, (3) quality testing milk before selling, and (4) using a stainless steel container.

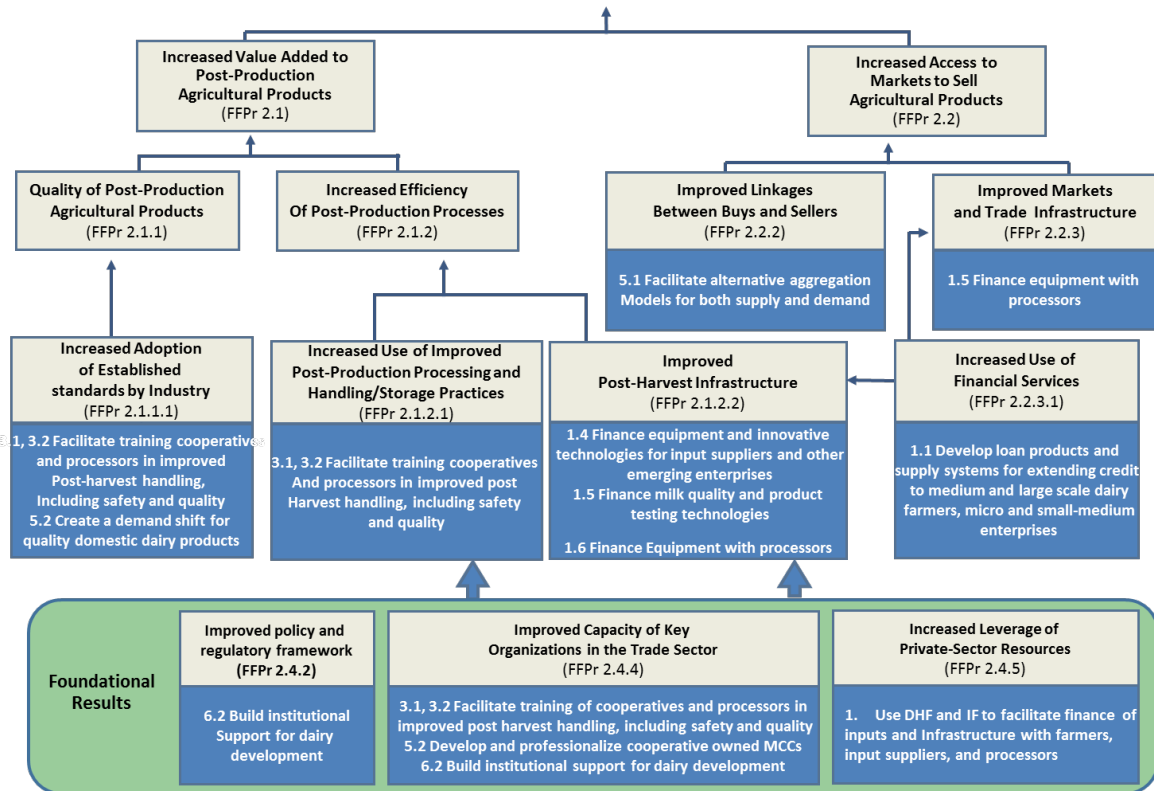
¹⁰³ The mean value of this indicator is noted as N/A for cooperatives and processors because it was calculated differently of cooperatives and processors than producers. For cooperatives and processors, the value shown is the cumulative total sum who reported that they test the quality of incoming milk.

¹⁰⁴ At endline, the value shown is largely driven by one very large processor who contributed about 75 cubic meters of the total volume of storage capacity. If this very large processor is not included, the cumulative sum total volume is 81.34 cubic meters with a mean value of 6.26 cubic meters.

#	Performance Indicator ⁶⁷	Data Source	Baseline Values ⁶⁸	Midterm Values ⁶⁹	Endline Values ⁷⁰	Life of Project Target	Percent of Project Target Achieved ⁷¹
			[0.001 m ³]	[2.14 m ³]	[11.22 m ³]		
* Indicator value is 0 at baseline. Actual baseline values have been provided as a point of reference for Venture37.							
** Indicator calculated with data from MDDP Final Evaluation dataset at baseline.							

ANNEX B. MERCADO FFPR RESULTS FRAMEWORK





ANNEX C. EVALUATION QUESTIONS, DATA COLLECTION METHODS, AND DATA SOURCES

Evaluation Criteria	Evaluation Question	Data Collection Method	Data Source
Relevance	Does the results framework, assumptions, program design and project activities meet the needs of the participants and local conditions in Mozambique's Manica and Sofala Provinces?	Focus Groups Semi-Structured Surveys Key Informant Interviews	Dairy Farmers Value Chain Actors Program Staff Other Stakeholders
	How well aligned are MERCADO's strategy and activities with the development goals, objectives and strategies of USDA, the U.S. Government and the Mozambican Government?	Key Informant Interviews	Other Stakeholders
Impacts	What impacts are the project activities having on the program participants, both positive and negative, especially in relation to the expected results and strategic objectives? - How has the project-provided training impacted the knowledge and uptake of improved agricultural, farm management practices and post-harvest handling? - How has the use of improved practices affected agricultural productivity (<i>measured through liters of milk per day, number of days of lactation, and calving interval for dairy and through yield for forage</i>)? - To what extent has increased access to input suppliers affected the uptake of improved agricultural techniques, farm management practices, post-harvest handling, and use of improved infrastructure for farmers? - How has training in improved safety and quality affected the rate of rejection of milk at the aggregation level? - How have project activities influenced total value and quantity of milk and milk product sales? - How is value-capture distributed across different milk market system actors? What can be done to improve value capture and profitability of the actors? - To what extent has access to finance affected the growth of farmer dairy businesses? - To what extent has access to finance affected uptake of improved processing techniques, quality standards, and improved infrastructure for processors?	Panel Survey Focus Groups Semi-Structured Surveys Key Informant Interviews	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
	What internal and external factors have influenced the ability of the project to meet expected results and targets?	Key Informant Interviews	Dairy Farmers Students Value Chain Actors

Evaluation Criteria	Evaluation Question	Data Collection Method	Data Source
			Program Staff Other Stakeholders
	How did the reduction in funding and shortened LOP, cyclone Idai, the COVID-19 pandemic, and security issues influence the program's results?	Panel Survey Focus Groups Semi-Structured Surveys Key Informant Interviews	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
Effectiveness	To what extent are the program targets and outcomes likely to be achieved by the end of the project?	Key Informant Interviews Focus Groups	Dairy Farmers Program Staff
	What key successes should be replicated or key improvements should be made to the implementation to maximize the results?	Panel Survey Focus Groups Semi-Structured Survey Key Informant Interviews	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
Efficiency	Were the resources and activities provided by the program carried out in a timely manner and with effective use of resources?	Focus Groups Semi-Structured Survey Key Informant Interviews	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
	How well has the project been managed and M&E data used to make programmatic decisions?	Semi-Structured Surveys Key Informant Interviews Review of M&E Data	Program Staff Other Stakeholders
Sustainability	Which project activities and benefits are likely to be sustained or not sustained past the project lifespan, why?	Panel Survey Focus Groups Semi-Structured Survey Key Informant Interviews Review of M&E Data	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
	What exit strategy has the project put into place to ensure the sustainability of the project outcomes?	Key Informant Interviews	Program Staff Other Stakeholders
Gender Equality and Equity	How did the project address the constraints faced by women in the dairy sector?	Panel Survey Focus Groups Semi-Structured Survey Key Informant Interviews Review of M&E Data	Dairy Farmers Students Value Chain Actors Program staff Other Stakeholders
	What did the program do to ensure participation of both men and women? What could the program have done better?	Focus Groups Semi-Structured Survey Key Informant Interviews	Dairy Farmers Students Value Chain Actors Program Staff Other Stakeholders
	How did the outcomes of the project differ between men and women? What could the project have done differently to ensure that equal benefits accrued to both women and men?	Panel Survey Focus Groups Semi-Structured Survey Key Informant Interviews Review of M&E Data	Dairy Farmers Students Value Chain Actors Other Stakeholders

ANNEX D. INCEPTION REPORT

INTRODUCTION

Land O'Lakes Venture37 (Venture37) has contracted IMPAQ International, LLC (IMPAQ) to implement the performance evaluation of the five-year Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) project, funded by the United States Department of Agriculture (USDA). The evaluation consists of three components: baseline and gender analysis (2016), midterm (2019), and final (2021) evaluations.

This Inception Report introduces the theory, methods, and tools that will guide IMPAQ's *final evaluation* of Venture37's MERCADO dairy sector development project in Mozambique. We begin the report by presenting a background of the project, specific project activities, the Results Framework, and the final evaluation objectives based on our review of documents and discussions with Venture37 project staff. In the next section, we present our evaluation methodology including our quantitative and qualitative data sources, sampling plan, data collection methods, analysis plan, field procedures, and communications protocol. We conclude with a timeline of activities and project outputs along with a list of personnel assignments. Data collection tools for the final evaluation are included as annexes.

PROJECT BACKGROUND

Mozambique historically had significant dairy production. In 1973, Mozambique reached its peak number of dairy cows and milk production with 13,200 cows and over 13 million kilograms of milk produced. However, after the country's independence in 1975, a 16-year civil war caused the dairy industry to almost disappear. Currently, official statistics place the number of dairy cows at 2,209, 80.4 percent of which are in the provinces of Sofala and Manica (Beira Corridor).¹⁰⁵ The country is almost completely dependent on imports for milk and milk products because of the decline in number of dairy cows and poor management of dairy production. In 1992, the contribution of the national production to the total milk and dairy products consumed was 6 percent, a figure that, 20 years later, is largely unchanged at 6.4 percent.¹⁰⁶

The Strategic Plan for Dairy Development in Mozambique and government interventions identify the Beira Corridor as a priority location in which to reestablish dairy production in the country and the potential for dairy production in Maputo, Zambezia, and Nampula provinces. The peri-urban areas of Beira and Chimoio cities, in which dairy production is now being re-established by Venture37, are the same areas in which dairy farms were concentrated previously.¹⁰⁷

Since 2008, Venture37 has led the revival of the Mozambican dairy industry, leveraging USDA-Food for Progress funding to build a supply base and distribution system for domestically produced milk. These efforts have facilitated capacity building, market linkages, trainings, and financial investments that are essential for sustaining the development of a socially inclusive yet market-driven industry.

¹⁰⁵ Venture37's MERCADO Baseline, Midterm, and Final Evaluation Terms of Reference (Updated); December 6, 2016; pg. 1.

¹⁰⁶ Ibid; pp. 1.

¹⁰⁷ Ibid; pp. 1-2.

Venture37's MERCADO Intervention and Results Framework

The USDA-supported MERCADO project is Venture37's third Mozambican dairy sector development initiative. The five-year program began in October 2016 and seeks to address critical weaknesses that currently impede or threaten the competitiveness and sustainability within the dairy market system. MERCADO uses a private-sector-driven, market systems approach to attempt "to establish a commercial-oriented, sustainable and competitive dairy market system in Mozambique," which is competitive locally, regionally, and nationally. To accomplish this goal, the project works to increase dairy productivity and quality at the farm level to help meet unmet demand for liquid milk by the processing industry, while also promoting quality, efficiency, and business viability along the value chain. The dual emphasis on farm-level productivity and value chain development correspond with strategic objectives of Increased Agricultural Productivity (FFPr SO1) and Expanded Trade of Agricultural Products (FFPr SO2) of the USDA's FFPr initiative. Venture37 is implementing MERCADO project activities in the dairy producing areas of the Beira Corridor, particularly the peri-urban areas of the cities of Chimoio (Manica Province) and Beira (Sofala Province).

MERCADO's Results Frameworks (see **Annex B**) links project activities and outputs with desired outcomes and project-level results. The causal logic underlying MERCADO's Results Framework posits that facilitation of training, equipment, and inputs among dairy value chain actors increases their know-how and productive capacity to produce and add value to quality milk products, while simultaneous improvements to the market (in particular, prices and market terms, and local demand) increases their motivation to do so. This also leads to increases in the volume and quality of milk that is produced at the farm level and subsequently improve quality along the value chain. Together, increased volumes and quality of production enables the emergence of a competitive, profitable, and sustainable dairy market system.

To improve the productivity of dairy cows, MERCADO both improves the quality and availability of improved inputs, such as animal health services, extension services, feed and fodder, and dairy equipment, and improves the capacity of dairy farmers to care for their animals. To improve input quality and availability, MERCADO retrains paravets, trained in the previous projects to provide services to the dairy farmers. MERCADO also continues to provide updated curricula and internships for students at local technical institutes that are interested in entering the dairy sector. The project works with agro-businesses and feed and fodder producers, and other input providers to increase their capacity and facilitate access to finance to start and or grow their businesses.

To improve the capacity of dairy farmers, MERCADO supports technical and farm management capacity building to dairy farmers to improve their dairy and farm practices. It is expanding dairy input service delivery, including extension services, animal health services, and feed and fodder provision. It is also facilitating access to finance to purchase livestock, production and trade infrastructure; promoting private investments in the dairy sector; and strengthening linkages between buyers and sellers.

In combination with increases in productivity and quality at the farm-level, the project is providing training, capacity building, and financial services that will improve quality and productivity all along the dairy value chain. The project also recognizes that, in the face of unmet demand, dependence on relatively few large-scale commercial milk processors makes farmers and other value chain actors vulnerable to disadvantageous price and market conditions. In this context, the project seeks to increase diversity and competition along the value chain by promoting the entry of new market actors particularly at the

processing level, while also promoting appreciation, awareness, and demand for local milk among consumers.

MERCADO is undertaking seven activities within three separate focus areas. These activity areas encompass the provision of financial services, training, and capacity building of farmers, extension workers and input and service providers, post-farm gate value chain actors, and to improve the policy and regulatory framework. These activities, detailed in the contract scope of work, are summarized in **Exhibit 67. MERCADO Project Activities**.

Exhibit 67. MERCADO Project Activities

Activity Focus Area	Activity Description
Financial Services	1. Facilitate Investment in Dairy Herd Restocking
	2. Facilitate Investment in the Dairy Sector via Innovation Fund
Training	3. Improved Farm Practices
	4. Improved Post-Harvest Handling, Food Safety and Quality
Capacity Building	5. Agricultural Extension Agents/Services
	6. Aggregation and Value-Addition
	7. Promote Improved Policy and Regulatory Framework

External Factors

We present below three external factors that have characterized the MERCADO project landscape over the course of its implementation:

1. *Cyclone Idai*

In March 2019, during the implementation of MERCADO, Cyclone Idai – one of the worst tropical cyclones to affect Africa and the Southern Hemisphere – caused catastrophic damage to Mozambique, Malawi and Zimbabwe. MERCADO supports the dairy value chain in Sofala and Manica provinces, both of which were affected by the cyclone. In Sofala province, the districts of Beira, Dondo and Nhamatanda were the most impacted by the cyclone’s strong winds, heavy rainfall, and ensuing flooding. The cyclone had a catastrophic impact on residents and caused immediate and long-term damage to livestock assets. An estimated 87 dairy cattle under the auspices of the MERCADO project were lost in Manica (37) and Sofala (50); in Sofala this is equivalent to 6% of the dairy herd lost during or in the immediate aftermath of the cyclone, and in Manica this is equivalent to 3% of the dairy herd. Approximately, 102 and 60 MERCADO-supported Sofala and Manica dairy farmers, respectively, lost one or more cattle, dairy infrastructures, equipment, feed supplies, residences or other properties.¹⁰⁸

Short-run financial impacts to dairy livestock and related assets, including processed product in stock, were estimated at \$250,000. IMPAQ’s midterm evaluation of MERCADO in July 2019 found that the cyclone led to cattle disease and death and cattle stress, particularly for small and medium-sized farmers. This led to reduced milk production. Housing for cattle was the primary infrastructure damaged by the cyclone, with such damage causing difficulties for farmers to access dairy inputs. Cooperatives and processors reduced milk procurement after the cyclone, with processors revealing significant losses driven by damage to roads, grazing fields, and dairy infrastructure.

¹⁰⁸ MERCADO Semi-Annual Performance Report to USDA October 2018 to March 2019

A year later, the dairy industry continues to feel the impact of the cyclone in 2020, with milk production yields still lagging compared to pre-cyclone levels and not experiencing the growth forecasted.¹⁰⁹ The project has extended cost-share deadlines to provide flexible support to beneficiaries, but further extensions are not possible due to the project's early end date. It was predicted that it would take 12-18 months for the dairy industry to return to its original growth trajectory, but the semi-annual evaluation performed by the project for USDA in March 2020 reported that it had not yet recovered. This was further complicated by the COVID-19 pandemic, discussed in greater detail below.

As part of MERCADO's final evaluation, IMPAQ will assess any lingering effects of the cyclone on MERCADO's project participants and the dairy value chain in Sofala and Manica. We will also examine how the cyclone influenced project results, including achievement on key performance indicators outlined in the Performance Monitoring Plan.

2. COVID-19

Coronavirus disease 2019 (COVID-19) is a contagious respiratory and vascular disease responsible for an ongoing worldwide pandemic. In early 2020, this worldwide health emergency resulted in a number of setbacks for the MERCADO project, further derailing beneficiaries from reaching intended outcomes. According to the MERCADO Semi-Annual Performance Report of October 2019 to March 2020, these effects include the cancellation or postponement of youth, education, and marketing events, agribusiness fairs, and postponement of importation of dairy cattle. Additionally, especially early in the pandemic, the project was unable to provide technical assistance to participating farmers. The pandemic is also expected to cause impacts across the entire Mozambican economy and reduce both milk consumption and production. The deflation of the Mozambican currency, the Metical's value against the US dollar is also expected to raise local prices for imported inputs like veterinary products.¹¹⁰

As part of MERCADO's final evaluation, IMPAQ will also assess the effects of the COVID-19 pandemic on project participants and the dairy value chain in Sofala and Manica. We will examine its influence on project results and key performance indicators outlined in the Performance Monitoring Plan.

3. Local Security Concerns

During the final evaluation inception meeting, Venture37 project staff expressed that Sofala and Manica have experienced local violence and insecurity related to political civil-conflict. These attacks have been most frequent on two major roadways (the North/South N1 Highway, and the N6 Highway that links the Sofala and Manica provinces), forcing project personnel to avoid traveling on certain roads at certain times. This has limited certain aspects of monitoring data collection, and may have had additional impacts on project beneficiaries. According to the MERCADO Semi-Annual Performance Reports of October 2019 to March 2020 and April to September 2020, these effects include increased costs of inputs, reduced investment appetite, and increased travel costs.

As part of MERCADO's final evaluation, IMPAQ will assess the effects of this recent violence on project participants and the dairy value chain in Sofala and Manica. We will examine its influence on project results and key performance indicators outlined in the Performance Monitoring Plan.

¹⁰⁹ MERCADO Semi-Annual Performance Report to USDA October 2019 to March 2020

¹¹⁰ MERCADO Semi-Annual Performance Report to USDA October 2019 to March 2020

Evaluation Objectives

IMPAQ will work with Venture37 to implement the final evaluation of the MERCADO project to measure progress made in achieving the intended outcomes presented in the Results Framework (see **Annex B**). The Evaluation Questions and their attendant data collection method and data sources are presented in **Annex C**.

The final evaluation has eleven objectives, as detailed in the terms of reference (TOR):

1. Assess whether the project has achieved the expected results as outlined in the Results Frameworks (see **Annex B**);
2. Assess the relevance, effectiveness, efficiency, impact, and sustainability of project activities;
3. Measure progress from baseline and midterm and assess attribution to the extent possible;
4. Assess how women and men have benefited differently from the project;
5. Identify lessons learned through the duration of the project with an emphasis on identifying key strategies, methodologies and factors that contributed to and/or inhibited success, focusing on areas that could be applied to similar programming;
6. Draw conclusions and provide recommendations to Venture37, USDA, project participants, project partners, and other stakeholders, including the Government of Mozambique and USDA Washington, to strengthen future or similar projects;
7. Assess the effect of the reduction in funding and resulting shortened life of project;
8. Assess the effect of Cyclone Idai on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
9. Assess the effect of the COVID-19 pandemic on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
10. Assess the effect of security issues on MERCADO project participants, including how security issues have affected both supply and demand of dairy products; and
11. Assess how effectively the project pivoted project activities due to the above issues (reduced funding, Cyclone Idai, COVID-19 pandemic, and security issues).

The focus of the final evaluation will be to test the hypotheses developed at baseline relating to the project's relevance, impacts, effectiveness, efficiency, sustainability, and gender equality and equity considerations using a non-experimental design. That is, we will compare key outcomes for the various project participants across time.

EVALUATION METHODOLOGY

In this section, we provide specific details of our mixed methods evaluation approach, including the research questions, quantitative data sources, qualitative data sources and sampling plan, data collection methods, field procedures, quality control measures, and a project timeline.

The IMPAQ team will conduct a performance evaluation to meet the final evaluation objectives and answer the final evaluation questions presented in the previous section. This approach will frame the evaluation through the lens of Mozambique's dairy market system, considering how MERCADO's

interventions contribute to the development of a sustainable private sector driven dairy market system. IMPAQ will use a formative approach to tie together its inquiries at each level of the value chain into a broad picture of MERCADO's relevance, impact, effectiveness, and efficiency and to examine the sustainability and equity of the project's activities and impact.

We will organize the final evaluation using a mixed-methods approach, comparing progress on key outcomes over time for project participants. The final evaluation will characterize the different value chain actors – dairy farmers, aggregation and value addition facilities, processors, dairy breeders, input and service providers, student interns, and other stakeholders. The final report will test hypotheses about the project's relevance, impact, efficiency, sustainability, and gender equality and equity considerations, which IMPAQ developed at baseline. We will evaluate the project's Results Frameworks within the context of the dairy value chain and will compare the extent to which the strategic objectives of the Results Frameworks have been achieved. The final evaluation will build off the midterm evaluation results by providing longitudinal data and comprehensive documentation of the Beira Corridor's dairy market system, especially after incorporating the effects of Cyclone Idai, COVID-19, and local security concerns on project implementation and achievement. We will identify lessons learned through the duration of the project with an emphasis on identifying key strategies, methodologies and factors that contributed to and/or inhibited success, focusing on areas that could be applied to similar programming.

Research Questions

In pursuing our evaluation objectives, we will answer an array of evaluation questions relating to the project's relevance, impact, effectiveness, efficiency, sustainability, and gender equality and equity. **Annex C** demonstrates our evaluation framework, which maps each evaluation question to their attendant data collection method and data sources within each evaluation criteria. During the final evaluation, we will provide current values for the project indicators and other contextualizing data points, compare these values to midterm and baseline, and provide preliminary discussions based on our research on potential reasons for the project outcomes achieved and use these insights to make recommendations for future similar projects.

Data Sources

IMPAQ will use similar methods and instruments for each type of project stakeholder as used during baseline and midterm to generate consistent data and insights over the life of the project. The focus group discussions (FGDs) and key informant interviews (KIIs) will also help contextualize stakeholder insights on the dairy sector as a whole. We will tailor all qualitative interviews and quantitative data collection instruments to each stakeholders' type of involvement in the project. We will discuss with Venture37 any modifications needed in data collection instruments from midterm to account for changes in project implementation. We will include additional questions related to program implementation in quantitative and qualitative instruments for this final evaluation.

All data collection instruments and interviews will be designed initially in English; and will subsequently be translated to Portuguese. Data collection personnel will use the most appropriate language for each respondent by selecting the correct language at the start of the survey within the tablet tool.

Document Review

We will review relevant documents from Venture37 which will inform the development of our quantitative and qualitative instruments. These documents include semi-annual performance reports submitted to USDA, special studies conducted by Venture37, and any other relevant documents.

Quantitative Data Sources

The main data sources for the quantitative data collection include a census of dairy farmers, aggregation and value addition facilities (cooperatives), and processors (including microprocessors). We will conduct a panel data survey with dairy farmers and a panel semi-structured survey with cooperatives, processors, and breeders. We will also conduct a cross-sectional semi-structured survey with microprocessors. **Exhibit 68** summarizes our proposed target numbers of respondents for the quantitative data collection.

Exhibit 68. Quantitative Data Sources

Stakeholder Type	Data Collection Method	Target Sample Size
Dairy Farmers	Panel data survey	256 (Sofala: 128; Manica: 128)
Aggregation & Value Addition Facilities (Cooperatives)	Semi-structured survey (quantitative component)	6 (Sofala: 3; Manica: 3)
Processors (including microprocessors)	Semi-structured survey (quantitative component)	15 (Sofala: 9; Manica: 6)
Breeder	Semi-structured survey (quantitative component)	1

Qualitative Data Sources and Sampling Plan

We will complement the quantitative data with qualitative data collected from farmers, community-livestock workers (CLWs), processors, cooperatives, retailers, student interns, and lecturers. These project beneficiaries will be purposively selected to ensure representation of gender and location.

We will conduct focus group discussions with the dairy farmers. Working closely with local Venture37 project staff, farmers will be selected to ensure representation from different scales of production and districts. Using the contact information given to us by Venture37, we will work with our data collection partner to select a sample that meets our criteria. We will collect qualitative data from all aggregation and value-added facilities and processors during their structured interviews. Since the largest dairy farm in our sample is also a breeder and a large processor, we will also collect four types of data: (1) farmer survey (as described above); (2) processor semi-structured survey; (3) breeder semi-structured survey; and (4) a producer qualitative interview.

We will also interview ancillary beneficiaries, such as lecturers from universities where the project has done outreach, as well as other key stakeholders involved in the implementation of the program and development of policy and regulatory frameworks, including project staff, project partners, government representatives, and retailers. The names and contact information for these stakeholders will be provided to us by Venture37. We will work with local Venture37 staff to select the ancillary beneficiaries. All appropriate project staff and government representatives will be interviewed. **Exhibit D-3** summarizes our proposed respondents for the qualitative data collection.

Exhibit 69. Qualitative Data Sources

Stakeholder Type	Data Collection Method	Target Sample Size
Aggregation & Value Addition Facilities (Cooperatives)	Semi-structured survey (interview component)	6 (Sofala: 3; Manica: 3)
Processors (including microprocessors)	Semi-structured survey (interview component)	15 (Sofala: 9; Manica: 6)
Breeder	Semi-structured survey (interview component)	1
Dairy Farmers	Focus group discussions	4 groups of 4-5 participants (Sofala: 1 group; Manica: 3 groups)
Community Livestock Workers (CLWs)	Key informant interviews	5 (Sofala: 2; Manica: 3)
Student Interns	Key informant interviews	11 (Sofala: 7; Manica: 4)
Other Stakeholders	Key informant interviews	USDA – 2; Project Staff – 4; Government representatives – 4-6; Lecturers – 2; Producer (Clifton Meadows) – 1; Retailers – 2-4
Service Input Providers	Key informant interviews	Veterinary shops – 3-6 Feed suppliers – 2-4

Data Collection Methods

As explained above, we will develop different types of qualitative and quantitative instruments to address research questions for each stakeholder type's involvement in the project or dairy sector and will address overarching issues relating to the project and its activities in the sector. Overall, we will develop a dairy farmer survey, three different semi-structured surveys to cover aggregation and value addition facilities (cooperatives), processors, and breeder, qualitative guides for FGDs with dairy farmers, and KIIs with CLWs, student interns, service input providers, and other stakeholders, including lecturers, retailers, project staff, and government representatives. IMPAQ will use consistent methods and instruments for each type of project stakeholder across baseline, midterm, and final evaluation data collection to generate consistent data and insights over the life of the project. Please see **Annex F** for a list of all data collection instruments.

Focus Group Discussions

Final Evaluation Focus Group Discussion Themes

- Impact of Cyclone Idai, COVID-19, and local security issues on daily activities
- Participation in the dairy value chain
- Successes and challenges faced by dairy farmers – financial, infrastructural, technical
- Plans for future work in dairy/agriculture
- Effect of MERCADO training activities on post-harvest handling, farm management, agricultural productivity, safety and quality practices
- Perceived internal and external factors influenced project activities
- Effect of MERCADO project activities on gender constraints faced by women

IMPAQ will conduct FGDs with a sub-sample of farmers, where we will ask about their experiences with the MERCADO project, including farming practices; successes and challenges; milk productivity and sales; and unexpected outcomes. These FGDs will include discussion of how participation in MERCADO activities has affected intra-household gender dynamics, including participation of women in productive activities, distribution of the benefits of dairy activity in the household, and women’s involvement and influence in household decision-making. Depending on gathering restrictions due to the COVID-19 pandemic, we will consider limiting FGDs to 4-5 participants.

Key Informant Interviews

Final Evaluation Key Informant Interview Themes

- Impact of Cyclone Idai, COVID-19, and local security issues on the dairy sector
- Impact of reduction in project funding and timeline
- Current role in the dairy value chain
- Perceptions of critical issues in the dairy value chain
- Perceived internal and external factors influencing project activities
- Effect of MERCADO project activities on gender constraints faced by women
- Likelihood of project targets and outcomes being met by the end of the project
- Sustainability of project activities
- Extent to which activities have efficiently used resources

IMPAQ will conduct KIIs with CLWs, student interns, lecturers, service input providers, and other stakeholders, including government representatives, project staff, and retailers. The KIIs will include questions about respondents' background, current role in the dairy value chain, perceptions of critical issues in dairy value chain development, viewpoints on MERCADO's strategy and activities, and other specific issues relevant to each type of respondent. The KIIs with CLWs will ask about the impacts and challenges of providing services to farmers. For student interns, we will assess their understanding of and perspective on the potential for a career in the dairy industry and document their experiences with their internships and the MERCADO dairy curriculum. For lecturers, we will ask about their experience teaching the MERCADO curriculum and integrating the dairy module into current livestock and veterinary curriculum, how it compares to what they previously were using, and any suggestions for curriculum improvement. We will also ask retailers about any changes in demand by consumers for local dairy products.

For project staff, we will include questions related to the effectiveness and efficiency of activities, plans for sustainability of activities and outcomes after the project ends, and the effects of reducing the project funding and timeline. The KIIs with government representatives will explore the relationship between the program and the government, progress towards relevant dairy value chain legislation and regulation and if and how the government is helping to strengthen the dairy sector in Mozambique.

Panel Farm Survey

IMPAQ will modify the midterm panel farm survey to collect data from all current dairy farmers in the final evaluation survey. The structured survey will collect data on household socio-demographic characteristics and dairy activities, including production and sale of milk. There will also be data collected on the effects of Cyclone Idai, COVID-19, and local security issues, as well as engagement with the MERCADO project, production practices, finance and investments, and animal health services. The farmer household survey will also include questions on intra-household distribution of roles and responsibilities in dairy production, allowing nuanced analysis of gender dynamics over the life of the project.

Semi-Structured Surveys

Data collection for **aggregation and value addition facilities (cooperatives), processors, and breeder**, will use semi-structured surveys that IMPAQ will tailor to each type of stakeholder. Each semi-structured survey will include a component to collect basic business information; a quantitative component to collect data on procurement and sales, finance and investments, training, milk quality, labor, equipment, and record keeping; and a qualitative component using key informant interviews to obtain information on respondents' perspective on the dairy value chain and their involvement with the project.

Data Analysis

We will analyze qualitative and quantitative data separately and then integrate the findings to provide a comprehensive response to the research questions during the final evaluation of the MERCADO project.

Quantitative Data Analysis

During the final evaluation, we will analyze quantitative data from farmers and other dairy market actors. We will use descriptive statistics such as counts, tabulated proportions, and means. We will also look for common trends and patterns in the data that will inform the evaluation. As significant differences present themselves, we will disaggregate and report these descriptive statistics to reveal differences across

project stakeholders based on factors such as gender, scale of operation and location. Additionally, for each performance indicator we will disaggregate by the sub-group required by the respective indicator. We will also leverage the availability of longitudinal panel data for dairy market actors and project beneficiaries to analyze progress made on project outcomes between the midterm evaluation and the final evaluation for the same actor. To examine the linear relationship across time between key project outcomes such as milk yields and sales and explanatory variables such as production practices and socio-demographic factors, we will conduct multivariate regression analysis of the farmer data. To support multivariate analysis, we will use qualitative methods to provide insights into correlations between different practices being used and desired outcomes such as quality and sales to the extent possible. Finally, we will calculate final indicator values of key performance indicators and disaggregate them as required in the Performance Monitoring Plan.

Qualitative Data Analysis

Our qualitative data analysis during the final evaluation will identify and substantiate critical themes and issues that emerge during quantitative data collection. To analyze the qualitative data efficiently, impartially, and consistently, we will have a structured summary form of the interviews and focus groups that identifies key themes and maps them to the evaluation questions outlined in **Annex C**. We will synthesize emerging qualitative results using pattern analysis methods that identify themes in responses. Where relevant, we will differentiate results by value chain stakeholder type, as well as by respondents' gender, scale of operations and location.

Integrating Qualitative and Quantitative Data

The evaluation team will triangulate the qualitative and quantitative analyses to address the evaluation questions. We will compare key findings across both types of data. To overcome any deficiencies in the data, the team will analyze each type of data separately, as described above, and then identify if and how the two sets of findings coincide in the answers they provide to the evaluation questions. Where discrepancies exist, we will consider possible reasons. The team will also use qualitative data, whenever possible, to provide contextual information to help interpret the quantitative results. The process of examining the qualitative and quantitative findings in relation to one another will figure centrally when developing comprehensive lessons learned and recommendations based on the overall evaluation findings.

We will also incorporate a gender-sensitive lens in the final evaluation. Through the quantitative farm survey and the FGDs, we will focus on intra-household distribution of roles and responsibilities at the farm level. We will examine how MERCADO project activities affected household-level roles in decision making about dairy activities and control over milk production and revenue from sales. We will explore the perspectives of women and men about the dairy market and related value chain and the constraints and opportunities faced specifically by women. IMPAQ will identify critical gender concerns to address during evaluation design, data collection, and analysis to ensure that gender is an integral part of the MERCADO final evaluation. IMPAQ staff will ensure that all evaluation activities appropriately capture and report sex-disaggregated data for outputs and outcomes. We will also employ a gender-sensitive approach throughout our final activities by:

- Ensuring that evaluation questions ask specifically about gender inclusiveness, if appropriate

- Disaggregating all data by sex, analyze for gender differences, and report on the findings
- Keeping survey and interview work sensitive to women's schedules and availability to participate

Field Procedures

IMPAQ's local data collection team, led by a Mozambiquan research consulting and data collection firm, will organize and implement field data collection operations, along with the subject matter expert. Following revision and approval of the final inception report and data collection instruments by Venture37, IMPAQ will (1) transmit the final, approved instruments in English and Portuguese to the data collection firm; (2) program the tablet computers to be used for data collection for the farmer survey and the semi-structured surveys; and (3) troubleshoot all instruments.

Due to travel restrictions due to COVID-19, IMPAQ's home office staff will not travel to Mozambique for enumerator training. To ensure quality control, IMPAQ's home office staff will join the enumerator training remotely. Additionally, IMPAQ's subject matter expert will be present in-person throughout the training and pilot testing of the data collection instruments.

Enumerators will be recruited from local agricultural universities and from the data collection firm's existing pool of enumerators with specific experience in dairy. Enumerator training, which will take place in Chimoio, will consist of sessions designed to introduce the enumerator team to the evaluation framework and implementation context (including a training on dairy production and marketing concepts reflected in the questionnaires by IMPAQ's subject matter expert), followed by section-by-section review of data collection instruments and in-class practical application using tablets for the farmer survey. Next will come field-testing of the instruments and protocols, followed by a final in-class session during which enumerators will have an opportunity to address any remaining questions and will be informed of any changes to the instruments or protocols that have resulted from the pilot testing. The enumerator training, pilot testing, and subsequent data collection will include all safety protocols for COVID-19 including: (1) ensuring that all participants wear masks at all times; (2) maintaining a 6 feet distance amongst participants at all times, inside and outside of the training room; and (3) ensuring adequate supply of handwashing stations and/or hand sanitizer at the training venue and during data collection.

Our local data collection partner will use 10 quantitative survey enumerators, 2 facilitators for the FGDs, and 2 facilitators for the KIIs, and 1 team leader. Each team will have a supervisor who will provide data quality control (described in the next section); each team will also have two vehicles to ensure timely movement. Because approximately 75 percent of project beneficiaries are in Manica province, both teams will collect data in Manica during the first five days. During the second five days, one team will transfer to Sofala province while the other completes data collection in Manica. IMPAQ's subject matter expert will lead general oversight of field data collection and will conduct key informant interviews with select value chain respondents. IMPAQ's subject matter expert will also conduct key informant interviews with stakeholders, including project staff, partners, and government officials, and will also provide oversight, while consulting with IMPAQ, to ensure a consistent technical approach and coordination.

Quality Control Measures

Evidence-quality data is critical to successful evaluations. The IMPAQ home office will lead data quality oversight activities for the MERCADO final evaluation. The IMPAQ team will use its extensive data collection, management, and validation experience to ensure that the data collected are high-quality. We will proactively identify and address any data quality issues that arise during implementation. We have designed our evaluation approach to incorporate multiple measures that will ensure the relevance, reliability, integrity, and accuracy of data we collect. **Exhibit D-4** outlines our methods for data collection quality control.

Exhibit 70. Methods for Data Collection Quality Control

Quality Controls	IMPAQ Activities
Programming Controls	Include check-box options for electronic data collection instruments to standardize responses. Provide minimum and maximum values for numeric values. These safeguards will reduce the likelihood of data entry errors.
Regular Data Transmission	Transmit data daily (when possible) to our Washington-based research analyst to allow timely identification and remediation of any data errors or concerns with questionnaire implementation.
Recording of Qualitative Interviews	Record interview responses and develop qualitative interview summaries using a standardized template to ensure accurate representation of responses and viewpoints.
Data Quality Checks	Work with local team supervisors to lead and conduct field data quality and secondary data quality checks throughout data collection. The team supervisors will conduct data quality checks with 10% of the farmers interviewed during the previous day, using mobile phones to call and ask farmers to repeat their responses on a limited number of the survey questions. These responses will be compared with the survey responses and used to identify problem areas where additional verification and/or remedial training of enumerators is needed. At the beginning of the final evaluation start-up, IMPAQ home office staff will conduct two initial reviews of quantitative data in the first week for early identification of any data quality issues and will advise accordingly. The data collection team has wireless modems to transmit data by Internet data if a wi-fi upload is not available.

Oversight of field data collection will involve frequent and open communication between members of the IMPAQ and data collection teams so that we collaboratively identify and mitigate any issues as they arise. The quantitative data collection team will consist of 1 team leader, and 10 enumerators. For qualitative data collection, the FGDs and local KIIs will be conducted by 2 facilitators each from the data collection firm and IMPAQ's subject matter expert. The KIIs in Maputo with government stakeholders and project staff will be conducted by IMPAQ's subject matter expert.

Communication Protocol

IMPAQ's final evaluation team understands that effective communication with Venture37 Mozambique, DC, and MN offices and the highest level of quality assurance and quality control of all work products and technical deliverables are paramount. IMPAQ's management of the final evaluation will be enhanced by effective, regular communication with venture37. IMPAQ's "no surprises" policy— which all project

managers are required to follow to keep clients regularly and consistently informed about project progress, challenges, solutions, and concerns, ensures that Venture37 will always be fully informed of all relevant project activities and immediately consulted when guidance is needed. The benefit of this policy is that the IMPAQ team and Venture37 will be partners in critical decision-making and problem resolution in all matters. **Exhibit D-5** outlines the communication roles and reporting processes that each final evaluation team member will have throughout the final evaluation data collection process:

Exhibit 71. Communication Roles and Reporting Processes

Title	Communication Role
Project Manager and Quantitative Lead	▪ Main Point of Contact between final evaluation team and Venture37. ▪ All official communication will be between IMPAQ and Venture37. ▪ During field work: Check in on a weekly basis, via email and phone, when able, with Venture37. ▪ During fieldwork: communicate, in-person and by phone, with Field Team, including Team Lead, Fieldwork Manager, Supervisors, and enumerators to conduct data quality checks.
Evaluation Team Leader	▪ Main Technical Point of Contact between IMPAQ and Field Team, including Fieldwork Manager, Supervisors, and, if necessary, enumerators, in-person and by phone. ▪ Communicate with Venture37 staff on technical issues via email and/or phone.
Subject Matter Expert	▪ Communicate with Project Manager, Evaluation Team Leader, Venture37 Mozambique Staff, Fieldwork Manager, Supervisors and Enumerators on technical issues via in person, email and/or phone.
Fieldwork Manager	▪ Communicate regularly with Venture37 Mozambique staff and extension workers on logistical issues via email, in-person (especially with extension workers), and/or phone. ▪ Lead communication with respondent groups for data collection scheduling, location, and other logistics. ▪ During fieldwork: communicate with IMPAQ on a daily basis, in-person and by phone (audio and text), on technical and logistical issues.
Field Supervisors	▪ Daily check-ins with IMPAQ by phone (audio and text). ▪ Assist with communication with respondent groups for data collection scheduling, location, and other logistics. ▪ Communicate on a regular basis with IMPAQ by phone (audio and text) regarding data quality checks and issues.
Field Enumerators	▪ Daily in-person check-ins with Field Supervisors. ▪ Periodic in-person check-ins and discussions with IMPAQ, regarding data quality check and issues.

Reporting

IMPAQ will report to Venture37, through an emailed memorandum, throughout the fieldwork, on the following dates and topics:

- February 3, 2021: Summary of Enumerator Training and Finalized Data Collection Plan
- February 15, 2021: Interim report-out of Data Collection activities
- March 8, 2021: Final report-out of Data Collection activities

In addition to collecting the Farmer Survey data via tablet and the Cooperative and Processor data via paper, the Field Enumerators who are assisting with other data collection will be required to submit all of their notes and summarized findings to IMPAQ and Field Supervisors, following data collection to

incorporate relevant information into the final evaluation report. The data collection firm and IMPAQ's subject matter expert will also send final non-survey notes, reports, and summary notes from the interviews and focus groups to IMPAQ staff at the end of the data collection. IMPAQ will be responsible for sending all draft and final deliverables to Venture37 according to the contract's deliverables schedule.

Timeline (activities, responsible party, outputs, and timing)

Exhibit D-6 illustrates the anticipated timeline and responsible entity for the final evaluation, contingent on approvals from Venture37 and USDA.

Exhibit 72. Final Evaluation and Timeline

Task	Responsible	Due Date
Review of relevant documents to prepare for inception meeting	Evaluator	October 15 – November 2, 2020
Inception meeting with Venture37 to discuss protocol, methodology, sampling, tools and timeline	Evaluator and Venture37	November 2, 2020
<i>Venture37 shares TOR with IMPAQ</i>	<i>Venture37</i>	<i>November 3, 2020</i>
Finalize TOR for submission to USDA	Evaluator and Venture37	November 6, 2020
Develop an inception report and develop/update data collection tools	Evaluator	November 6-30
Additional SOW Budget sent to Venture37	Evaluator	December 2, 2020
Budget approval from Venture37	Evaluator	December 14, 2020
Inception report and tools due to Venture37 for first review	Evaluator	December 16, 2020
<i>Venture37 reviews report and tools and provides feedback, comments, and suggestions to evaluator</i>	<i>Venture37</i>	<i>December 21, 2020</i>
Updated Inception Report and Tools submitted to Venture37 for second review	Evaluator	December 29, 2020
<i>Venture37 completes second review of Inception Report and Tools</i>	<i>Venture37</i>	<i>January 5, 2021</i>
Finalize Inception Report and Tools based on Venture37's feedback	Evaluator	January 5, 2020 – January 12, 2020
Final Inception Report and Tools submitted to Venture37	Evaluator	January 12, 2020
Translated Tools (in Portuguese) submitted to Venture37 for review	Evaluator	January 15, 2021
<i>Venture37 completes review of Translated Tools</i>	<i>Venture37</i>	<i>January 19, 2021</i>
Programming, and preparation for data collection	Evaluator	January 20 – February 3, 2021
Enumerator training (<i>Manica</i>)	Evaluator	March 30 – April 4, 2021
Pilot Testing (<i>Manica</i>)	Evaluator	April 5, 2021
Updates to tools based on pilot testing (<i>Manica</i>)	Evaluator	April 6 – 7, 2021
Data collection (<i>Manica</i>)	Evaluator	April 8 – April 14, 2021
Enumerator training (<i>Sofala</i>)	Evaluator	April 10 – April 15, 2021
Pilot Testing (<i>Sofala</i>)	Evaluator	April 16, 2021
Data collection (<i>Sofala</i>)	Evaluator	April 17 – April 23, 2021
Data quality checks and data entry	Evaluator	April 23 – May 3, 2021
Data analysis and report writing	Evaluator	May 4 – June 16, 2021

Task	Responsible	Due Date
Draft Final Evaluation report submitted to Venture37 for first review	Evaluator	June 16, 2021
<i>Venture37 reviews draft report and provides evaluator with comments and suggestions for revisions</i>	<i>Venture37</i>	<i>June 16 – June 21, 2021</i>
Presentation of evaluation findings to Venture37	Evaluator	June 28, 2021
Updated Final Evaluation Report submitted to Venture37 for Second Review	Evaluator	July 9, 2021
<i>Venture37 completes second review</i>	<i>Venture37</i>	<i>July 13, 2021</i>
Finalize report based on Venture37 feedback and prepare all deliverables	Evaluator	July 14 – July 23, 2021
All Final Deliverables Due (Final Evaluation report, clean data, photos, and PPT presentation)	Evaluator	July 23, 2021

ANNEX E. TERMS OF REFERENCE

Baseline, Midterm, and Final Evaluation Terms of Reference (TOR) Mozambique Expansion of Rural Cattle and Dairy Opportunities (MERCADO) Food for Progress 2016 – Venture37 International Development

1. Executive Summary

This document contains the Terms of Reference (TOR) for conducting the baseline, midterm evaluation (MTE), and final evaluation (FE) of the four-and-a-half-year, \$14.5 million MERCADO Food for Progress Program, funded by the United States Department of Agriculture (USDA) and implemented by Land O'Lakes Venture37 (Venture37) from October 1, 2016 – April 30, 2021. The project is implemented in Manica and Sofala Provinces of Mozambique with the aim to establish a commercial-oriented, sustainable, and competitive dairy market system in Mozambique through reaching USDA's priority objectives of increasing agricultural productivity and expanding trade of agricultural products. Venture37 is updating this TOR for the final evaluation. This document includes background information on the MERCADO project, the desired methodology, including objectives and illustrative questions, the timeframe for conducting the evaluations and a list of required deliverables.

To maximize consistency in the evaluation approach and methodology, Venture37 intends to use one evaluator to design and administer the baseline, midterm, and final evaluations. The use of one team for all evaluations will provide continuity in the evaluation process. The team will have a deeper understanding of the program and be able to build on each previous evaluation to strengthen subsequent evaluation designs, strategies, and findings. Venture37 will work with the same firm for the final evaluation as it did for the baseline and midterm based on a satisfactory baseline product.

2. Background

Country Context

Mozambique has a great potential for dairy production, but following independence in 1975, a 16-year civil war caused the dairy industry to virtually disappear. Historically, the peak in number of dairy cows and milk production was in 1973 with 13,200 cows and 13,020,000 kg of milk produced. Currently, the official statistics place the number of dairy cows at 2,209, of which the provinces of Sofala and Manica (Beira Corridor) comprise 80.4%.

The decrease in number of dairy cows, together with poor management has made the country completely dependent on imports for milk and milk products. In 1992, the contribution of the national production to the total milk and dairy products consumed was 6%, a figure that has remained without major changes 20 years later at 6.4%.

The Strategic Plan for Dairy Development in Mozambique and government interventions so far indicate the Beira Corridor as a priority for the re-establishment of dairy production in the country and the potential for dairy production in Maputo, Zambezia, and Nampula. The peri-urban areas of Beira and Chimoio cities, where dairy production is now being re-established by Venture37, are the same areas where dairy farms have been concentrated previously.

Previous Projects

In 2008, Venture37 began work to develop the nascent dairy sector in Manica Province, Mozambique with the \$5.3 million Manica Smallholder Dairy Development Project (MSDDP), funded by USDA. Over a forty-two month period, the program supported the rebuilding of the national dairy herd through the purchase, multiplication and distribution of 513 improved breed dairy cattle. The program also trained more than 1,750 smallholder dairy farmers in feed/fodder techniques, soil conservation and animal husbandry and health, and established 3 producer-level cooperatives and milk collection centers. Additionally, together with partner, Tiller's International, the project built local capacity of over 4,000 farmers in animal traction to increase agricultural productivity.

In September 2012, Venture37 began another USDA funded program, Mozambique Dairy Development Program (MDDP), to intensify their work in Manica and expand to Sofala and Maputo Provinces, with additional support to processors and input providers. Over 3 years, MDDP co-financed 229 improved breed dairy cattle with farmers, trained 5,084 farmers and students in improved animal husbandry practices, and established and trained 10 producer-level cooperatives and 10 milk collection centers in business and quality standards. Additionally, with Tillers International, the project built the capacity of another 14,384 farmers in animal traction.

Current Project Description

The MERCADO program is taking a private sector-driven, market systems approach to transforming Mozambique's dairy sector in Manica and Sofala provinces, so that it is more competitive locally, regionally and nationally. The program continues to build the capacity of dairy producers, cooperatives, and processors to improve their productivity, as well as their milk quality and business practices. It is expanding dairy input service delivery, including extension services, animal health services, and feed and fodder. It is also facilitating access to finance to purchase livestock, production and trade infrastructure, promote private investment in the dairy sector, and strengthening linkages between buyers and sellers. Specifically, the project focuses on seven main activities:

Activity 1 – Financial Services: Facilitate Investment in Dairy Herd Restocking

Venture37 is continuing to restock the Mozambican dairy cattle herd by importing dairy cattle and establishing a Dairy Herd Fund (DHF) to enable enterprise-minded farmers to access capital to purchase both imported and local dairy cattle. Commercial breeders can also access this fund to expand their dairy herds and to invest in appropriate reproduction techniques to reduce the need for imported cattle in Mozambique. Venture37 will use the DHF to provide in-kind grants using a scaled match component.

Activity 2 – Financial Services: Facilitate Investment in the Dairy Sector via Innovation Fund

Venture37 will develop a Dairy Innovation Fund (DIF) that entrepreneurs, including input and service providers, producers, processors, and retailers, can access to finance equipment, infrastructure and other innovations to expand their businesses. Venture37 will also identify entrepreneurs in input or service provision and link them to the DIF or financial institutions to access finance to develop and grow their enterprises. Venture37 will use the DIF to administer in-kind grants using a scale match component.

Activity 3 – Training: Improved Farm Practices

Venture37 is building the capacity of dairy farmers to improve animal health, nutrition, and farm business acumen to increase milk production and herd growth. Venture37 is providing on-going support and guidance to dairy farmers on improved feeding and use of appropriate technologies, including fodder production and animal nutrition. Additionally, Venture37 is providing training to dairy farmers on husbandry, including topics such as breeding, mastitis control, hygiene, and animal health. Venture37 is also training farmers in farming as a business, including facilitating linkages between farmers and technology, input, and service providers.

Activity 4 – Training: Improved Post-Harvest Handling, Food Safety and Quality

Venture37 is helping to improve post-harvest handling to decrease post-harvest loss, focusing on the cold-chain from production to retailers. Venture37 has identified weaknesses in the cold chain to design appropriate training for farmers, cooperatives, and processors on post-harvest handling, including topics such as hygiene, quality control, processing, and awareness of zoonotic diseases like *brucellosis* and tuberculosis. Venture37 is providing technical support to processors, who are providing training on post-harvest handling, food safety and quality to cooperatives.

Activity 5 - Capacity Building: Agricultural Extension Agents/Services

Venture37 is working with educational institutions, processors, cooperatives, and other input providers to make dairy extension services available to farmers. Venture37 is supporting educational institutions to build a cadre of professionals in the dairy sector, through activities such as integrating dairy into current livestock and veterinary curricula, setting up demonstration farms for training and facilitating dairy internships. Venture37 is continuing to support community livestock workers who are providing guidance and veterinary services to dairy and livestock farmers. Venture37 is also facilitating linkages between the community livestock workers and private or government veterinary services. Venture37 is also supporting processors, cooperatives and other businesses interested in developing appropriate support services and inputs to farmers. Venture37 is also supporting the establishment of local breeders to provide an in-country supply of dairy cattle. This support is building their dairy breeding skillsets and help breeders explore the effectiveness of various breeding technologies.

Activity 6 - Capacity Building: Aggregation and Value- Addition

Venture37 is increasing market access by supporting milk bulking and value addition in local businesses. Venture37 is working with existing milk bulking businesses, such as cooperatives, to enhance growth and profitability. Venture37 is also exploring and implementing alternative milk bulking models, such as working with dairy farmers, private businesses, and processor-owned bulking facilities. Venture37 is supporting these businesses to expand into areas such as cold chain management, processing, and retail opportunities. These opportunities could include developing transport systems, purchasing processing equipment to process the milk on site, and creating milk kiosks to sell directly to customers. Venture37 is also training youth on nutrition, food safety and dairy quality to promote consumption of dairy products. Venture37 is facilitating a marketing campaign to stimulate alternative markets through promotion of locally produced milk products.

Activity 7 - Capacity Building: Promote Improved Policy and Regulatory Framework

Venture37 and key dairy sector stakeholders, including dairy producers, cooperatives, processors, input and service providers, and private sector investors are working with the government to examine the current policy and regulatory framework in order to identify barriers to growth in the dairy industry and recommend effective solutions. Based on the results, Venture37 is supporting capacity building and networking opportunities for key government staff and other stakeholders to increase their ability to strengthen the Mozambican dairy sector. Through a consultative process, Venture37 is also facilitating the development of a private-sector-led representative body for the dairy sector to support the needs of the dairy industry, including helping them to develop their mission statement and strategy. The entity is engaging the Government of Mozambique to advocate for reforms in the policy and regulatory framework to support growth and investment in the dairy sector.

3. Evaluation Design

Purpose and Objectives of the Evaluation

The purpose of the baseline, MTE, and FE are to analyze and document the extent to which the program has achieved its goals and objectives and to explain any deviations from the plan (See Annex 1 & 2 for the results framework and key outcome indicators). The baseline will also contain an initial gender analysis that will not be a part of further evaluations. Specific objectives for each evaluation are listed below:

Baseline Objectives

The baseline evaluation will:

- Understand the current state of key dairy actors, including demographics, socioeconomic status, businesses finances, and dairy-related practices and technologies;
- Understand the gender constraints and opportunities and make recommendations to ensure that both sexes are equally able to participate and benefit from the project;
- Establish the project baseline values;
- Provide recommendations for setting and refining targets for project indicators in accordance with the findings;
- Identify potential strengths, weaknesses, opportunities and threats to project implementation in the target areas;
- Develop strategies to maximize strengths and mitigate challenges; and
- Generate data to be used for comparative analysis across the life of the project to measure change.

Midterm Evaluation Objectives

The mid-term evaluation will:

- Assess the relevance of the project strategy and approach as well as the validity of assumptions made during project design;
- Measure progress from baseline, including the effectiveness and efficiency of interventions in achieving established targets;
- Assess how women and men have benefited differently from the project;
- Document lessons learned, challenges and unanticipated effects;

- Identify enablers and constraints to progress (both internal and external factors) that have supported or limited success of the project;
- Assess sustainability efforts to date;
- Provide recommendations for necessary corrections to strengthen project performance, efficiency and sustainability; and
- Provide recommendations for areas of focus for the final evaluation, including reviewing and strengthening data collection systems and metrics in preparation for the final evaluation.
- Assess the effect of cyclone Idai on MERCADO project participants and the dairy value chain as a whole in both Sofala and Manica provinces.
- Provide recommendations on the activities that could be discontinued without greatly affecting the project outcomes, to account for a reduction in monetization proceeds.

Final Evaluation Objectives

The final evaluation will:

- Assess whether the project has achieved the expected results as outlined in the results frameworks (see Appendix A);
- Assess the relevance, effectiveness, efficiency, impact, and sustainability of project activities;
- Measure progress from baseline and midterm and assess attribution to the extent possible;
- Assess how women and men have benefited differently from the project;
- Identify lessons learned through the duration of the project with an emphasis on identifying key strategies, methodologies and factors that contributed to and/or inhibited success, focusing on areas that could be applied to similar programming;
- Draw conclusions and provide recommendations to Venture37, USDA, project participants, project partners, and other stakeholders, including the Government of Mozambique and USDA Washington, to strengthen future or similar projects;
- Assess the effect of the reduction in funding and resulting shortened life of project;
- Assess the effect of cyclone Idai on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
- Assess the effect of the COVID-19 pandemic on MERCADO project participants and the dairy value chain as a whole, in both Sofala and Manica provinces;
- Assess the effect of security issues on MERCADO project participants, including how security issues have affected both supply and demand of dairy products; and
- Assess how effectively the project pivoted project activities due to the above issues (reduced funding, cyclone Idai, COVID-19 pandemic, and security issues).

Evaluation Questions

The evaluation will answer the following key questions within the standard evaluation criteria:

Relevance	• Do the results framework, assumptions, program design and project activities meet the needs of the participants and local conditions in Mozambique's Manica and Sofala Provinces? • How well aligned are MERCADO's strategy and activities with the development goals, objectives and strategies of USDA, the U.S. Government and the Mozambican Government?
Impacts	• What impacts are the project activities having on the program participants, both positive and negative, especially in relation to the expected results and strategic objectives?

	○ How has the project-provided training impacted the knowledge and uptake of improved agricultural, farm management practices and post-harvest handling? ○ How has the use of improved practices affected agricultural productivity, (<i>measured through liters of milk per day, number of days of lactation, and calving interval for dairy and through yield for forage</i>)? ○ To what extent has increased access to input suppliers affected the uptake of improved agricultural techniques, farm management practices, post-harvest handling, and use of improved infrastructure for farmers? ○ How has training in improved safety and quality affected the rate of rejection of milk at the aggregation level? ○ How have project activities influenced total value and quantity of milk and milk product sales? ○ How is value-capture distributed across different milk market system actors? What can be done to improve value capture and profitability of the actors? ○ To what extent has access to finance affected the growth of farmer dairy businesses? ○ To what extent has access to finance affected uptake of improved processing techniques, quality standards, and improved infrastructure for processors? ● What internal and external factors have influenced the ability of the project to meet expected results and targets? ● How did the reduction in funding and shortened LOP, Cyclone Idai, the COVID-19 pandemic, and security issues influence the program's results? ●
Effectiveness	● To what extent are the program targets and outcomes achieved at the end of the project? ● What key successes could be replicated or key improvements could be made to future projects to maximize the results of MERCADO?
Efficiency	● Were the resources and activities provided by the program carried out in a timely manner and with effective use of resources? ● How well was the project managed and M&E data used to make programmatic decisions?
Sustainability	● Which project activities and benefits are likely to be sustained or not sustained past the project lifespan? Why? ● What exit strategy has the project put into place to ensure the sustainability of the project outcomes?
Gender Equality and Equity	● How did the project address the constraints faced by women in the dairy sector? ● What did the program do to ensure participation of both men and women? What could the program have done better? ● How did the outcomes of the project differ between men and women? What could the project have done differently to ensure that equal benefits accrued to both women and men?

Evaluation Methodology

The project evaluation should be carried out in a participatory manner that actively seeks partner, participant, and stakeholder feedback. The evaluation will use a non-experimental design, comparing progress on key outcomes over time for project participants – dairy farmers, Cooperatives/MCCs, processors, students, breeders, and input and service providers. Quantitative and qualitative data will be collected from program participants by external evaluators at baseline, midterm, and final evaluation. This will be supplemented with data collected by project staff semi-annually, and monitoring data collected throughout project implementation. While an experimental design would be preferable for ensuring attribution, it is not possible for this evaluation to use a counterfactual, since the dairy industry in Mozambique is nascent and it is essential that the project work with all dairy producers and enterprises that are interested in participating.

This section details the type of data expected to be collected from stakeholders to answer the key evaluation questions. A summary of the data collection methods relevant to this TOR can be found below. The current sample frame for the final evaluation is 252 dairy producers with 12,172 dairy cows, 9 processors (2 processors and 7 micro-processors), 4 Milk Kiosks (3 cooperative-owned and 1 privately-owned), 5 cooperatives, all of them owning MCCs, 1 dairy breeder, 22 CLWs, 28 student interns, 209 students trained in technical schools, and 6,237 youth, teachers and staff trained in nutritional value of milk.

Stakeholder	Data Collection Method	Timing		
		Baseline	Midterm	Endline
Dairy Farmers	Farm Survey	X	X	X
	Focus Group Discussions	X	X	X
Aggregation & Value Addition Facilities	Semi-structured Interview	X	X	X
	Key Informant Interview	X	X	X
Processors	Semi-structured Interview	X	X	X
	Key Informant Interview	X	X	X
Dairy Breeder	Semi-structured Interview	X	X	X
Input and Service Providers	Surveys or Interviews	X	X	X
Student Interns	Key Informant Interview	X	X	X

Other Stakeholders	Key Informant Interview	X	X	X

Dairy Farmers: Quantitative data will be collected from all dairy farmers throughout project implementation as a panel study. At baseline, midterm, and endline, data will be collected from dairy farmers through a farm questionnaire to assess their current dairy practices, lactation volumes and length, calving intervals, milk sales and costs, hired labor, forage establishment and yields, and other related information. Since the population of dairy farmers is relatively small, the entire population will be surveyed at baseline, midterm and final evaluation. The population at midterm and final evaluations are expected to be smaller than the baseline study because some farmers may decide to sell their cows. Additionally, the project may also gradually stop working with small-scale dairy farmers to focus on building capacity of farmers with larger amounts of cattle. Farmers who continue to own livestock, even after the project has stopped providing support, will continue to be included in the panel study at midterm and final evaluation in order to assess sustainability of knowledge and perceptions after the project support is complete.

Qualitative data will also be collected from dairy farmers through focus group discussions at baseline, midterm, and endline in each of the provinces. The focus group discussions will provide context to the quantitative data to describe why dairy farmers are or are not changing their agricultural practices, how they are engaging with the aggregation centers and processors, feedback on their experience with the project, and gender considerations.

Aggregation and Value Addition Facilities: Milk from individual farmers is currently bulked at Milk Collection Centers (MCCs), owned by cooperatives. The project will work with current viable aggregation facilities and explore other opportunities for aggregation and value addition. The evaluations will use production and financial data collected by the aggregation and value addition facilities, including the volume of milk collected, rejection rate of milk at aggregation level and at processor level, proceeds from milk sales, and costs of aggregation.

The evaluation will also collect quantitative and qualitative information from the aggregation and value addition facilities through structured key informant interviews to understand changes they have made to their post-harvest handling practices, successes and challenges, feedback on how to improve program activities, and gender considerations.

Processors: Processors will share certain production and financial data for the evaluation, including the amount of milk collected from project-supported farmers and aggregation facilities, and total sales of milk products. For some of the smaller micro-processors, project staff will provide ongoing capacity building to collect this information to ensure its validity.

The evaluation will also collect quantitative and qualitative data through structured key informant interviews with each of the processors to understand changes they have made to their processing practices, other services they are providing to smallholder farmers, such as feed and technical assistance, successes and challenges in their current functioning, suggestions for project improvement, and gender considerations.

Input & Service Providers: The evaluation will conduct key informant interviews or surveys at baseline, midterm and final evaluation with dairy input and service providers supported by the project, including breeders, community livestock workers, etc. These surveys or interview will help to understand how they have participated in the project, the financials and viability of their businesses, challenges and successes, suggestions for improvement, and gender considerations.

Other Key Stakeholders: The evaluation will conduct key informant interviews at baseline, midterm, and final evaluation with other key dairy stakeholders, student interns, government vets, local leaders, members of dairy sector representative body, government officials and program staff to understand how they have participated in the project, challenges and successes, suggestions for improvement, and gender considerations.

Monitoring Data: In addition to the data described above, the evaluation will also use monitoring data collected by project staff at every project event throughout implementation. Monitoring data will include training details and attendance, co-financing provided and the products purchased, and periodic financial and production reports from aggregation/value addition facilities and processors.

Analysis

Quantitative data from dairy farmers will be analyzed through direct comparison between baseline (since we are interviewing the same dairy actors) to understand the changes in key indicators that occurred over time. Financial data from the aggregation/ value addition facilities and processors will be compared over time and analyzed to understand value capture and profitability. Qualitative data will be transcribed and analyzed by theme.

4. Key Tasks

For each of the baseline, midterm, and final evaluations, these key activities must be completed:

Review of Documents: Undertake review of the MERCADO program documents, previous Mozambique program documents, and other relevant documents that are available at the time, including, but not limited to, the following:

- Project agreement with USDA including the MERCADO scope of work
- MERCADO Evaluation Plan

- MERCADO Performance Management Plan (PMP)
- MERCADO Internal Performance Monitoring, Evaluation and Learning Plan (PMELP)
- Semi-Annual and Annual Data collected internally (at Midterm and Final Evaluation)
- Monitoring data (at Midterm and Final Evaluation)
- Baseline report & data collection tools (at Midterm and Final Evaluation)
- Midterm report & data collection tools (at Final Evaluation)
- Special Studies conducted throughout implementation (at Midterm and Final Evaluation), including Barriers to Growth of the Mozambique Milk Market, Financial Services Study, Dairy Breeding Desk Study, Dairy Cattle Breeding Policy Study, Assessment of Opportunities for Alternative Aggregation Models, and Input and Service Provision Study.
 - Two additional studies that were carried out between MTE and FE:
 - “Solutions to Animal Source Foods Challenges During COVID-19” – Thought piece is published on Venture37’s website: <https://www.landolakesventure37.org/insights-hub/solutions-to-animal-source-foods-challenges-during-covid-19>
 - “Impact of the MERCADO project in expanding access to locally produced dairy products through support provided to bulk aggregators, processors and retailers to improve cold storage, and through the promotion of new retail outlets” – Report will be finished in November 2020
- Semi-annual reports submitted by Venture37 to USDA (at Midterm and Final Evaluation)
- Final Evaluations of the two previous Mozambique Dairy Programs
- Any other program documents which will enable the evaluator to get acquainted with the project progress
- Relevant Government of Mozambique reports and documents for background information and establishing the socio-economic and political context in which MERCADO occurred

Refinement of methodology and data collection tools: The evaluator, in close collaboration with the Venture37, will do the following:

- Develop/revise a finalized methodology to carry throughout the three evaluations, including a sampling frame, sampling technique and sample sizes for both quantitative and qualitative surveys that is consistent with the desired methodology in this TOR
- Develop/revise data collection tools for both quantitative and qualitative data collection, including tools for gender analysis at baseline. Surveys should be comparable throughout the three studies to ensure comparability of data over time, but additional questions should be added or tools created at MTE/FE to explore participation in the project activities, and to ensure all evaluation questions, described above, are answered.
- Based upon a reading of the program documents, propose any additional topics or issues for analysis prior to conducting each evaluation.

Field Data Collection

- Plan and coordinate the necessary logistics to collect the data in accordance with the selected methodology.
- Pre-test, edit, translate, finalize and reproduce the survey instruments.
- Train and orient enumerators and data collection team.
- Carry out the fieldwork using own transportation, including household surveys, focus group discussions, and interviews with key informants such as processors, input providers, breeding farmers, government, local leaders and Venture37 program staff.

Data entry, analysis and reporting

- Enter, clean, synthesize, analyze, and interpret data from both the quantitative surveys and the qualitative protocols using approved statistical packages.
- Prepare a draft final evaluation report, including a discrete section for the gender analysis at baseline, addressing the objectives and questions of this evaluation outlined in this TOR and recommendations on the overall Venture37/FFPr MERCADO project for potential similar future project for review by Venture37 staff and stakeholders.
- Develop a PowerPoint presentation of evaluation findings, present and submit to Venture37 and stakeholders.
- Prepare a final evaluation report that includes revisions based on feedback on the draft report and presentation.

5. Timeframe

The anticipated final evaluation timeline is provided below. The final evaluation is expected to commence November 2, 2020.

Final Evaluation

Task	Responsible	Due Date
Review of relevant documents to prepare for inception meeting	Evaluator	October 15 – November 2, 2020
Inception meeting with Venture37 to discuss protocol, methodology, sampling, tools and timeline	Evaluator and Venture37	November 2, 2020
<i>Venture37 shares TOR with IMPAQ</i>	<i>Venture37</i>	<i>November 3, 2020</i>
Finalize TOR for submission to USDA	Evaluator and Venture37	November 6, 2020
Develop an inception report and develop/update data collection tools	Evaluator	November 6-30
Inception report and tools due to Venture37 for first review	Evaluator	November 30, 2020
<i>Venture37 reviews report and tools and provides feedback, comments, and suggestions to evaluator</i>	<i>Venture37</i>	<i>November 30 – December 3, 2020</i>
Updated Inception Report and Tools submitted to Venture37 for second review	Evaluator	December 15, 2020
<i>Venture37 completes second review of Inception Report and Tools</i>	<i>Venture37</i>	<i>December 15-18, 2020</i>
Finalize Inception Report and Tools based on Venture37's feedback	Evaluator	December 18-30, 2020
Final Inception Report and Tools submitted to Venture37	Evaluator	December 30, 2020
Translated Tools (in Portuguese) submitted to Venture37 for review	Evaluator	January 8, 2021
<i>Venture37 completes review of Translated Tools</i>	<i>Venture37</i>	<i>January 12, 2021</i>
Programming, and preparation for data collection	Evaluator	January 12-25, 2021
Enumerator training	Evaluator	January 25-30, 2021
Pilot Testing	Evaluator	January 31, 2021
Updates to tools based on pilot testing	Evaluator	February 1-2, 2021
Data collection, data quality checks, and data entry	Evaluator	February 3 – March 5, 2021
Data analysis and report writing	Evaluator	March 8 – April 19, 2021
Draft Endline report submitted to Venture37 for first review	Evaluator	April 19, 2021
<i>Venture37 reviews draft Endline report and provides evaluator with comments and suggestions for revisions</i>	<i>Venture37</i>	<i>April 19-23, 2021</i>

Task	Responsible	Due Date
Presentation of evaluation findings to Venture37	Evaluator	April 30, 2021
Updated Endline Report submitted to Venture37 for Second Review	Evaluator	May 10, 2021
<i>Venture37 completes second review</i>	<i>Venture37</i>	<i>May 13, 2021</i>
Finalize report based on Venture37 feedback and prepare all deliverables	Evaluator	May 13-24, 2021
All Final Deliverables Due (Final Endline report, clean data, photos, and PPT presentation)	Evaluator	May 24, 2021

6. Required Deliverables

For each of the baseline, MTE, and FE, the deliverables under this consultancy are listed below. This table indicates the due dates for the deliverable for the final evaluation.

Deliverable	Description	Due Date
Inception Report	Report should describe the following: - Understanding of the project based on project documents and literature review - Finalized methodology including detailed sampling plan and field procedures - Quality control measures - Communication protocol - Finalized timeline (activities, responsible party, outputs, and timing) - Draft Data collection tools	December 30, 2020
Final Data Collection Tools	Electronic copies of all clean and final English-version of data collection tools	February 2, 2021
Draft Endline evaluation report	The report should be submitted in English addressing all the evaluation objectives and questions listed in the scope of work.	April 19, 2021
PowerPoint Presentation	Presentation should include an abbreviated list of evaluation findings that can be presented to relevant internal and external stakeholders	April 30, 2021
Final Cleaned Data	Clean and final English versions of: - Quantitative data sets in Microsoft-Excel <u>and</u> any other utilized format (SPSS, STATA, etc.) - qualitative notes, field and interview notes, complete list of key informant interviews and FGDs in Microsoft-Word document	May 24, 2021
Final version of the Endline report	Electronic copy of the final evaluation report should be submitted in English in both Microsoft- Word and PDF version. Report should include the following sections: - Acknowledgements - List of Acronyms and abbreviations - Table of Contents - Executive Summary (no longer than two pages) - Background (Program description and purpose of baseline) - Methodology and Implementation - Results and Findings (in accordance with the objectives) - Gender Analysis - Recommendations (for future similar project) - Annex: Table of key program indicators with updated values in comparison to baseline values (for the midterm and final evaluations) - Annex: Results Frameworks - Annex: Scope of Work for the evaluation	May 24, 2021

Deliverable	Description	Due Date
	m. Annex: Inception Report for the evaluation n. Annex: Survey Instruments: questionnaire(s), survey(s), interview protocol(s), focus group discussion protocol(s)	
High-Quality Photos	10-15 high-quality pictures of the process	May 24, 2021

Please note that a draft evaluation report that does not meet Venture37 expectations in terms of quality will not be accepted.

7. Relationships and Responsibilities

Venture37 intends to contract with the same organization for the baseline, midterm, and final evaluation if the previous study deliverables meet expectations. In the event that Venture37 expectations are not met, a new competitive recruitment process will be completed in alignment with USDA policies. The evaluation firm will be financially and legally independent of Venture37 and its partners to ensure evaluation validity.

The evaluator will perform the tasks described in this TOR with support from MERCADO staff members, assigned by the Chief of Party, to provide relevant documents and information and to locate participants and stakeholders. The evaluation team will communicate with the MERCADO Monitoring & Evaluation Manager and the headquarters MEL Senior Manager and keep them informed of their progress. Venture37 staff and stakeholders will provide feedback on the inception report, data collection tools and draft report. During the evaluation, the evaluator may ask for additional advice or guidance from the above-mentioned Venture37 staff, but the evaluator should conduct the evaluation with independence and impartiality.

Venture37 Global Monitoring Evaluation and Learning (GMEL) team, based in the Venture37 headquarter office, will give the final approval on all evaluation deliverables and will work closely with the Mozambique MEL team to ensure the deliverables are reviewed and shared among relevant staff and stakeholders.

8. Logistics

The assignment will require travel to targeted program regions of Manica and Sofala Provinces. All resources (e.g. interpreters, enumerators, transport, and hotel reservations) should be arranged by the evaluator.

9. Resulting Contract

Venture37 intends to issue a firm fixed-price contract for the midterm evaluation. Subsequent contracts for the final evaluation will be considered based on satisfactory performance of all contract terms.

ANNEX F. SURVEY INSTRUMENTS

MERCADO FINAL EVALUATION FARMER SURVEY

SECTION 0. BASIC INFORMATION

[Enumerator Instruction]: Please fill these questions prior to asking for consent from the respondent.

[Instrução para o Inquiridor]: por favor, respondaa estas perguntas antes de pedir o consentimento do entrevistado.

VARIABLES	INTRODUCTION AND SURVEY ID	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
note_sec_0	[Enumerator Instruction]: Please fill these questions prior to asking for consent from the respondent. [Instrução para o Inquiridor]: por favor, preencha estas perguntas antes de pedir o consentimento do entrevistado		
sc0_1_1_LON sc0_1_1_LAT	GPS coordinates <i>Coordenadas de GPS</i>		
sc0_3_1	Province Província 6 Manica 7 Sofala	*Select only one option *Selecione apenas uma opção	
sc0_3_2	District Distritos 61 Gondola 62 Macate 63 Sussundenga 64 Vanduzi	*Select only one option *Selecione apenas uma opção *Ask if sc0_3_1 = 6	
sc0_3_3	Community Comunidade 611 Amatongas Centro 612 Amatongas Socel	*Select only one option *Selecione apenas uma opção	

	613 Bengo 614 Cafumpe 615 Francisco Manyanga 616 Ganhira 617 Gondola Sede 618 Mafora 619 Mazicuera 6110 Mudima 6111 Zipinga 6112 Belas 6113 Chigodole 6114 Chimoio 6115 Chirimera 6116 Chitanaque 6117 Chitundo 6118 Cruzamento 6119 Macadeira 6120 Marera 6121 Matsinho 6122 Matsinho/Chirimera 6123 Nhademba 6124 Nhamakamba 6125 Sussundenga 6126 Vanduzi 6127 Zembe 1 6128 Zembe 4 98 Other	*Ask if sc0_3_1 = 6	
sc0_3_3_OTHER	Other, please specify Outro, por favor especifique	*Ask if sc0_3_3 = 98	
sc0_3_3_1	District Distrito 71 Buzi 72 Caia 73 Chemba 74 Cheringoma 75 Chibabava	*Select only one option *Selecione apenas uma opção *Ask if sc0_3_1 = 7	

	76 Dondo 77 Gorongosa 78 Marromeu 79 Machanga 710 Maringue 711 Muanza		
sc0_3_3_2	Community Comunidade 711 Nhangau 712 Manga - Mascarenha 713 N'dunda II 714 Canhandula 715 Inhamizua 716 Matadouro 717 Ceramica 718 Mandruzi 719 Nhamainga 7110 Balanca 7111 Macharote 7112 Consito 7113 Mafarinha 7114 Jasse – Estacao 7115 Metuchira 98 Other Outro	*Select only one option *Selecione apenas uma opção *Ask if sc0_3_1 = 7 Faça a pergunta se sc0_3_1 = 7	
sc0_3_3_2_OTHER	Other, please specify Outro, por favor especifique	*Ask if sc0_3_3_2 = 98 Faça a pergunta se sc0_3_3_2 = 98	
sc0_3_5	Household head full name (from list) Nome do chefe da familia (da lista)		
sc0_3_4	Respondent number (from list) Número do entrevistado (da lista)		
[Enumerator Instruction]: Please read the informed consent script and obtain consent from respondent. [Instrução para o Inquiridor]: Por favor, leia a solicitação de consentimento e obtenha o consentimento do entrevistado.			

sc0_2_1	<i>(Introduction)</i> Hello, my name is ____ and I am part of a team hired by Venture37 to conduct a survey regarding dairy production. May I speak with one of the heads of household, preferably someone who has participated in dairy production on your farm? <i>Present letter of introduction.</i> With your permission, I would like to ask you questions about your household and your dairy activities. This will improve our understanding of dairy activities in the area and the households that work in dairy, helping Venture37 to better support the sector. This study will be conducted with all dairy producers in the area supported by Venture37. Your answers will be kept confidential and will not be used for any purpose other than in a report that will help inform the dairy project being implemented by Venture37. The interview should last about an hour. Participation is voluntary and you can choose not to take part. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer. Venture37 would like you to feel free to be open and honest in your responses. Knowing the true situation in your dairy production activities will help them provide better support to you in the future. There are no penalties to you for not participating or not answering a question. Neither your participation nor your responses will affect your ability to receive Venture37's assistance now or in the future. Do you have any questions about any of the things I have just said? 1 Yes → answer questions from respondent 2 No → continue to next question <i>(Introdução) Olá meu nome é __ e faço parte de uma equipe contratada pela Venture 37 para realizar uma pesquisa sobre produção de leite. Posso falar com um dos chefes de família, de</i>		

	<i>preferência alguém que tem participado na produção de leite na sua farma?</i> <i>Mostre a carta de apresentação.</i> <i>Com sua permissão, gostaria de lhe fazer perguntas sobre a sua casa e as suas atividades na produção de leite. Isto irá melhorar a nossa compreensão das atividades leiteiras na área e das famílias que trabalham com produção de leite, ajudando a Venture 37 a apoiar melhor o setor. Este estudo será conduzido com todos os produtores de leite na área apoiada pela Venture 37. Suas respostas serão mantidas confidenciais e não serão usadas para qualquer outro propósito que não seja em um relatório que ajudará a informar o projeto de leite que está sendo implementado pela Venture 37.</i> <i>A entrevista deve durar cerca de uma hora. A participação é voluntária e você pode optar por não participar. Você também pode optar por se recusar a responder a quaisquer perguntas que deixam desconfortável ou não quer responder. Venture 37 gostaria que você se sentisse livre para ser aberto e honesto em suas respostas. Conhecer a verdadeira situação das suas atividades de produção de leite irá ajudá-los a lhe prestar uma melhor assistência no futuro. Não será penalizado por não participar ou não responder a uma pergunta. Nem a sua participação nem as suas respostas afetarão a sua capacidade de receber assistência da Venture 37 agora ou no futuro.</i> <i>Tem alguma pergunta sobre as coisas que acabo de dizer?</i> <i>1 - se Sim, responda as perguntas do entrevistado</i> <i>2 - se não, passe para a próxima pergunta</i>		
Covid_note	Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public		

	setting, an exposure risk remains. It is important that these matters are recognized prior to your participation. By participating in this interview, you acknowledge the COVID-19 safety protocols and aware of the risks for collecting data during this pandemic. <i>Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.</i>		
sc0_2_2	Are you willing to participate in this interview? <i>Você está disposto a participar desta entrevista?</i> 1 Yes <i>Sim</i> 2 No → thank respondent for his/her time and conclude interview <i>Não → agradecer ao entrevistado pelo seu tempo e concluir a entrevista</i>	*Select only one option <i>*Selecione apenas uma opção</i>	
sc0_4_result1	Result of the survey: 1st attempt <i>Resultado da pesquisa: primeira tentativa</i> 1 Start of inquiry <i>Início do inquérito</i> 2 Interview declined / not granted <i>Entrevista recusada / não concedida</i> 3 The person being asked is not available <i>Indisponibilidade da pessoa solicitada</i> 4 Requested additional information <i>Solicitou-se informações adicionais</i> 5 Organized a new interview <i>Programou-se uma nova entrevista</i>	*Select only one option <i>*Selecione apenas uma opção</i> *Ask if sc0_2_2 = 1	

sc0_4_result2	Result of the survey: 2nd attempt Resultado da pesquisa: segunda tentativa 1 Start of inquiry Início do inquérito 2 Interview declined / not granted Entrevista recusada / não concedida 3 The person being asked is not available Indisponibilidade da pessoa solicitada 4 Requested additional information Solicitou-se informações adicionais 5 Organized a new interview Programou-se uma nova entrevista	*Select only one option *Selecione apenas uma opção *Ask if sc0_2_2 = 1 and sc0_4_result1 = 5 Faça a pergunta se sc0_2_2 = 1 e sc0_4_result1 = 5	
sc0_4_result3	Result of the survey: 2nd attempt Resultado da pesquisa: segunda tentativa 1 Start of inquiry Início do inquérito 2 Interview declined / not granted Entrevista recusada / não concedida 3 The person being asked is not available Indisponibilidade da pessoa solicitada 4 Requested additional information Solicitou-se informações adicionais 5 Organized a new interview Programou-se uma nova entrevista	*Select only one option *Selecione apenas uma opção *Ask if sc0_2_2 = 1 and sc0_4_result2 = 5 Faça a pergunta se sc0_2_2 = 1 e sc0_4_result2 = 5	

SECTION 1: HOUSEHOLD CHARACTERISTICS

[Transition]: Enumerator: Thank you for agreeing to participate in the survey. To begin, we will ask general questions about you and your household.

Inquiridor: Obrigado por ter aceite participar na pesquisa. Para começar vamos fazer perguntas gerais sobre si e seu agregado familiar .

VARIABLES	HOUSEHOLD CHARACTERISTICS (SOCIO-ECONOMIC PROFILE)	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc1_1_0	You are the representative of: Você é o representante de: 1 Household Agregado familiar 2 An organization Uma organização 3 A company Uma empresa	*Select only one option *Selecione apenas uma opção *Explain: An organization could be larger farms, such as schools and orphanages operating dairy farm Explique: Uma organização pode ser uma farma grande , como escolas e orfanatos que têm explorações leiteiras *Explain: A company refers to a commercially oriented farm enterprise Explique: Uma empresa refere-se a um empreendimento agrícola comercial	
sc1_1_0_1	Please specify name Por favor, especifique o nome	*Ask if sc1_1_0 = 2 OR sc1_1_0 = 3 Faça a pergunta se sc1_1_0 = 2 ou sc1_1_0 = 3	
sc1_1_1	Full name of respondent Nome completo do entrevistado		

sc0_3_5	Contact information (cell phone) Informação de contato (telefone celular)	Enter 10-digit number Digite um número de 10 dígitos	
sc1_1_2	Gender of respondent Sexo do entrevistado 1 Male Masculino 2 Female Feminino	*Select only one option *Selecione apenas uma opção *Do not ask, just enter *Não pergunte, apenas digite	INDICATORS: #7 - #13; #16 - #18;
sc1_1_3	Respondent's age in years idade do entrevistado	*Enter in years *Inserir em anos *Enter -99 if Do not know/refuse to answer age *Digite -99 se não sabe / se recusa a responder a idade	
sc1_1_4	Respondent's relationship to household head Relação do entrevistado com o chefe do agregado familiar 1 Self Próprio 2 Spouse Cônjuge 3 Daughter Filha 4 Son Filho 5 Relative living in the house Parente vivendo na casa 6 Farm labor/employee empregado 7 Other Outro	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1	
sc1_1_4_other	Other, please specify Outro, por favor especifique	*Ask if sc1_1_4 = 7 Faça a pergunta se sc1_1_4 = 7	

sc1_1_5	(Respondent's educational background) Highest level of schooling completed (Escolaridade do entrevistado) Nível mais alto de escolaridade completado 1 Primary of first grade (1st - 5th class) Ensino Primário do Primeiro Grau (1ª a 5ª classe) 2 Primary of the second degree (6th - 7th class) Ensino Primário do Segundo Grau (6ª a 7ª classe) 3 Secondary of the first grade (8th-10th class) Ensino Secundário Geral (8ª-10ª classe) 4 Secondary school (11th-12th class) Ensino Pré-universitário(11ª a 12ª) 5 Technical-Professional Técnico-Profissional 6 University and postgraduate studies Licenciatura e pós-graduação 7 Did not complete any degree Não completou nenhum grau de escolaridade 8 No schooling Sem escolaridade -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Explain: did not complete any degree implies the person went to post-graduate studies/university but did not finish them. *Explique: não completou nenhum grau de escolaridade significa que a pessoa frequentou cursos de graduação/pós-graduação, mas não terminou.	
sc1_2_1	How many people usually live in this household including yourself and any visitors residing for 6 or more months? Quantas pessoas geralmente vivem neste agregado familiar (AF) , incluindo a si mesmo e todos os visitantes cuja estadia é de 6 meses ou mais?	*Ensure that the respondent includes himself/herself and any child who has not yet been registered *Certifique-se que o entrevistado se inclui no número do AF e qualquer criança que ainda não tenha sido registado *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Ask if sc1_1_0 = 1 Faça pergunta se sc1_1_0 = 1	

sc1_3_1	What is the main material of the floor of the residence (excluding kitchen and bathrooms)? Qual é o material principal do chão da residência (excluindo cozinha e casa de banho)? 1 With nothing, or other materials not mentioned below Com nada, ou outros materiais não mencionados abaixo 2 Adobe (matope), wood/parquet, marble/granite, cement, or mosaic/tile Matope, madeira / parquet, mármore / granito, cimento ou mosaico / tijoleira -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1	
sc1_3_2	What is the main material of the walls of the residence? Qual é o principal material das paredes da residência? 1 Cane/sticks/bamboo/palm tree, wood/zinc, tin/ cardboard/paper/ba /shell, other Caniço / estacas / bambu / folhas de palmeira, madeira / zinco, lata / papelão / papel / ba / casca, outros 2 Block of adobe/raw blocks, staked sticks (stick to pike) Tijolo burro queimado/tijolo burro cru, pau (estacas) 3 Block of cement or brick Bloco de cimento ou tijolo -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1	
sc1_3_3	What toilet arrangement does the household use in its residence? Que tipo de casa de banho o agregado familiar usa em sua residência? 1 None or other (facilities not mentioned) Nenhum ou outro (tipo não mencionado) 2 Latrine (of any type) Latrina (de qualquer tipo) 3 Toilet connected to the septic tank WC ligado à fossa séptica	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc1_3_4	What is the main source of energy for lighting in the residence? Qual é a principal fonte de energia para iluminação na residência? 1 Firewood, or batteries lenha ou pilhas 2 LPG, oil/paraffin/kerosene, or candles GLP (petróleo liquefeito), óleo / parafina / querosene ou velas 3 Electricity, generator, or solar panel Eletricidade, gerador ou painel solar 4 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione todos que se aplicarem *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc1_3_4_other	Other, please specify Outro, por favor especifique	*Ask if sc1_3_4 = 4 AND sc1_1_0 = 1 Faça a pergunta se sc1_3_4 = 4 e sc1_1_0 = 1	
sc1_3_5	Does the household have a non-electric or electric clothes iron? O agregado familiar tem um ferro de passar roupa não elétrico ou elétrico? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1	
sc1_3_6	Does the household have a clock (wall, wrist or pocket)? O agregado familiar tem um relógio (parede, pulso ou bolso)? 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc1_3_7	Does the household have a radio, stereo system, or cassette player? O agregado familiar tem um rádio, aparelhagem estéreo ou leitor de cassetes? 1 No Não 2 Radio only apenas rádio 3 Stereo system or cassette player (regardless of radio) Sistema estéreo ou leitor de cassetes (independentemente do rádio) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1	
[Transition] Enumerator: Now we will ask about your household's sources of income. Inquiridor: Agora vamos perguntar sobre as fontes de renda (rendimentos) do seu agregado familiar			
sc1_5_1_0	Does your household currently obtain any income? O seu agregado familiar tem algum rendimento atualmente? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
Household_Income	Which of the following activities does your household obtain income from? De que actividade das que se seguem provem o rendimento doseu agregado familiar ?	*Ask questions sc1_5_1_1 through sc1_6_2_5 if sc1_5_1_0 = 1 Faça as perguntas sc1_5_1_1 até sc1_6_2_5 se sc1_5_1_0 = 1	
sc1_5_1_1	Dairy farming produção de leite (exploração leiteira?). 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc1_5_1_2	Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_3	Crop production produção agrícola 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_4	Fisheries Pescas 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_5	Government employment Emprego na Função Pública 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_6	Private sector employment Emprego no setor privado 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_7	Daily labor Trabalho diário 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_8	Trader/shopkeeper Comerciante / trabalho de loja 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc1_5_1_9	Social support Assistência Social 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_10	Forest products Produtos florestais 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_11	Other Outros 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_5_1_11_other	Other, please specify Outro, por favor especifique	*Ask if sc1_5_1_11 = 1 Faça a pergunta se sc1_5_1_11 = 1	
[Enumerator Instruction] : Now, from the income sources selected, please rank the top 5 on order of importance in income earned [Instrução para o Inquiridor]: Agora, das fontes de renda selecionadas, por favor, classifique as 5 primeiras em ordem de importância no rendimento ganho			
sc1_5_2_1	Which was the most important income source? (1) Qual foi a mais importante fonte de rendimento? (1) 1 Dairy farming Produção de leite 2 Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 3 Crop production Produção agrícola 4 Fisheries Pescas 5 Government employment Emprego na Função Pública	*Select only one option *Selecione apenas uma opção	

	6 Private sector employment Emprego no setor privado 7 Daily labor Trabalho diário 8 Trader/shopkeeper Comerciante / trabalhador de loja 9 Social support Assistência Social 10 Forest products Produtos florestais 11 None of the above Nenhuma das acima 98 Other Outros		
sc1_5_2_2	Which was the second most important income source? (2) Qual foi a segunda fonte de renda mais importante? (2) 1 Dairy farming Produção de leite 2 Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 3 Crop production Produção agrícola 4 Fisheries Pescas 5 Government employment Emprego na Função Pública 6 Private sector employment Emprego no setor privado 7 Daily labor Trabalho diário 8 Trader/shopkeeper Comerciante / trabalhador de loja 9 Social support Assistência Social 10 Forest products Produtos florestais 11 None of the above Nenhuma das acima 98 Other Outros	*Select only one option *Selecione apenas uma opção *Ask if sc1_5_2_1 != 11	
sc1_5_2_3	Which was the third most important income source? (3) Qual foi a terceira fonte de renda mais importante? (3) 1 Dairy farming Produção de leite 2 Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 3 Crop production Produção agrícola 4 Fisheries Pescas 5 Government employment Emprego na Função Pública 6 Private sector employment Emprego no setor privado 7 Daily labor Trabalho diário 8 Trader/shopkeeper Comerciante / trabalhador de loja	*Select only one option *Selecione apenas uma opção *Ask if sc1_5_2_1 != 11 AND sc1_5_2_2 != 11	

	9 Social support Assistência Social 10 Forest products Produtos florestais 11 None of the above Nenhuma das acima 98 Other Outros		
sc1_5_2_4	Which was the fourth most important income source? (4) Qual foi a quarta fonte de renda mais importante? (4) 1 Dairy farming Produção de leite 2 Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 3 Crop production Produção agrícola 4 Fisheries Pescas 5 Government employment Emprego na Função Pública 6 Private sector employment Emprego no setor privado 7 Daily labor Trabalho diário 8 Trader/shopkeeper Comerciante / trabalhador de loja 9 Social support Assistência Social 10 Forest products Produtos florestais 11 None of the above Nenhuma das acima 98 Other Outros	*Select only one option *Selecione apenas uma opção *Ask if sc1_5_2_1 != 11 AND sc1_5_2_2 != 11 AND sc1_5_2_3 != 11 Faça a pergunta se sc1_5_2_1 != 11 e sc1_5_2_2 != 11 e sc1_5_2_3 != 11	
sc1_6_2_5	Which was the fifth most important income source? (5) Qual foi a quinta fonte de renda mais importante? (5) 1 Dairy farming Produção de leite 2 Other livestock/beef fattening, rearing livestock Outros animais / engorda de bovinos, criação de gado 3 Crop production Produção agrícola 4 Fisheries Pescas 5 Government employment Emprego na Função Pública 6 Private sector employment Emprego no setor privado 7 Daily labor Trabalho diário 8 Trader/shopkeeper Comerciante / trabalhador de loja 9 Social support Assistência Social 10 Forest products Produtos florestais 11 None of the above Nenhuma das acima 98 Other Outros	*Select only one option *Selecione apenas uma opção *Ask if sc1_5_2_1 != 11 AND sc1_5_2_2 != 11 AND sc1_5_2_3 != 11 AND sc1_5_2_4 != 11 Faça a pergunta se sc1_5_2_1 != 11 e sc1_5_2_2 != 11 e sc1_5_2_3 != 11 e sc1_5_2_4 != 11	

sc1_6_3	Were there any months in the past twelve months (February 1, 2020 – January 31, 2021), that your family did not have enough to eat? Houve alguns meses nos últimos doze meses (Fevereiro 1, 2020 a Janeiro 31, 2021), que a sua família não teve o suficiente para comer? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc1_6_5	In which months in the past twelve months (February 1, 2020 – January 31, 2021) did your household NOT have enough to eat? Em que meses, nos últimos doze meses (Fevereiro 1, 2020 a Janeiro 31, 2021) o seu agregado familiar NÃO teve o suficiente para comer? 1 February, 2020 Fevereiro 2020 2 March, 2020 Março 2020 3 April, 2020 Abril 2020 4 May, 2020 Maio 2020 5 June, 2020 Junho 2020 6 July, 2020 Julho 2020 7 August, 2020 Agosto 2020 8 September, 2020 Setembro 2020 9 October, 2020 Outubro 2020 10 November, 2020 Novembro 2020 11 December, 2020 Dezembro 2020 12 January, 2021 Janeiro 2021 -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc1_6_3 = 1 Faça a pergunta se sc1_6_3 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc1_6_6	Currently, how many meals do you eat per day? Quantas refeições toma por dia actualmente?	*Ask if sc1_1_0 = 1 Faça a pergunta se sc1_1_0 = 1 *Enter -99 if Do not know/refuse to answer Digite	

		-99 se Não sabe / recusa-se a responder *Explain: Meal is defined as portion of food to satisfy one's appetite *Explique: refeição é definida como uma porção de comida para satisfazer o apetite dum individuo.	

SECTION 2: CURRENT DAIRY PRODUCTION

[Transition]: Enumerator: Great! Now I would like to ask you about your cattle and current dairy production.

Inquiridor: Ótimo! Agora gostaria de perguntar sobre seu gado e a atual produção de leite.

VARIABLES	CURRENT DAIRY PRODUCTION	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc2_1	Do you or anyone in your household currently own, or have you ever owned, any dairy cows? O (a) senhor (a) ou alguém do seu agregado familiar possui atualmente, ou já possuiu vaca leiteiras? 1 Yes, currently Sim, atualmente 2 Currently no, but previously did → Thank respondent and conclude interview. 2 Atualmente não, mas anteriormente tinha → Agradecer o entrevistado e concluir entrevista. 3 Never owned → Thank respondent and conclude interview. Nunca possuiu → Agradecer ao entrevistado e concluir a entrevista. -99 Do not know/refuse to answer → Thank respondent and conclude interview Não sei / recusa a responder → Agradecer ao entrevistado e concluir a entrevista	*Select only one option *Selecione apenas uma opção *Ask if sc0_2_2 = 1 Faça a pergunta se sc0_2_2 = 1	INDICATORS: #1; #2; #7 - #13; #15 - #18; #24
section_2	Section 2: Current Dairy Production Secção 2: Actual Produção de leite	*Ask rest of Section 2 if sc2_1 = 1 AND sc0_2_2 = 1 Faça o resto das perguntas da secção 2 se sc2_1 = 1 e sc0_2_2 = 1	
sc2_2	In what year did you begin dairy farming? Em que ano começou a produção leiteira?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

sc2_3	What was the maximum number of dairy cattle that you have ever owned? Qual foi o máximo número de gado leiteiro que já possuiu?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter number>0 *Insira um número >0	
s2_6_1_2	How many pure breed dairy cows does your household currently have / raise? Quantas vacas leiteiras de raça pura o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_2_2	How many crossbreed cows does your household currently have / raise? Quantas vacas de raça cruzada o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_3_2	How many total cows does your household currently have / raise? Qual é o número total de gado leiteiro o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	INDICATORS: #1; #2; #7-#13; #15-#18; #24
s2_6_1_1	How many pure breed dairy bulls does your household currently have / raise? Quantos touros leiteiros de raça pura o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

		*Enter 0 if not owned *Digite 0 se não possui	
s2_6_2_1	How many crossbreed bulls does your household currently have / raise? Quantos touros de raça cruzada o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_3_1	How many total bulls does your household currently have / raise? Qual é o número total de touros o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_1_4	How many pure breed dairy heifers does your household currently have / raise? Quantas novilhas de raça pura o seu agregado familiar tem / cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_2_4	How many crossbeed heifers does your household currently have / raise? Quantas novilhas de raça cruzada o seu agregado familiar tem / cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_3_4	How many total heifers does your household currently have / raise? Qual é o número total de novilhas que o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

		*Enter 0 if not owned *Digite 0 se não possui	
s2_6_1_7	How many pure breed dairy female calves does your household currently have / raise? <i>Quantas vitelas de raça pura o seu agregado familiar tem / cria actualmente?</i>	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_2_7	How many crossbreed female calves does your household currently have / raise? <i>Quantas vitelas de raça cruzada o seu agregado familiar tem / cria actualmente?</i>	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_3_7	How many total female calves does your household currently have / raise? <i>Qual é o número total de vitelas que o seu agregado familiar tem/cria actualmente?</i>	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_1_8	How many pure dairy breed male calves does your household currently have / raise? <i>Quantos vitelos de raça pura o seu agregado familiar tem / cria actualmente?</i>	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_2_8	How many crossbreed male calves does your household currently have / raise? <i>Quantos vitelos de raça cruzada o seu agregado familiar tem / cria actualmente?</i>	*Enter -99 if Do not know/refuse to answer	

		*Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
s2_6_3_8	How many total male calves does your household currently have / raise? Qual é o número total de vitelos que o seu agregado familiar tem/cria actualmente?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if not owned *Digite 0 se não possui	
	Now please tell me about the cows in your herd – if you have more than 4 cows in your herd, please tell me about only 4 cows of your choice Agora, por favor, fale-me sobre as vacas da sua manada - se tem mais de 4 vacas na sua manada, por favor fale-me apenas sobre 4 vacas de sua escolha. For each cow please answer the following: Para cada vaca, por favor responda o seguinte:	*Ask if s2_6_3_2>0 AND s2_6_3_2<=10, else skip to sc2_10_RECORD	
NOME_DA_VACA\$1 NOME_DA_VACA\$2 NOME_DA_VACA\$3 NOME_DA_VACA\$4	Name or Identification Number Nome ou número de identificação	*Enter -99 if cow does not have a name or identification number *Digite -99 se a vaca não tem nome nem número	
SC2_7_0_RECORD\$1 SC2_7_0_RECORD\$2 SC2_7_0_RECORD\$3 SC2_7_0_RECORD\$4	Do you have a recordbook for this cow? Você tem um livro de registos para esta vaca ? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa-se a responder	*Select only one option Selecione apenas uma opção	

SC2_7_1\$1 SC2_7_1\$2 SC2_7_1\$3 SC2_7_1\$4	Is this cow purebred dairy or crossbred? Esta vaca é de raça pura ou cruzada? 1 Purebred dairy Raça pura 2 Crossbreed Cruzada -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option Selecione apenas uma opção	
SC2_7_2_RECORD\$1 SC2_7_2_RECORD\$2 SC2_7_2_RECORD\$3 SC2_7_2_RECORD\$4	Does the record book have information on the first time the cow gave birth (while she was under your responsibility)? O livro de registos tem informação sobre o primeiro parto que a vaca teve sob sua responsabilidade? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1 *Select only one option Selecione apenas uma opção	
[Enumerator Instruction]: If sc2_7_2_RECORD\$1 – sc2_7_2_RECORD\$4 = 1, then for questions sc2_7_2_MONTH\$1 – sc2_7_2_MONTH\$4 and sc2_7_2_MES\$1 – sc2_7_2_MES\$4 If respondent has a record book with this information fill out from the record book; otherwise, else ask the respondent. For example, if they say « January 1, 2020 », then fill « 1 » for the month ; and « 2020 » for the year [Instrução para o Inquiridor]: Se o entrevistado tiver um livro de registo com esta informação, preencha a partir do livro de registos, caso contrário pergunte ao entrevistado. Por exemplo, se ele diz “1 de Janeiro de 2020”, preencha “1” para o mês e “2020” para o ano.			
sc2_7_2_MONTH\$1 sc2_7_2_MONTH\$2 sc2_7_2_MONTH\$3 sc2_7_2_MONTH\$4	When was the first time she gave birth (while she was under your responsibility)? Please give me the date Quando foi a primeira vez que a vaca pariu (desde que a vaca está na sua responsabilidade), por favor indique a data 1 January Janeiro 2 February Fevereiro 3 March Março 4 April Abril 5 May Maio 6 June Junho 7 July Julho	*Select only one option Selecione apenas uma opção *Ask only the date and fill this out yourself *Pergunte apenas a data e preencha	INDICATOR: #9

	8 August Agosto 9 September Setembro 10 October Outubro 11 November Novembro 12 December Dezembro -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc2_7_2_MES\$1 sc2_7_2_MES\$2 sc2_7_2_MES\$3 sc2_7_2_MES\$4	Year Ano	*Ask only the date and fill this out yourself *Pergunte apenas a data e preencha *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #9
sc2_7_3_RECORD\$1 sc2_7_3_RECORD\$2 sc2_7_3_RECORD\$3 sc2_7_3_RECORD\$4	Does the record book have information on how many times the cow has been pregnant? O livro de registros tem informação sobre quantas vezes a vaca ficou prenha? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1 *Select only one option *Selecione apenas uma opção	
sc2_7_3\$1 sc2_7_3\$2 sc2_7_3\$3 sc2_7_3\$4	How many times has she been pregnant (while under your responsibility)? Quantas vezes a vaca ficou prenha enquanto esteve na sua responsabilidade?	*If SC2_7_3_RECORD\$1 = 1 OR SC2_7_3_RECORD\$2 = 1 OR SC2_7_3_RECORD\$3 = 1 OR SC2_7_3_RECORD\$4 = 1 then fill from record book ; else ask the répondent and fill yourself *Select only one option *Selecione apenas uma opção *Enter -99 if Do not know/refuse to answer *Digite	INDICATOR: #9

		-99 se Não sabe / recusa-se a responder	
sc2_7_4_RECORD\$1 sc2_7_4_RECORD\$2 sc2_7_4_RECORD\$3 sc2_7_4_RECORD\$4	Does the record book have information on when the cow last calved? O livro de registo tem informação sobre quando a vaca teve o último parto 1 Yes Sim 2 No No -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1 *Select only one option *Selecione apenas uma opção	
[Enumerator Instruction] : If sc2_7_4_RECORD\$1 – sc2_7_4_RECORD\$4 = 1, then for questions sc2_7_4_DAY\$1 – sc2_7_4_DAYS\$4, sc2_7_4_MONTH\$1 – sc2_7_4_MONTH\$4 and sc2_7_4_YEAR\$1 – sc2_7_4_YEAR\$4 If respondent has a record book with this information fill out from the record book; otherwise, ask the respondent. For example, if the respondent says « January 1, 2020 » then fill out « 1 » for day, « 1 » for January, and « 2020 » for year [Instrução para o Inquiridor]: Se o entrevistado tem um livro de registo com esta informação, preencha a partir do livro de registo, caso contrário pergunte ao entrevistado. Por exemplo, se ele diz “1 de Janeiro de 2020”, preencha “1” para o dia, “1” para o mês e “2020” para o ano.			
sc2_7_4_DAY\$1 sc2_7_4_DAY\$2 sc2_7_4_DAY\$3 sc2_7_4_DAY\$4	When did she last calve? Quando foi o último parto Day Dia	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter number between 1 – 31 *Insira um número entre 1 - 31	INDICATOR: #8
sc2_7_4_MONTH\$1 sc2_7_4_MONTH\$2 sc2_7_4_MONTH\$13 sc2_7_4_MONTH\$4	Month Mês 1 January Janeiro 2 February Fevereiro 3 March Março 4 April Abril 5 May Maio	*Select only one option *Selecione apenas uma opção	INDICATOR: #8

	6 June Junho 7 July Julho 8 August Agosto 9 September Setembro 10 October Outubro 11 November Novembro 12 December Dezembro -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc2_7_4_YEAR\$1 sc2_7_4_YEAR\$2 sc2_7_4_YEAR\$3 sc2_7_4_YEAR\$4	Year Ano	*Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #8
sc2_58\$1 sc2_58\$2 sc2_58\$3 sc2_58\$4	Is she currently producing milk? A vaca está a produzir leite actualmente? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #8
sc2_58_1_RECORD\$1 sc2_58_1_RECORD\$2 sc2_58_1_RECORD\$3 sc2_58_1_RECORD\$4	Does the record book have information on how much milk she produced yesterday? (morning and evening combined) O livro de registo tem informação sobre quanto leite a vaca produziu ontem ? (juntar as produções da manhã e da tarde) 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1 *Select only one option *Selecione apenas uma opção	
sc2_58_1\$1 sc2_58_1\$2 sc2_58_1\$3 sc2_58_1\$4	How much milk did she produce yesterday (morning and evening combined)? Quanto leite a vaca produziu ontem (juntar a produção da manhã e da tarde)?	*Enter in liters *Insira em litros *Enter -99 if Do not know/refuse to answer *Digite	

		-99 se Não sabe / recusa-se a responder *If sc2_58_1_RECORD\$1 = 1 OR sc2_58_1_RECORD\$2 = 1 OR sc2_58_1_RECORD\$3 = 1 OR sc2_58_1_RECORD\$4 = 1 then fill from record book, else ask respondent and fill out	
sc2_58_2_RECORD\$1 sc2_58_2_RECORD\$2 sc2_58_2_RECORD\$3 sc2_58_2_RECORD\$4	Does the record book have information on how much milk she produced at her peak production (morning and evening) during this lactation? O livro de registro contém informações sobre quanto leite ela produziu no seu pico de produção (manhã e noite) durante esta lactação? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1 *Select only one option *Selecione apenas uma opção	
sc2_58_2\$1 sc2_58_2\$2 sc2_58_2\$3 sc2_58_2\$4	How much milk did she produce at her peak production (morning and evening) during this lactation ? Quanto leite ela produziu no seu pico de produção (manhã e tarde) durante esta lactação?	*Enter in liters *Insira em litros *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *If sc2_58_2_RECORD\$1 = 1 OR sc2_58_2_RECORD\$2 = 1 OR sc2_58_2_RECORD\$3 = 1 OR sc2_58_2_RECORD\$4 = 1 then fill from record book, else ask respondent and fill out	
sc2_5_8_RECORD\$1 sc2_5_8_RECORD\$2	Does the record book have information on when she stopped producing milk? O livro de registro contém	*Ask if sc2_58\$1=2 OR -99 ; sc2_58\$2=2 OR -99 ;	

sc2_5_8_RECORD\$3 sc2_5_8_RECORD\$4	informações sobre quando ela parou (ou secou) de produzir leite? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	sc2_58\$3=2 OR -99 ; sc2_58\$4=2 OR -99 ; *Select only one option *Selecione apenas uma opção	
[Enumerator Instruction]: If sc2_5_8_RECORD\$1 – sc2_5_8_RECORD\$4 = 1, then for questions sc2_5_8_DAY\$1 – sc2_5_8_DAY\$4 ; sc2_5_8_MONTH\$1 – sc2_5_8_MONTH\$4 ; and sc2_5_8_YEAR\$1 – sc2_5_8_YEAR\$4 If respondent has a record book with this information fill out from the record book; otherwise, ask the respondent. For example, if they say « January 1, 2020 », fill out « 1 » for day ; « 1 » for month ; and « 2020 » for year. [Instrução para o Inquiridor]: Se o entrevistado tem um livro de registo com esta informação, preencha a partir do livro de registo, caso contrário pergunte ao entrevistado. Por exemplo, se ele diz “1 de Janeiro de 2020”, preencha “1” para o dia, “1” para o mês e “2020” para o ano.			
sc2_5_8_DAY\$1 sc2_5_8_DAY\$2 sc2_5_8_DAY\$3 sc2_5_8_DAY\$4	When did she stop producing milk? Quando é que a vaca parou (secou) de produzir leite? Day Dia	*Ask if sc2_58\$1 = 2 OR sc2_58\$2 = 2 OR sc2_58\$3 = 2 OR sc2_58\$4 = 2 *Enter number between 1 – 31 *Insira um número entre 1 - 31 *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #8
sc2_5_8_MONTH\$1 sc2_5_8_MONTH\$2 sc2_5_8_MONTH\$3 sc2_5_8_MONTH\$4	Month Mês 1 January Janeiro 2 February Fevereiro 3 March Março 4 April Abril 5 May Maio 6 June Junho	*Ask if sc2_58\$1 = 2 OR sc2_58\$2 = 2 OR sc2_58\$3 = 2 OR sc2_58\$4 = 2	INDICATOR: #8

	7 July Julho 8 August Agosto 9 September Setembro 10 October Outubro 11 November Novembro 12 December Dezembro -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc2_5_8_YEAR\$1 sc2_5_8_YEAR\$2 sc2_5_8_YEAR\$3 sc2_5_8_YEAR\$4	Year Ano	*Ask if sc2_58\$1 = 2 OR sc2_58\$2 = 2 OR sc2_58\$3 = 2 OR sc2_58\$4 = 2 *Enter -99 if Do not know/refuse to answer * Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #8
[Enumerator Instruction]: For producers with 10 or more cows ask the following questions [Instrução para o Inquiridor]: Para os produtores com 10 ou mais vacas, faça as seguintes questões			
sc2_10_RECORD	Do you have a recordbook for your cows? O (a) senhor (a) tem um livro de registo para as suas vacas? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if s2_6_3_2>10 *Select only one option *Selecione apenas uma opção	
sc2_10_1_RECORD	Does the record book have information on the typical lactation period in the last 12 months (February 1, 2020 – January 31, 2021)? O livro de registo contém informações sobre o período típico de lactação nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)? 1 Yes Sim	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	

	2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc2_10_1	On average, what was the typical lactation period for your cows in the last 12 months (February 1, 2020 – January 31, 2021)? Em média, qual foi o período típico de lactação para suas vacas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)?	*Ask if s2_6_3_2>10 *If sc2_10_RECORD_1 = 1 then enter from record book ; else aks respondent and fill out *Preencha do livro de registo ou se não pergunte *Enter in days *Insira em dias *Enter 0 if no cow produces milk *Digite 0 se nenhuma vaca produz leite *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	
Sc2_10_2_RECORD	Does the record book have information on the minimum lactation period for your cows in the last 12 months (February 1, 2020 – January 31, 2021)? O livro de registo contém informações sobre o período de lactação mínimo das suas vacas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	
Sc2_10_2	What is the minimum lactation period for your cows in the last 12 months (February 1, 2020 – January 31, 2021)? Qual é o período de lactação mínimo das suas vacas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)?	*Ask if s2_6_3_2>10 *Enter in days *Insira em dias *Enter 0 if no cow produces milk *Digite 0 se nenhuma vaca produz leite	

		*Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	
Sc2_10_3_RECORD	Does the record book have information on the maximum lactation period for your cows in the last 12 months (February 1, 2020 – January 31, 2021)? O livro de registo contém informações sobre o período de lactação máximo das suas vacas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	
Sc2_10_3	What is the maximum lactation period for your cows in the last 12 months (February 1, 2020 – January 31, 2021)? Qual é o período máximo de lactação das suas vacas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021)?	*Ask if s2_6_3_2>10 *Enter in days *Insira em dias *Enter 0 if no cow produces milk *Digite 0 se nenhuma vaca produz leite *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	
Sc2_11_1_RECORD	Does the record book have information on in the last 12 months (February 1, 2020 – January 31, 2021), how many days passed between calves for your cows? (i.e. what is the calving interval?) O livro de registos contém informações dos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), sobre quantos dias se	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	

	passaram entre os nascimentos de vitelos de suas vacas? (ou seja, qual é o intervalo entre partos?) 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc2_11_1	On average, in the last 12 months (February 1, 2020 – January 31, 2021), how many days pass between calves for your cows? (i.e. what is the calving interval?) Em média, nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), quantos dias se passam entre os nascimentos de vitelos das suas vacas? (ou seja, qual é o intervalo entre partos?)	*Ask if s2_6_3_2>10 *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	
Sc2_11_2_RECORD	Does the record book have information on in the last 12 months (February 1, 2020 – January 31, 2021), what is the minimum number of days that passed between calves for your cows? (i.e. what is the minimum calving interval?) O livro de registro contém informações nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), sobre qual é o número mínimo de dias entre os nascimentos de vitelos de suas vacas? (ou seja, qual é o menor intervalo entre partos?) 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	
sc2_11_2	In the last 12 months (February 1, 2020 – January 31, 2021), what is the minimum number of days that passed between calves for your cows? (i.e. what is the minimum calving interval?) Nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), qual é o número mínimo de	*Ask if s2_6_3_2>10 *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	

	dias que passaram entre os nascimentos de vitelos de suas vacas? (ou seja, qual é o menor intervalo entre partos?)		
Sc2_11_3_RECORD	Does the record book have information on in the last 12 months (February 1, 2020 – January 31, 2021), what is the maximum number of days that passed between calves for your cows? (i.e. what is the maximum calving interval?) O livro de registo contém informações nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), sobre qual é o número máximo de dias que passaram entre os nascimentos de vitelos de suas vacas? (ou seja, qual é o maior intervalo entre partos?) 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if s2_6_3_2>10 and sc2_10_RECORD=1 *Select only one option *Selecione apenas uma opção	
sc2_11_3	In the last 12 months (February 1, 2020 – January 31, 2021), what is the maximum number of days that passed between calves for your cows? (i.e. what is the maximum calving interval?) Nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro 2021), qual é o número máximo de dias que passaram entre os nascimentos de vitelos de suas vacas? (ou seja, qual é o máximo intervalo entre partos?)	*Ask if s2_6_3_2>10 *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	

SECTION 3: PRODUCTION, DISPOSITION AND REVENUE

[Transition]: Enumerator: Now I have a few questions about the production of milk, and how you use it. It may be that it will be easier to answer these questions by referring to your book of records.

Inquiridor: Agora temos algumas perguntas acerca da produção de leite e a sua utilização. Seria mais fácil responder a estas questões com base nas informações do seu livro de registo.

VARIABLES	PRODUCTION, DISPOSITION AND REVENUE	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc7_04	Do you keep a record of daily milk production? O (a) senhor (a) faz registos da produção diária de leite? 1 Yes Sim 2 No No	*Select only one option *Selecione apenas uma opção *If they say yes, confirm from inspecting the record book *Se disserem sim, confirm inspecionando o livro de registo	INDICATOR: #12
sc7_05	Do you keep a record of how you allocate milk to different sources? Mantem registos sobre como aloca o leite para diferentes propósitos? 1 Yes Sim 2 No No	*Select only one option *Selecione apenas uma opção *If they say yes, confirm from inspecting the record book *Se disserem sim, confirm inspecionando o livro de registos	INDICATOR: #12
sc7_06	Do you keep a record of farm transactions (expenses and receipts)? Mantém registos das transações na farma (despesas e receitas) 1 Yes Sim 2 No No	*Select only one option *Selecione apenas uma opção *If they say yes, confirm from inspecting the record book *Se disserem sim, confirm inspecionando o livro de registos	INDICATOR: #12

sc7_07	Do you keep a record of registration of animal health visits? Tem registado o cadastro das visitas dos técnicos de saúde animal? 1 Yes Sim 2 No No	*Select only one option *Selecione apenas uma opção *If they say yes, confirm from inspecting the record book *Se disserem sim, confirm inspecionando o livro de registros	INDICATOR: #12
Sc7_08	Do you keep a record of dairy sales? Tem feito registros das vendas diárias? 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção *If they say yes, confirm from inspecting the record book *Se disserem sim, confirm inspecionando o livro de registros	INDICATOR: #12
[Transition]: Enumerator: Now think only about the production and sales of milk YESTERDAY. To the extent possible fill out sc7_2_1_1 - sc7_4_7_2 using the record book. If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as 'Do not know' before asking the respondent the question. Inquiridor: Agora pense apenas na produção e vendas de leite de ONTEM. Tanto quanto possível preencha sc7_2_1_1 e sc7_4_7_2 usando o livro de registro. Se o livro não tiver esta informação, peça ao entrevistado para lembrar ou estimar a informação. Não deixe a resposta em branco ou codificado como "Não sabe" antes de colocar a questão ao entrevistado.			
sc7_2_1_1	How many cows were producing milk yesterday? Quantas vacas produziram leite ontem?	*Enter "0" if no cows were producing milk yesterday *Digite 0 se nenhuma vaca produziu leite ontem *Enter -99 if Do not know/refuse to answer Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #7
Sc7_2_1_2	Does the record book have information on the total volume of milk produced yesterday by all of your cows? O livro de registro	*Select only one option *Selecione apenas uma opção	

	contém informações sobre o volume total de leite produzido ontem por todas as suas vacas? 1 Yes Sim 2 No No -99 Do not know/refuse to answer 99 não sabe / se recusa a responder	*Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1	
sc7_2_1_3	How much total milk did your cows produce yesterday (both morning and evening milking)? Think about the total milk produced by all of your cows. Qual foi a quantidade total de leite produzido pelas suas vacas, ontem (tanto de manhã como a tarde)? Pense no leite total produzido por todas as suas vacas.	*Ask if sc7_2_1_1>0 *Enter in liters *Insira em litros *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *If sc7_3_2_1_RECORD = 1, then fill from record book; else ask the respondents and fill out *Preencha do livro de registros ou se não pergunte	INDICATOR: #7
	How did you distribute the milk collected yesterday for different uses? Como distribuiu o leite coletado ontem para diferentes usos?		
sc7_2_1_4	Consumption at home - yesterday (liters) Consumo em casa- ontem (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_2_1_5	Milk given to the offspring – yesterday (liters) Leite dado aos vitelos ontem (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_2_1_6	Milk sold to milk collection center / cooperative - yesterday (liters) Leite vendido para centro de recolha de leite / cooperativa - ontem (litros)	*Enter -99 if Do not know/refuse to answer	INDICATORS: #1; #2

		*Digite -99 se Não sabe / recusa-se a responder	
sc7_2_1_7	Milk sold to milk collection center/ cooperative - What was the price per liter of milk you received yesterday? Leite vendido para centro de recolha de leite / cooperativa - Qual foi o preço por litro de leite que você recebeu ontem?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATORS: #1, #2
sc7_2_1_8	Which cooperative did you sell the milk produced yesterday? Please specify the name. A que cooperativa você vendeu o leite produzido ontem? Por favor, especifique o nome	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *If sold to multiple cooperatives, enter most important one *Se vendeu para várias cooperativas, insira a mais importante	
sc7_2_1_9	Milk sold to processors - yesterday (liters) Quantos litros de Leite vendeu ontem aos processadores (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_2_1_10	Milk sold to processors - What price did you receive per liter of milk you sold yesterday? Leite vendido para processadores - Qual o preço que você recebeu por litro de leite que vendeu ontem?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATOR: #1
sc7_2_1_11	Which processor did you sell the milk produced yesterday? Please specify the name. A que processador vendeu o leite produzido ontem? Por favor, especifique o nome.	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

		*If sold to multiple processors, enter most important one. Se vendeu para vários processadores, insira a mais importante.	
sc7_2_1_12	Milk sold locally (neighbors, occasional buyers, etc.) – yesterday - (liters) Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - ontem - (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_2_1_13	Milk sold locally (neighbors, occasional buyers, etc.) – What was the average price you received per liter of milk yesterday? Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - Qual foi o preço médio que você recebeu por litro de leite ontem?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATOR: #1
sc7_2_1_14	Milk lost (waste, etc.) - yesterday (liters) Leite perdido (desperdício, etc.) - ontem (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_2_1_15	Other (Specify) Outro especifique	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1
sc7_2_1_16	Other – yesterday (liters) Outro - ontem (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2

sc7_2_1_17	Other - What was the per liter value of milk you received yesterday? Outros - Qual foi o valor por litro de leite que você recebeu ontem?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATOR: #1
sc7_2_1_18	Total - yesterday (liters) Total - ontem (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1
[Transition]: Enumerator: Now think about ALL the milk produced and sold in the last dry season (May through October 2020). If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as 'Do not know' before asking the respondent the question. Inquiridor: Agora pense acerca de todo o leite produzido e vendido na última época seca (Maio a Outubro de 2020). Se o livro não tiver esta informação, peça ao entrevistado para lembrar ou estimar a informação. Não deixe a resposta em branco ou codificado como "Não sabe" antes de colocar a questão ao entrevistado.			
Sc7_3_1_1	On average, how many cows were producing milk on a daily basis in the last dry season (May through October 2020)? Em média, quantas vacas estavam a produzir leite diariamente na última estação seca (Maio a Outubro de 2020)?	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
Sc7_3_1_2	Does the record book have information on the total volume of milk produced on a daily basis in the last dry season (May through October 2020)? O livro de registo contém informações sobre o volume total de leite produzido diariamente na última estação seca (Maio a Outubro de 2020)? 1 Yes Sim 2 No não -99 Do not know/refuse to answer não sabe / se recusa a responder	*Select only one option *Selecione apenas uma opção *Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1	

sc7_3_1_3	On average, how much total milk did your cows produce on a daily basis in the last dry season (May through October 2020). Think about the total milk produced by all cows on a daily basis in the last dry season? Em média, qual foi a quantidade total de leite produzido pelas suas vacas diariamente na última estação seca (Maio a Outubro de 2020)? Pense no leite total produzido por todas as vacas diariamente na última estação seca.	*Enter in liters *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #7
	How did you distribute the milk collected at different times for different uses in the last dry season (May through October 2020)? Como distribuiu o leite coletado em diferentes momentos para diferentes usos na última estação seca (Maio a Outubro de 2020)?		
sc7_3_1_4	Consumption at home - Dry season (May through October 2020) (liters) Consumo em casa - Estação seca (Maio a Outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_3_1_5	Milk given to the offspring - Dry season (May through October 2020) (liters) Leite dado aos vitelos - Estação seca (maio a outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_3_1_6	Milk sold to milk collection center / cooperative - Dry season (May through October 2020) (liters) Leite vendido para centro de recolha de leite / cooperativa - Estação seca (maio a outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
Sc7_3_1_7	Milk sold to milk collection center/ cooperative - What was the average price per liter of milk you received in the dry season (May through October 2020)? Leite vendido para centro de recolha de leite / cooperativa - Qual foi o preço médio por litro de leite que você recebeu na estação seca (maio a outubro de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical	INDICATORS: #1, #2

sc7_3_1_8	Which cooperative did you sell the milk produced in the last dry season (May through October 2020)? Please specify the name. <i>A que cooperativa vendeu o leite produzido na última estação seca (maio a outubro de 2020)? Por favor, especifique o nome.</i>	*Enter -99 if do not know/refuse to answer <i>*Digite -99 se Não sabe / recusa-se a responder</i> *If sold to multiple cooperatives, enter most important one <i>*Se vendeu para várias cooperativas, insira a mais importante</i>	
sc7_3_1_9	Milk sold to processors - Dry season (May through October 2020) (liters) <i>Leite vendido para processadores - Estação seca (maio a outubro de 2020) (litros)</i>	*Enter -99 if Do not know/refuse to answer <i>*Digite -99 se Não sabe / recusa-se a responder</i>	INDICATORS: #1; #2
sc7_3_1_10	Milk sold to processors - What price did you receive per liter of milk you sold in the dry season (May through October 2020)? <i>Leite vendido a processadores – qual foi o preço que recebeu por litro de leite que vendeu na estação seca (maio a outubro de 2020)?</i>	*Enter -99 if Do not know/refuse to answer <i>*Digite -99 se Não sabe / recusa-se a responder</i> *Enter in Metical	INDICATOR: #1
sc7_3_1_11	Which processor did you sell the milk produced in the last dry season (May through October 2020)? Please specify the name. <i>Para que processador vendeu o leite produzido na última estação seca (maio a outubro de 2020)? Por favor especifique o nome</i>	*Enter -99 if do not know/refuse to answer <i>*Digite -99 se Não sabe / recusa-se a responder</i> *If sold to multiple processors, enter most important one <i>*Se vendeu para vários processadores, insira a mais importante</i>	
sc7_3_1_12	Milk sold locally (neighbors, occasional buyers, etc.) - Dry season (May through October 2020) (liters) <i>Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - Estação seca (maio a outubro de 2020) (litros)</i>	*Enter -99 if Do not know/refuse to answer <i>*Digite -99 se Não sabe / recusa-se a responder</i>	INDICATORS: #1; #2

sc7_3_1_13	Milk sold locally (neighbors, occasional buyers, etc.) – What was the average price you received per liter of milk in the last dry season (May through October 2020)? Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - Qual foi o preço médio que recebeu por litro de leite na última estação seca (maio a outubro de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATOR: #1
sc7_3_1_14	Milk lost (waste, etc.) - Dry season (May through October 2020) (liters) Leite perdido (desperdício, etc.) - Estação seca (maio a outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_3_1_15	Other (Specify) Outro (especifique)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1
sc7_3_1_16	Other - Dry season (May through October 2020) (liters) Outros - Estação seca (maio a outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_3_1_17	Other - What was the per liter value of milk in the last dry season (May through October 2020)? Outros - Qual foi o preço por litro de leite na última estação seca (maio a outubro de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical *Insira em Meticais	INDICATOR: #1
sc7_3_1_18	Total - Dry season in the last 12 months (May through October 2020) (liters) Total - Estação seca nos últimos 12 meses (maio a outubro de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1

[Transition]: Enumerator: Now think about ALL the milk produced and sold in the last rainy season (November 2019 through April 2020). If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as 'Do not know' before asking the respondent the question.

Inquiridor: Agora pense acerca de todo o leite produzido e vendido na última época chuvosa (Novembro 2019 a Abril de 2020). Se o livro de registo não tiver esta informação, peça ao entrevistado para lembrar ou estimar a informação. Não deixe a resposta em branco ou codificado como "Não sabe" antes de colocar a questão ao entrevistado.

Sc7_4_1_1	On average, how many cows were producing milk on a daily basis in the last rainy season (November 2019 through April 2020)? Em média, quantas vacas estavam a produzir leite diariamente na última estação chuvosa (novembro de 2019 a Abril de 2020)?	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
Sc7_4_1_2	Does the record book have information on the total volume of milk produced on a daily basis in the last rainy season (November 2019 through April 2020)? O livro de registo contém informações sobre o volume total de leite produzido diariamente na última estação chuvosa (Novembro, 2019 a Abril de 2020)? 1 Yes Sim 2 No não -99 Do not know/refuse to answer não sabe / se recusa a responder	*Select only one option *Selecione apenas uma opção *Ask if SC2_7_0_RECORD\$1 = 1 OR SC2_7_0_RECORD\$2 = 1 OR SC2_7_0_RECORD\$3 = 1 OR SC2_7_0_RECORD\$4 = 1	
sc7_4_1_3	On average, how much milk did your cows produce on a daily basis in the last rainy season (November 2019 to April 2020) (liters). Think about the total milk produced by all cows on a daily basis in the last rainy season. Em média, quanto leite suas vacas produziram diariamente na última estação chuvosa (Novembro de 2019 a Abril de 2020) (litros). Pense no leite total produzido por todas as vacas diariamente na última estação chuvosa.	*Enter in liters *Insira em litros *Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #7
	How did you distribute the milk collected at different times for different uses in the last rainy season (November 2019 through April 2020)? Como distribuiu o leite coletado em diferentes momentos para diferentes usos na última estação chuvosa (Novembro de 2019 a Abril de 2020)?		

sc7_4_1_4	Consumption at home - Rainy season (November 2019 through April 2020) (liters) Consumo em casa - estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_4_1_5	Milk given to the offspring - Rainy season (november to april) (liters) Leite dado aos vitelos - Estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc7_4_1_6	Milk sold to milk collection center/ cooperative - Rainy season (November 2019 through April 2020) (liters) Leite vendido para centro de recolha de leite / cooperativa - Estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_4_1_7	Milk sold to milk collection center/ cooperative - What was the average price per liter of milk you received in the rainy season (November 2019 through April 2020)? Leite vendido para centro de recolha de leite / cooperativa - qual foi o preço médio por litro de leite que recebeu na estação chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical	INDICATORS: #1, #2
sc7_4_1_8	Which cooperative did you sell the milk produced in the last rainy season (November 2019 through April 2020)? Please specify the name. Para que cooperativa vendeu o leite produzido na última estação chuvosa (Novembro de 2019 a Abril de 2020)? Por favor, especifique o nome.	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *If sold to multiple cooperatives, enter most important one *Se vendeu para várias cooperativas, insira a mais importante	
sc7_4_1_9	Milk sold to processors - Rainy season (November to April) (liters) Leite vendido para processadores - Estação chuvosa (Novembro 2019 a Abril 2020) (litros)	*Enter -99 if Do not know/refuse to answer	INDICATORS: #1; #2

		*Digite -99 se Não sabe / recusa-se a responder	
sc7_4_1_10	Milk sold to processors - What price did you receive per liter of milk you sold in the rainy season (November 2019 through April 2020)? Leite vendido para processadores - Que preço recebeu por litro de leite que vendeu na estação chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical	INDICATOR: #1
sc7_4_1_11	Which processor did you sell the milk produced in the last rainy season (November 2019 through April 2020)? Please specify the name. Para que processador você vendeu o leite produzido na última estação chuvosa (Novembro de 2019 a Abril de 2020)? Por favor, especifique o nome.	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *If sold to multiple processors, enter most important one *Se vendeu para vários processadores, insira a mais importante	
sc7_4_1_12	Milk sold locally (neighbors, occasional buyers, etc.) - Rainy season (November 2019 through April 2020) (liters) Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - Estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_4_1_13	Milk sold locally (neighbors, occasional buyers, etc.) – What was the average price you received per liter of milk in the last rainy season (November 2019 through April 2020)? Leite vendido localmente (vizinhos, compradores ocasionais, etc.) - Qual foi o preço médio que você recebeu por litro de leite na última estação chuvosa (novembro de 2019 a abril de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical	INDICATOR: #1
sc7_4_1_14	Milk lost (waste, etc.) - Rainy season (November 2019 through April 2020) (liters) Leite perdido (desperdícios, etc.) - Estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

sc7_4_1_15	Other (Specify) Outro (especifique)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1
sc7_4_1_16	Other - Rainy season (November 2019 through April 2020) (liters) Outros - estação chuvosa (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATORS: #1; #2
sc7_4_1_17	Other - What was the per liter value of milk in the rainy season (November 2019 through April 2020)? Outros - Qual foi o valor por litro de leite na estação chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in Metical	INDICATOR: #1
sc7_4_1_18	Total - Rainy season in the last 12 months (November 2019 through April 2020) (liters) Total - estação chuvosa nos últimos 12 meses (Novembro de 2019 a Abril de 2020) (litros)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1
[Transition]: Enumerator: Now I would like to ask about the quality of milk you sell Inquiridor: Agora gostaria de perguntar acerca da qualidade do leite que vende			
sc7_11	Have you ever had milk refused by a buyer in the past twelve months (February 1, 2020 – January 31, 2021)? O (a) senhor (a) já teve leite rejeitado por um comprador nos últimos doze meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção	
sc7_12	How many times has the milk been refused in the past 12 months between February 1, 2020 – January 31, 2021? Quantas vezes o leite foi rejeitado nos últimos 12 meses entre 1 de Fevereiro de 2020 a 31 de Janeiro de 2021?	*Ask if sc7_11 = 1 *Enter -99 if Do not know/refuse to answer	

		*Digite -99 se Não sabe / recusa-se a responder	
sc7_13_#	What were the reasons for milk rejection? Quais foram as razões para a rejeição do leite?	*Ask if sc7_11 = 1	
sc7_13_1	Mastitis Mastite 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Ask if sc7_11 = 1 *Select only one option *Selecione apenas uma opção	
sc7_13_2	Milk had been boiled Leite foi fervido 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Ask if sc7_11 = 1 *Select only one option *Selecione apenas uma opção	
sc7_13_31	Water was added to milk Água foi adicionada ao leite 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Ask if sc7_11 = 1 *Select only one option *Selecione apenas uma opção	
sc7_13_3	Other Outros 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Ask if sc7_11 = 1 *Select only one option *Selecione apenas uma opção	
sc7_13_3_OTHER	Other, please specify Outro (por favor, especifique)	*Ask if sc7_13_3 = 1	

SECTION 4A: EFFECTS OF COVID-19

[Transition]: Enumerator: Thank you for your responses thus far. Now, we would like to learn about the effects on your dairy farm production due to COVID-19. We will ask about how it has influenced your cattle, dairy production, and sales.

Inquiridor: Muito obrigado pelas suas respostas até aqui. Agora gostaríamos de compreender acerca dos efeitos do COVID-19 na sua farma de produção de leite. Iremos perguntar como isso influenciou o seu gado, a produção de leite e as vendas.

VARIABLES	EFFECTS OF COVID-19	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc9a_1	Have you experienced any impacts on your dairy business related to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? O seu negócio de produção de leite enfrentou algum impacto relacionado com o COVID-19 nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Enumerator: Explain that they should only focus on impacts due to the COVID-19 to the extent possible, and not on impacts due to Cyclone Idai, Cyclone Eloise, or military hostilities. *Inquiridor: Explique que eles devem focar apenas nos impactos devidos ao COVID-19, tanto quanto possível, e não nos impactos devidos ao Ciclone Idai, Ciclone Eloise ou hostilidades militares.	
sc9a_2	Were any of the following aspects of your dairy business impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Algum dos seguintes itens do seu negócio de leite foram afectados pelo COVID-19 nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Dairy infrastructure Infraestrutura leiteira 2 Access to feed supplies Acesso a provisão de rações 3 Transportation of products to buyers Transporte de produtos para os compradores	*Select all that apply *Selecione tudo que se aplica *Read list for respondent *Leia a lista para o entrevistado *Ask if sc9a_1=1 *Enumerator: Explain that they should only focus on impacts due to the COVID-19 to the extent possible, and not on impacts due to Cyclone Idai, Cyclone Eloise, or military hostilities. *Inquiridor: Explique que	

	4 Animal Health / Access to veterinary services Sanidade animal/ acesso aos serviços de veterinária 5 Communication or visits from dairy business input vendors Comunicação ou visitas de vendedores de insumos para o negócio do leite 6 Communication or visits from dairy buyers Comunicação ou visitas de compradores de produtos lácteos 7 Communication or visits from MERCADO project staff Comunicação ou visitas de pessoal do projecto MERCADO 8 Access to formal credit and/or financial services Acesso ao crédito formal e/ou serviços financeiros 9 Access to local VSLA credit Acesso aos serviços de poupança e empréstimo locais 10 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa responder	eles devem focar apenas nos impactos devidos ao COVID-19, tanto quanto possível, e não nos impactos devidos ao Ciclone Idai, Ciclone Eloise ou hostilidades militares. *If “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Não sabe”, não pode seleccionar outra opção	
sc9a_3	How has your access to dairy inputs changed as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o seu acesso aos insumos para a produção de leite como resultado do COVID-19 nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to access inputs Mais difícil obter insumos 2 Same/no effect Mesmo / nenhum efeito 3 Easier to access inputs Mais fácil de obter insumos -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Ask if sc9a_1=1	
sc9a_4	How did your cow’s milk production per day change as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como variou a produção de leite de suas vacas por dia, como resultado do COVID-19	*Select only one option *Selecione apenas uma opção *Ask if sc9a_1=1	

	nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Production per day decreased produção por dia diminuiu 2 Production per day remained same/no effect Produção por dia permaneceu igual / sem efeito 3 Production per day increased Produção por dia aumentou -99 Do not know/refuse to answer Não sabe / recusa se a responder		
sc9a_4_1	By how many liters did the milk production change per day, per cow, on average? _____ Por quantos litros a produção de leite por vaca variou por dia, em média nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc9_4a = 1 or sc9_4a = 3 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc9a_5	How has your ability to sell your milk changed as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que a sua capacidade de vender seu leite mudou como resultado do COVID-19 nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to sell Mais difícil de vender 2 Same/No effect Mesmo / Nenhum efeito 3 Easier to sell Mais fácil de vender	*Select only one option *Selecione apenas uma opção *Ask if sc9a_1=1	
sc9a_6	How has the average price of milk obtained from selling milk changed as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço médio obtido da venda de leite alterou como resultado do COVID-19 nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Average sale price is lower Preço médio de venda é menor 2 Average sale price is same/No effect O preço médio de venda é o mesmo / nenhum efeito	*Select only one option *Selecione apenas uma opção *Ask if sc9a_1=1	

	3 Average sale price is higher Preço médio de venda é maior		
sc9a_6_1	By how much did the average price change per liter of milk, on average? _____ Por quanto o preço médio por litro de leite alterou, em média?	*Ask if sc9a_6=1 OR sc9a_6=3 *Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc9a_7	How has COVID-19 influenced your household's ability to access adequate food in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como o COVID-19 influenciou a capacidade de sua família de ter acesso a comida adequada, nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Lowered access to or availability of food Acesso reduzido ou disponibilidade reduzida de alimentos 2 No effect on access to or availability of food Nenhum efeito no acesso ou na disponibilidade de alimentos 3 Increased access to or availability of food Maior acesso ou disponibilidade de alimentos -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc9a_1=1	

SECTION 4B: EFFECTS OF CYCLONE IDAI

[Transition]: Enumerator: Thank you for your responses thus far. Now, we would like to learn about the effects on your dairy farm production due to Cyclone Idai. We will ask about how it has influenced your cattle, dairy production, and sales.

Inquiridor: Muito obrigado pelas suas respostas até aqui. Agora gostaríamos de compreender acerca dos efeitos do Ciclone IDAI na sua farma de produção de leite. Iremos perguntar como isso influenciou o seu gado, a produção de leite e as vendas.

VARIABLES	EFFECTS OF CYCLONE IDAI	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc9b_1	Have you experienced any lingering effects of Cyclone Idai on your dairy business in the last 12 months (February 1, 2020 – January 31, 2021)? O seu negócio de produção de leite enfrentou alguns efeitos remanescentes do Ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Enumerator: Explain that they should only focus on impacts due to Cyclone Idai in the last 12 months and not before that. Additionally, ask them, to the extent possible, only focus on lingering impacts of Cyclone Idai and not on impacts due to COVID-19, Cyclone Eloise, or military hostilities. * Inquiridor: Explique que eles devem focar apenas nos impactos devido ao Ciclone IDAI nos últimos 12 meses e não antes disso. Além disso, peça-lhes que, tanto quanto possível, foquem apenas nos impactos remanescentes do Ciclone Idai e não nos impactos devidos ao COVID-19, Ciclone Eloise ou hostilidades militares.	
sc9b_2	Did you lose any dairy cattle due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? O (a) senhor (a) perdeu algum gado leiteiro devido ao Ciclone	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	

	Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Enumerator: Explain that they should only focus on impacts due to Cyclone Idai in the last 12 months and not before that. Additionally, ask them, to the extent possible, only focus on lingering impacts of Cyclone Idai and not on impacts due to COVID-19, Cyclone Eloise, or military hostilities. * Inquiridor: Explique que eles devem focar apenas nos impactos devido ao Ciclone IDAI nos últimos 12 meses e não antes disso. Além disso, peça-lhes que, tanto quanto possível, foquem apenas nos impactos remanescentes do Ciclone Idai e não nos impactos devidos ao COVID-19, Ciclone Eloise ou hostilidades militares.	
sc9b_3\$1 sc9b_3\$2 sc9b_3\$3 sc9b_3\$4 sc9b_3\$5	How many dairy cattle did you lose due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas cabeças de gado leiteiro perdeu devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? Bulls _____ Touros _____ Cows _____ Vacas _____ Heifers _____ Novilhas _____ Female calves _____ Vitelas (fêmeas) _____ Male calves _____ Vitelos (machos) _____	*Ask if sc9b_2 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if cattle type not lost *Digite 0 se não perdeu gado	
sc9b_4	Did any of your dairy cattle succumb to disease after Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Algum do seu gado leiteiro sucumbiu à doença depois do Cyclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	

	1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa se a responder		
sc9b_4_1\$1 sc9b_4_1\$2 sc9b_4_1\$3 sc9b_4_1\$4 sc9b_4_1\$5	How many dairy cattle were affected by disease due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos bovinos leiteiros foram afetados por doença devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? Bulls _____ Touros _____ Cows _____ Vacas _____ Heifers _____ Novilhas _____ Female calves _____ Vitelas (femeas) _____ Male calves _____ Vitelos (machos) _____	*Ask if sc9b_4 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter 0 if cattle type not affected by disease *Digite 0 se o gado não foi afectada pela doença	
sc9b_4_2	Which diseases have your dairy cattle been affected by due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Que doenças afetaram o seu gado leiteiro devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Foot and mouth disease Febre aftosa 2 Mastitis Mastite 3 Lumpy skin disease Dermatose nodular 4 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select all that apply *Selecione tudo que se aplica *Ask if sc9b_4 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc9b_5	How did your cow’s milk production per day change as a result of Cyclone Idai, in the last 12 months (February 1, 2020 – January 31, 2021)? Como variou a produção de leite de suas vacas por dia, como resultado do ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Production per day decreased produção por dia diminuiu	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	

	2 Production per day remained same/no effect Produção por dia permaneceu igual / sem efeito 3 Production per day increased Produção por dia aumentou -99 Do not know/refuse to answer Não sabe / recusa se a responder		
sc9b_5_1	By how many liters did the milk production change per day, per cow, on average in the last 12 months (February 1, 2020 – January 31, 2021)? _____ Por quantos litros a produção de leite por vaca variou por dia, em média nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc9b_5 = 1 or sc9b_5 = 3 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc9b_6	Were any of the following items of your dairy business impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Algum dos seguintes itens do seu negócio de leite foram afectados pelo ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Dairy infrastructure Infraestrutura leiteira 2 Feed supplies Fornecimento de rações 3 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa se responder	*Select all that apply *Selecione tudo que se aplica *Read list for respondent *Leia a lista para o entrevistado * Ask if sc9b_1 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Não sabe”, não pode seleccionar outra opção	
sc9b_6_1	What dairy infrastructure was impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Que infraestrutura leiteira sofreu o impacto do ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Housing for dairy cattle Estábulo do gado leiteiro 2 Water sources for dairy cattle Fontes de água para gado leiteiro 3 Milking equipment equipamento de ordenha 4 Other, specify Outros, especifique	*Select all that apply *Selecione tudo que se aplica *Ask if sc9b_6 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Não sabe”, não pode seleccionar outra opção	

	-99 Do not know/refuse to answer Não sabe / recusa se a responder		
sc9b_7	How has your access to dairy inputs changed as a result of Cyclone Idai, if at all? Como alterou o seu acesso aos insumos para a produção de leite como resultado do Cyclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to access inputs Mais difícil obter insumos 2 Same/no effect Mesmo / nenhum efeito 3 Easier to access inputs Mais fácil de obter insumos -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc9b_8	How has your ability to sell your milk changed as a result of Cyclone Idai, in the last 12 months (February 1, 2020 – January 31, 2021)? Como a sua capacidade de vender seu leite mudou como resultado do Cyclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to sell Mais difícil de vender 2 Same/No effect Mesmo / Nenhum efeito 3 Easier to sell Mais fácil de vender	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	
sc9b_9	How has the average price of milk obtained from selling milk changed as a result of Cyclone Idai, in the last 12 months (February 1, 2020 – January 31, 2021)? Como o preço médio obtido da venda de leite alterou como resultado do ciclone Idai nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Average sale price is lower Preço médio de venda é menor 2 Average sale price is same/No effect O preço médio de venda é o mesmo / nenhum efeito	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	

	3 Average sale price is higher Preço médio de venda é maior		
sc9b_9_1	By how much did the average price change per liter of milk, on average in the last 12 months (February 1, 2020 – January 31, 2021)? Por quanto o preço médio por litro de leite alterou, em média nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? _____	*Ask if sc9b_9=1 OR sc9b_9=3 *Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc9b_10	How has Cyclone Idai influenced your household's ability to access adequate food, in the last 12 months (February 1, 2020 – January 31, 2021)? Como o Cyclone Idai influenciou a capacidade de sua família de ter acesso a comida adequada, nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Lowered access to or availability of food Acesso reduzido ou disponibilidade reduzida de alimentos 2 No effect on access to or availability of food Nenhum efeito no acesso ou na disponibilidade de alimentos 3 Increased access to or availability of food Maior acesso ou disponibilidade de alimentos -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção * Ask if sc9b_1 = 1	

SECTION 4C: EFFECTS OF MILITARY HOSTILITIES

[Transition]: Enumerator: Thank you for your responses thus far. Now, we would like to learn about the effects on your dairy farm production due to military hostilities. We will ask about how it has influenced your cattle, dairy production, and sales.

Inquiridor: Muito obrigado pelas suas respostas até aqui. Agora gostaríamos de compreender acerca dos efeitos das hostilidades militares na sua farma de produção de leite. Iremos perguntar como isso influenciou o seu gado, a produção de leite e as vendas.

VARIABLES	EFFECTS OF MILITARY HOSTILITIES	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc9c_1	Have you experienced any impacts on your dairy business related to military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? O seu negócio de produção de leite sofreu algum impacto devido às hostilidades militares nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Enumerator: Explain that they should only focus on impacts due to military hostilities to the extent possible, and not on impacts due to Cyclone Idai, Cyclone Eloise, or COVID-19 *Inquiridor: Explique que eles devem focar apenas nos impactos devidos às hostilidades militares tanto quanto possível, e não nos impactos devidos ao Ciclone IDAI, Ciclone Eloise ou COVID-19.	
sc9c_2	How has your access to dairy inputs changed as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o seu acesso aos insumos para a produção de leite como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to access inputs Mais difícil obter insumos 2 Same/no effect Mesmo / nenhum efeito 3 Easier to access inputs Mais fácil de obter insumos -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção *Ask if sc9c_1=1 *Enumerator: Explain that they should only focus on impacts due to military hostilities to the extent possible, and not on impacts due to Cyclone Idai, Cyclone Eloise, or COVID-19 *Inquiridor: Explique que eles devem focar apenas nos impactos devidos às hostilidades militares tanto quanto possível, e	

		não nos impactos devidos ao Ciclone IDAI, Ciclone Eloise ou COVID-19.	
sc9c_3	How did your cow's milk production per day change as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como variou a produção de leite de suas vacas por dia, como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Production per day decreased produção por dia diminuiu 2 Production per day remained same/no effect Produção por dia permaneceu igual / sem efeito 3 Production per day increased Produção por dia aumentou -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc9c_1=1	
sc9c_4	How has your ability to sell your milk changed as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como a sua capacidade de vender seu leite alterou como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 More difficult to sell Mais difícil de vender 2 Same/No effect Mesmo / Nenhum efeito 3 Easier to sell Mais fácil de vender	*Select only one option *Selecione apenas uma opção *Ask if sc9c_1=1	
sc9c_5	How has the average price of milk obtained from selling milk changed as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como o preço médio obtido da venda de leite alterou como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Select only one option *Selecione apenas uma opção *Ask if sc9c_1=1	

	1 Average sale price is lower Preço médio de venda é menor 2 Average sale price is same/No effect O preço médio de venda é o mesmo / nenhum efeito 3 Average sale price is higher Preço médio de venda é maior		
sc9c_6	How has military hostilities influenced your household's ability to access adequate food in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como as hostilidades militares influenciaram a capacidade de sua família de ter acesso a comida adequada, nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Lowered access to or availability of food Acesso reduzido ou disponibilidade reduzida de alimentos 2 No effect on access to or availability of food Nenhum efeito no acesso ou na disponibilidade de alimentos 3 Increased access to or availability of food Maior acesso ou disponibilidade de alimentos -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Ask if sc9c_1=1	

SECTION 5: PRODUCTION PRACTICES

[Transition]: Enumerator: Thank you! Now we want to talk about your dairy production practices.

Inquiridor : Muito obrigado ! Agora vamos falar acerca da suas práticas de manejo da produção de leite

VARIABLES	PRODUCTION PRACTICES	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
section_5	SECTION 5 : PRODUCTION PRACTICES	*Ask Section 5 if sc2_1 = 1 AND sc0_2_2 = 1	
sc3_1_1	Do you graze your dairy cattle? O seu gado leiteiro vai a pastagem? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *If sc3_1_1 = 2 OR sc3_1_1 = -99, go to sc3_1_7	
sc3_1_2	What grazing system do you follow for your dairy cattle? Que sistema de pastoreio segue para o seu gado leiteiro? 1 Free grazing pastoreio livre 2 Partial grazing pastoreio parcial 3 Paddock grazing pastoreio em cercado -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione todas que se aplicam *Ask if sc3_1_1 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc3_1_4	How long does it take you to get your cattle to pasture? (in minutes) Quanto tempo você leva para colocar seu gado no pasto? (em minutos)	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc3_1_5	How easy or difficult is it for you to access adequate grazing for your dairy cattle? Quão fácil ou difícil é ter acesso a pastagem adequada para o seu gado leiteiro? 1 Very easy muito fácil	*Select only one option *Selecione apenas uma opção	INDICATOR: #13

	2 Somewhat easy um pouco fácil 3 Neither easy nor difficult nem fácil nem difícil 4 Somewhat difficult um pouco difícil 5 Very difficult muito difícil -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc3_1_6	Do you pay for access to grazing? Você paga para o acesso à pastagem? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_1_7	Did you provide supplements to your dairy cattle over the last 12 months? That is, in addition to grazing, other types of food such as ration, salt, melasos, etc. are given. Você forneceu suplementos ao seu gado leiteiro nos últimos 12 meses? Ou seja, além do pastoreio, são dados outros tipos de alimentos, como ração, sal, melaços, etc. 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *If sc3_1_7 = 2 OR sc3_1_ = -99, go to sc3_3_1	INDICATOR: #10
	What type of supplement did you use? Que tipo de suplemento usou?	*Read out choices one at a time *Leia as escolhas uma de cada vez *Ask if sc3_1_7 = 1	
sc3_2_2_1	Salt Sal 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_2	Molasses melaço 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc3_2_2_3	Maize bran Farelo de milho 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_4	Wheat bran Sêmea de trigo 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_5	Beer residue bagaço de cerveja 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_6	Ration/Industrial feed Ração das fábricas 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_7	Mineral blocks blocos minerais 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_8	Crop residues stored Resíduos da agricultura armazenado 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_2_9	Crop residues fresh Resíduos de agricultura fresco 1 Yes Sim	*Select only one option *Selecione apenas uma opção	

	2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc3_2_2_10	Crop residues silage Silagem de resíduos agrícolas 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_2_3	How easy or difficult is it for you to access adequate supplementation for your dairy cattle? Quão fácil ou difícil é para você ter acesso à suplementação adequada para o seu gado leiteiro? 1 Very easy muito fácil 2 Somewhat easy um pouco fácil 3 Neither easy nor difficult Nem fácil nem difícil 4 Somewhat difficult um pouco difícil 5 Very difficult muito difícil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc3_1_7 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #13
sc3_2_4_A	Where do you get the supplements? Onde você obtém os suplementos? 1 Input supplier fornecedores de insumos 2 Veterinary store loja veterinária 3 Other farmers outros agricultores 4 Other, specify outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *Ask if sc3_1_7 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc3_2_4	How much was your spending on supplements in the last 12 months (February 1, 2020 – January 31, 2021)? Quanto você gastou em suplementos nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc3_1_7 = 1 *Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -	INDICATOR: #1; #8

		99 se Não sabe / recusa-se a responder	
sc3_3_1	Do you use fodder to feed your cattle herd? Você usa forragem para alimentar seu rebanho de gado? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #10
	What form of fodder do you use? Que tipo de forragem você usa?	*Ask each below separately *Pergunte cada opção abaixo separadamente *Ask if sc3_3_1 = 1	
sc3_3_2_1	Fresh Fresco 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_3_2_2	Hay Feno 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_3_2_3	Silage Silagem 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
	Where did you get fodder during the last 12 months (February 1, 2020 – January 31, 2021)? Onde você conseguiu forragem durante os últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask each below separately *Pergunte cada opção abaixo separadamente	

		*Ask if sc3_3_2_2 = 1 OR sc3_3_2_3 = 1	
sc3_3_4_1	Own production Produção própria 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_3_4_2	Pasture zone (they went to search in the bush) Zona de pasto (eles foram procurar na mata) 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_3_4_3	Purchased Comprado 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_3_5	Who was your supplier? Quem foi seu fornecedor 1 Input supplier Fornecedor de insumos 2 Other farmers Outros agricultores 3 Veterinary store/other stores loja veterinária / outras lojas 4 Cooperative Cooperativa 5 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione todos que se apliquem *Ask if sc3_3_4_3 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc3_3_7	What is the total area where you planted fodder in the last 12 months (February 1, 2020 – January 31, 2021) (in hectares)? Qual é a área total que você plantou forragem nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021) (em hectares)?	*Ask if sc3_3_4_1 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #11

sc3_3_8	How easy or difficult is it access to adequate fodder for your dairy cattle? (scale) Quão fácil ou difícil é o acesso a forragem adequada para o seu gado leiteiro? (escala) 1 Very easy muito fácil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem fácil nem difícil 4 In a way difficult De alguma forma difícil 5 Very difficult Muito difícil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc3_3_1 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #13
sc3_4_1	How does your dairy have access to drinking water when it is in the Kraal? Como o seu gado leiteiro tem acesso a água potável quando está no Curral? 1 Has continuous access to water Tem acesso contínuo a água 2 Bring water to livestock Trazer água para o gado -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #10
sc3_4_2	How much water (L) on average did you bring to each animal per day in the last 12 months (February 1, 2020 – January 31, 2021)? Que quantidade de água (L), em média, você trouxe para cada animal por dia, nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc3_4_1 = 2 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in liters *Insira em litros	
sc3_4_3	How does your dairy have access to water while grazing? Como o seu gado leiteiro tem acesso a água durante o pastoreio? 1 Has continuous access to water sources Tem acesso contínuo a fontes de água 2 I take the cattle to the water Eu levo o gado para a água 3 I bring water to cattle Eu trago água para o gado	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc3_4_4	How much water (L) on average do you bring to each animal per day in the last 12 months (February 1, 2020 – January 31, 2021)? Que quantidade de água (L), em média, você traz para cada animal por dia nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc3_4_3 = 3 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder *Enter in liters *Insira em litros	
sc3_4_6	Do you pay for access to water for your dairy cattle? Você paga pelo acesso à água para o seu gado leiteiro? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_5_1	Where are your cattle kept? Onde seu gado é mantido? 1 Kraal Curral 2 Veranda Varanda (alpendre) 3 Under the tree Debaixo da árvore -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc3_5_1_1	Which of the following do you have in your kraal ? Qual dos seguintes itens você tem em seu curral ? 1 Feeder/food receptacle alimentador / comedouro 2 Water cooler/water receptacle Recipiente para água / bebedouro 3 Sheet cover to give shade Cobertura para dar sombra 4 Cement in the milking area Cimento na área de ordenha 5 A dry ground Um solo seco 6 Other, specify Outros especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc3_5_1 = 1 *Read all options *Leia alto todas as opções *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #26

sc3_6_1	Do you milk by machine or by hand? Você ordenha por máquina ou manual? 1 Machine máquina 2 By hand Manual -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATORS: #10; #25, #26
sc3_6_3_1	Where did you acquire your milking machine? Onde você adquiriu sua máquina de ordenha? 1 Venture 37 (MERCADO) Venture 37 (MERCADO) 2 Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 3 Local market Mercado local 4 Cooperative Cooperativa 5 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc3_6_1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc3_6_3_5_OTHER	Other (specify) Outro especifique	*Ask if sc3_6_3_1 = 5	
	If you needed a new milking machine, where could you get one? Se você precisasse de uma nova máquina de ordenha, onde você poderia obter?	*Ask each option separately *Pergunte cada opção separadamente	
sc3_6_4_1	Venture 37 /MERCADO 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_6_4_2	Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc3_6_4_3	Local market Mercado local 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_6_4_4	Cooperative Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_6_4_5	Other Outros 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_6_4_5_OTHER	Other, please specify Outros , por favor especifique	*Ask if sc3_6_4_5 = 1	
sc3_6_5	How easy or difficult is to access a new milking machine? (scale) Quão fácil ou difícil é obter (acessar) uma nova máquina de ordenha? (escala) 1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 In a way difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_1	Do you inspect for mastitis before milking? Você inspeciona mastite antes da ordenha? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #25
testformastitis	What means do you use to test for mastitis? Que meios você usa para testar a mastite?	*Ask each option separately *Ask if sc3_7_1 = 1	

visual	Visual inspection of the udder for inflammation Inspeção visual do úbere para inflamação 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
cup	Visual inspection of milk using strip cup Inspeção visual do leite usando o copo de fundo escuro 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #10
cmt	CMT test Teste de CMT 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #10
sc3_7_4_#	If you need to get a new strip cup or CMT kits where can you get them? Se você precisar de um novo copo de fundo escuro ou kits de CMT, onde pode obtê-los?	*Ask each option separately *Pergunte cada opção separadamente	
sc3_7_4_1	Venture 37 /MERCADO 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_4_2	Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_4_3	Local market Mercado local 1 Yes Sim	*Select only one option *Selecione apenas uma opção	

	2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc3_7_4_7	Imported Importado 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_4_4	Cooperative Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_4_5	Other Outros 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_7_4_5_OTHER	Other, please specify Outros , por favor especifique	*Ask if sc3_7_4_5 = 1	
sc3_7_9	How easy or difficult is it to access more CMT kit when you need them? Quão fácil ou difícil é obter (acessar) mais kits CMT quando você precisar deles? 1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 In a way difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if cmt = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #13

sc3_8	Do you use stainless steel buckets and/or stainless steel milk cans for milk? Você usa baldes de aço inoxidável e / ou bilhas de leite para o leite? 1 No Não 2 Buckets only Apenas baldes 3 Milk cans only Apenas bilhas de leite 4 Both Ambos -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATORS: #10; #25, #26
	If you need a new stainless steel bucket and/or stainless steel milk can from where can you get it? Se você precisa de um novo balde de aço inoxidável e / ou uma bilha de leite de aço inoxidável de onde pode obtê-lo ?	*Ask each option separately *Pergunte cada opção separadamente	
sc3_8_1_1	Venture 37 / MERCADO 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_1_2	Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_1_3	Local market Mercado local 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_1_7	Imported Importado 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc3_8_1_4	Cooperative Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_1_5	Other Outros 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_1_5_OTHER	Other, please specify Outros , por favor especifique	*Ask if sc3_8_1_5 = 1	
sc3_8_1_6	Don't know Nao sabe 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	
sc3_8_5	How easy or difficult is it to get a new stainless steel bucket and/or a stainless steel milk can? Quão fácil ou difícil é obter um novo balde de aço inoxidável e / ou uma bilha de leite de aço inoxidável? 1 Very easy muito fácil 2 In a way easy De uma maneira fácil 3 Neither easy nor difficult Nem fácil nem difícil 4 In a way difficult De uma maneira difícil 5 Very difficult Muito difícil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #13
sc3_8_01	Did you use chilling facilities for milk in the last 12 months (February 1, 2020 – January 31, 2021)? Você usou instalações de refrigeração para leite nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #14

	If you need new milk chilling equipment from where can you get it? <i>Se precisar de um novo equipamento de refrigeração onde pode obter?</i>	*Ask each option separately *Pergunte cada opção separadamente	
sc3_8_01_1	Venture 37 / MERCADO 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	
sc3_8_01_2	Stores of agricultural and veterinary inputs <i>Lojas de insumos agrícolas e veterinários</i> 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	
sc3_8_01_3	Local market <i>Mercado local</i> 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	
sc3_8_01_4	Imported <i>Importado</i> 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	
sc3_8_01_5	Cooperative <i>Cooperativa</i> 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	
sc3_8_01_6	Other <i>Outros</i> 1 Yes <i>Sim</i> 2 No <i>Nao</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option *Selecione apenas uma opção	

sc3_8_01_6_OTHER	Other, please specify Otros , por favor especifique	*Ask if sc3_8_01_6 = 1	
sc3_8_02	Did you use milk filters in the last 12 months (February 1, 2020 – January 31, 2021)? Você usou filtros de leite nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATORS: #14; #25
	If you need a new milk filter from where can you get it? Se você precisa de um novo filtro de leite onde pode obtê-lo?	*Ask each option separately *Pergunte cada opção separadamente	
sc3_8_02_1	Venture 37 / MERCADO 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_02_2	Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_02_3	Local market Mercado local 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_02_4	Imported Importado 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc3_8_02_5	Cooperative Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_02_6	Other Outros 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_02_6_OTHER	Other, please specify Outros , especifique	*Ask if sc3_8_02_6 = 1	
sc3_8_03	Did you use milk feeders in the last 12 months (February 1, 2020 – January 31, 2021)? Você usou biberões nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #14
	If you need a new milk feeder from where can you get it? Se você precisa de um novo biberão onde pode obtê-lo?	*Ask each option separately *Pergunte cada opção separadamente	
sc3_8_03_1	Venture 37 / MERCADO 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_03_2	Stores of agricultural and veterinary inputs Lojas de insumos agrícolas e veterinários 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc3_8_03_3	Local market Mercado local 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_03_4	Imported Importado 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_03_5	Cooperative Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_03_6	Other Other 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc3_8_03_6_OTHER	Other, please specify Outros , por favor especifique	*Ask if sc3_8_03_6 = 1	
Sc8_01	Does your household have a milk tank? Sua casa tem um tanque de leite? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc8_02	What is the capacity of the milk tank (or total capacity in the various tanks)? Qual é a capacidade do tanque de leite (ou capacidade total nos vários tanques)?	*Ask if sc8_01 =1 *Enter in liters *Insira em litros *Enter -99 if Do not know/refuse to answer *Digite - 99 se Não sabe / recusa-se a responder	INDICATOR: #27

[Transition] Enumerator : Now I would like to ask you about your business planning Inquiridor : Agora eu gostaria de perguntar sobre seu planejamento			
Sc3_9_1	Have you ever developed a business plan for your dairy activities? O(a) senhor (a) já desenvolveu um plano de negócios para suas atividades leiteiras? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #12
Sc3_9_2	Did you use a business plan for your dairy activities in the last 12 months (February 1, 2020 – January 31, 2021)? O (a) senhor (a) usou um plano de negócios para suas atividades leiteiras nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc3_9_1 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #12
[Transition] Enumerator: Now I would like to ask you about any milk testing done by you prior to selling Inquiridor: Agora eu gostaria de lhe perguntar sobre qualquer teste de leite feito por você antes de vender			
Sc3_10_1	Do you do any quality testing on your milk before selling it? Faz algum teste de qualidade no seu leite antes de vender? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #26
Sc3_10_2	What do you test for? Que tipo de teste realiza ? 1 Water adulteration Adulteração com a água 2 Bacteria Bactérias 3 Butter and fat content Teor de gordura 4 Antibiotic residue Resíduos de antibióticos	*Select all that apply *Selecione tudo que se aplica *Ask if sc3_10_1=1 *Prompt with responses *Coloque logo as opções	INDICATOR: #26

	5 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	

SECTION 6: ANIMAL HEALTH SERVICES

[Transition]: Enumerator: Thank you! Now I would like to talk to you about your herd’s overall health and your use of animal health services

Inquiridor: Obrigado! Agora eu gostaria de falar consigo sobre a saúde geral de seu rebanho e seu uso de serviços de saúde animal

VARIABLES	ANIMAL HEALTH SERVICES	ENUMERATOR INSTRUCTIONS	PMP INDICATORS
sc4_1	Did you or an animal health provider test any of your cattle for any disease in the last 12 months (February 1, 2020 – January 31, 2021)? Você ou algum profissional de saúde animal testou algum de seus bovinos para qualquer doença nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *If sc4_1 = 2 OR sc4_1 = -99 go to sc4_6_10	
sc4_6_9_0\$1	Were they tested for Brucellosis ? O seu gado leiteiro foi testados para Brucelose? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_1 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_10\$1	Who tested for Brucellosis ? Quem fez o teste de Brucelose?	*Ask if sc4_6_9_0\$1 = 1 *Select only one option *Selecione apenas uma opção	

	1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc4_6_9_1_OTHER\$1	Other (please specify) Outros (por favor especifique)	*Ask if sc4_6_9_10\$1 = 6	
sc4_6_9_0\$2	Were they tested for Tuberculosis? O seu gado foi testado para tuberculose? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_1 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_10\$2	Who tested for Tuberculosis? Quem fez o teste de tuberculose? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_9_0\$2 = 1 *Select only one option *Selecione apenas uma opção	

sc4_6_9_1_OTHER\$2	Other (please specify) Outros (por favor especifique)	*Ask if sc4_6_9_10\$2 = 6	
sc4_6_9_0\$3	Were they tested for Mastitis? O seu gado foi testado para mastite? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_1 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_10\$3	Who tested for Mastitis? Quem fez os testes de mastite? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_9_0\$3 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_1_OTHER\$3	Other (please specify) Outros (por favor especifique)	*Ask if sc4_6_9_10\$3 = 6	
sc4_6_9_0\$4	Were they tested for Tick-borne diseases? O seu gado foi testado para doenças transmitidas por carrapatos? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_1 = 1 *Select only one option *Selecione apenas uma opção	

sc4_6_9_10\$4	Who tested for Tick-borne diseases? Quem fez os testes para as doenças transmitidas por carraças? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_9_0\$4 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_1_OTHER\$4	Other (please specify) Outros (por favor especifique)	*Ask if sc4_6_9_10\$4 = 6	
sc4_6_9_A	Has your cattle been tested for other diseases? Seu gado foi testado para outras doenças? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_1 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_9_0_OUTRO	Name disease tested for: Nome da doença testada	*Ask if sc4_6_9_A = 1	
[Transition]: Enumerator: Now I would like to talk to you about any vaccinations you have done for your dairy cattle Inquiridor: Agora eu gostaria de falar consigo sobre alguma vacina aplicada ao seu gado leiteiro			
sc4_6_10	Did you vaccinate your cattle against any diseases in the past 12 months (February 1, 2020 – January 31, 2021)? O (a) senhor (a) vacinou seu gado contra alguma doença nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Nao	*Select only one option *Selecione apenas uma opção *If sc4_6_10 = 2 OR sc4_6_10 = -99, go to sc4_6_12	INDICATOR #10

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc4_6_10_2	Do you keep vaccination records for your cattle? O (a) senhor (a) tem registros da vacinação do seu gado? 1 Yes Sim 2 No Não -99 Do not know/refuse Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_11_1\$2	Was your cattle vaccinated for foot and mouth disease? O seu gado foi vacinado contra a febre aftosa? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$2	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_11_1\$2 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$2	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$2 = 6	

sc4_6_11_1\$3	Was your cattle vaccinated for Skin diseases (eg, Lump skin disease) Foi o seu gado vacinado contra doenças de pele (por exemplo, Dermatose nodular) 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$3	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_11_1\$3 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$3	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$3 = 6	
sc4_6_11_1\$4	Was your cattle vaccinated for brucellosis? Seu gado foi vacinado para brucelose? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$4	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado	*Ask if sc4_6_11_1\$4 = 1	

	2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$4	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$4 = 6	
sc4_6_11_1\$5	Was your cattle vaccinated for Anthrax? O seu gado foi vacinado contra Carbúnculo hemático? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$5	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_11_1\$5 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$5	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$5 = 6	

sc4_6_11_1\$7	Was your cattle vaccinated for symptomatic carbuncle? Foi o seu gado vacinado contra Carbunculo Sintomático? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$7	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_11_1\$7 = 1 *Select all that apply *Selecione apenas uma opção *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$7	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$7 = 6	
sc4_6_11_1\$8	Was your cattle vaccinated for tuberculosis? O seu gado foi vacinado contra tuberculose? 1 Yes Sim 2 No Não -99 Do not know/refuse Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$8	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado	*Ask if sc4_6_11_1\$8 = 1	

	2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$8	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$8 = 6	
sc4_6_11_1\$1	Do not know – only officially required vaccinations Não sabe – apenas vacinas determinadas oficialmente 1 Yes Sim 2 No Não -99 Do not know/refuse Não sabe / recusa-se a responder	*Ask if sc4_6_10 = 1 *Select only one option *Selecione apenas uma opção	
sc4_6_11_2\$1	Who vaccinated the animal? Quem vacinou o gado? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_11_1\$1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_11_2OTHER\$1	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_11_2\$1 = 6	

sc4_6_12	Did you treat your cattle against ticks in the last 12 months (February 1, 2020 – January 31, 2021)? Tratou o seu gado contra carraças nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #10
sc4_6_13	How many days ago was the last time you treated your cattle against ticks? Há quantos dias foi o ultimo tratamento contra carraças?	*Ask if sc4_6_12 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_6_14_2	Who applied the treatment? Quem aplicou o tratamento 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_14_2_OTHER	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_14_2 = 6	
sc4_6_15	Have your cattle had any wounds or illnesses in the last 12 months (February 1, 2020 – January 31, 2021)? Seu gado teve alguma ferida ou doença nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Select only one option *Selecione apenas uma opção	

	1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
	What health problems did your cattle have over the past 12 months? Que problemas de saúde o seu gado teve nos últimos 12 meses?	*Ask if sc4_6_15 = 1	
sc4_6_17_1\$1	Did your cattle have mastitis in the last 12 months (February 1, 2020 – January 31, 2021)? Seu gado teve mastite nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_17_2\$1	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte das vezes para esta doença? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other (please specify) Outros (por favor especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$1	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$1 = 6	

sc4_6_17_3\$1	How many cows had this disease in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas vacas tiveram esta doença nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc4_6_17_1\$1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_6_17_1\$2	Did your cattle have any wounds in the last 12 months (February 1, 2020 – January 31, 2021)? Seu gado teve alguma ferida nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_17_2\$2	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte das vezes para essa condição? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$2 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$2	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$2 = 6	
sc4_6_17_3\$2	How many cows had this problem in the last 12 months (February 1, 2020 – January 31, 2021)?	*Ask if sc4_6_17_1\$2 = 1	

	Quantas vacas tiveram este problema nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_6_17_1\$3	Did your cattle have conjunctivitis in the last 12 months (February 1, 2020 – January 31, 2021)? O seu gado teve conjuntivitis nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_17_2\$3	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte das vezes para essa condição? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privadas contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$3 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$3	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$3 = 6	
sc4_6_17_3\$3	How many cows had this disease in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas vacas tiveram esta doença nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc4_6_17_1\$3 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

sc4_6_17_1\$4	Did your cattle have Tick-borne diseases (heartwater, readwater, anaplasmosis) in the last 12 months (February 1, 2020 – January 31, 2021)? O seu gado teve doenças transmitidas por carrças (riquetsiose, babesiose, anaplasmoze) nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_17_2\$4	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte das vezes para estas doenças? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$4 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$4	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$4 = 6	
sc4_6_17_3\$4	How many cows had this disease in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas vacas tiveram esta doença nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc4_6_17_1\$4 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	

sc4_6_17_1\$5	Did your cattle have diarrhoea in the last 12 months (February 1, 2020 – January 31, 2021)? Seu gado teve diarreia nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_6_17_2\$5	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte do tempo para essa condição? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$5=1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$5	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$5=6	
sc4_6_17_3\$5	How many cows had this disease in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas vacas tiveram esta doença nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)?	*Ask if sc4_6_17_1\$5 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_6_17_1\$6	Other 1 Yes Sim 2 No Nao	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc4_6_17_1\$6_OUTRO	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_1\$6 = 1	
sc4_6_17_2\$6	Who treated the cattle most of the time for this condition? Quem tratou o gado a maior parte do tempo para essa condição? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_17_1\$6 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc4_6_17_2_OTHER\$6	Other, please specify Outros (por favor especifique)	*Ask if sc4_6_17_2\$6 = 6	
sc4_6_17_3\$6	How many cows had this disease in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas vacas tiveram esta doença nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro de 2021)?	*Ask if sc4_6_17_1\$6 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_6_18	Were any of your lactating cows treated with injectable antibiotics in the last 12 months (February 1, 2020 – January 31, 2021)? Alguma de suas vacas em lactação foi tratada com antibióticos injetáveis nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc4_6_19	Did you withhold their milk from human consumption or sale following treatment? Você retirou o leite do consumo humano ou venda após o tratamento? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_6_18 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #10
Sc4_6_19_1	For how many days did you withhold their milk from human consumption or sale following treatment? Por quantos dias você reteve esse leite do consumo humano ou venda após o tratamento?	*Ask if sc4_6_19=1 *Enter -99 if do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc4_7_1_1	Have you used artificial insemination for your cows and heifers over the past 12 months (February 1, 2020 – January 31, 2021)? Você usou inseminação artificial para suas vacas e novilhas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_7_2_1_1	Who provided the service? Quem prestou o serviço? 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privadoscontratados 4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária	*Ask if sc4_7_1_1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	

	6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc4_7_2_1_1_OUTRO	Other, please specify Outros (por favor especifique)	*Ask if sc4_7_2_1_1 = 6	
sc4_7_3_12	How easy or difficult was it for you to access artificial insemination for your dairy cattle? Quão fácil ou difícil foi para você ter acesso à inseminação artificial para o seu gado leiteiro? 1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 Somehow difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_7_1_1 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #13
sc4_7_1_2	Have you used natural breeding services for your cows and heifers over the past 12 months (February 1, 2020 – January 31, 2021)? Você usou serviços de monta natural (touro) para suas vacas e novilhas nos últimos 12 meses (1 de Fevereiro de 2020 a 31 de Janeiro de 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc4_7_2_1_2	Who provided the service? Quem forneceu o serviço 1 Household member or hired worker membro do agregado familiar ou trabalhador contratado 2 Promoter Promotor 3 Private contracted veterinarians veterinários privados contratados	*Ask if sc4_7_1_2 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não	

	4 Project (e.g. LOL) Projeto (por exemplo, LOL) 5 Livestock Technician Técnico de Pecuária 6 Other Outros -99 Do not know/refuse to answer Não sabe / recusa-se a responder	sabe”, não pode selecionar outra opção	
sc4_7_2_1_2_OUTRO	Other, please specify Outros (por favor especifique)	*Ask if sc4_7_2_1_2 = 6	
sc4_7_3_22	How easy or difficult was it for you to access natural breeding service for your dairy cattle? Quão fácil ou difícil foi para você ter acesso à monta natural (touro) para o seu gado leiteiro? 1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 Somehow difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc4_7_1_2 = 1 *Select only one option *Selecione apenas uma opção	INDICATOR: #13
Sc4_8_0	If you wanted to buy a heifer for dairy production, how easy or difficult would it be? Se você quisesse comprar uma novilha para a produção de leite, quão fácil ou difícil seria? 1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 Somehow difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #13
sc4_8_1	In general, how easy or difficult is it to access health services for your dairy cattle? Em geral, quão difícil é ter acesso aos serviços de saúde para o gado leiteiro?	*Select only one option *Selecione apenas uma opção	INDICATOR: #13

	1 Very easy Muito facil 2 In a way easy De alguma forma facil 3 Neither easy nor difficult Nem facil nem dificil 4 Somehow difficult De alguma forma dificil 5 Very difficult Muito dificil -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
[Transition]: Enumerator: Now I'd like to ask you about your inputs and from where you receive them Inquiridor: Agora gostaria de perguntar sobre os insumos e de onde os recebe			
Sc7_5	In the last 12 months (February 1, 2020 – January 31, 2021) Did you receive any dairy inputs or services (e.g food and feed supplements, medicines, veterinary care etc.) from the Venture37 MERCADO project? Nos últimos 12 meses recebeu algum insumo ou serviços para o gado leiteiro (por exemplo, alimentos e suplementos alimentares ou rações, remédios, cuidados veterinários, etc.) do projeto MERCADO da Venture 37? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_6	In the last 12 months (February 1, 2020 – January 31, 2021), Did you receive any dairy inputs or services from a buyer? Nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021), você recebeu algum insumo ou serviço para o gado leiteiro de um comprador de leite? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	

sc7_7_1	Milk Collection Center / Cooperative Centro de Recolha de Leite / Cooperativa 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc7_6 = 1 *Select only one option *Selecione apenas uma opção	
sc7_7_2	Local Buyer Comprador local 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc7_6 = 1 *Select only one option *Selecione apenas uma opção	
sc7_7_3	Processor Processador 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc7_6 = 1 *Select only one option *Selecione apenas uma opção	
sc7_7_4	Other Outros 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc7_6 = 1 *Select only one option *Selecione apenas uma opção	
sc7_7_4_OTHER	Other, please specify Outros, por favor especifique	*Ask if sc7_7_4 = 1	
	What specific inputs have you received from a buyer in the last 12 months? Que insumos específicos você recebeu de um comprador nos últimos 12 meses?	*Ask if sc7_6 = 1	
sc7_10_1	Food & Feed Supplements Alimentos/forragem e Suplementos Alimentares/ração 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_2	Medicines Medicamentos 1 Yes Sim 2 No Nao	*Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc7_10_3	Veterinary care Assistência veterinária 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_4	Milk test Testes para leite 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_5	Artificial insemination Inseminação artificial 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_6	Village bull of the community Touro da comunidade 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_7	Milking utensils Utensílios de ordenha 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_8	Continuing training Treinamento contínuo 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
sc7_10_9	Other Outros 1 Yes Sim	*Select only one option *Selecione apenas uma opção	

	2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc7_10_9_OTHER	Other (Specify Outro especificar)	*Ask if sc7_10_9 = 1	

SECTION 7: TRAINING AND KNOWLEDGE

[Transition]: Enumerator: Now I would like to talk to you about any training you may have received.

Inquiridor: Agora gostaria de falar consigo sobre algum treinamento que você tenha recebido.

VARIABLES	TRAINING AND KNOWLEDGE	ENUMERATOR INSTRUCTIONS	PMP INDICATORS
sc10_1	Are you aware of the MERCADO project led by Venture37? Tem conhecimento do projeto MERCADO que está a ser implementado pela Land O'Lakes? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *If sc10_1 = 2, go to sc5_1	
sc10_2	What kind of engagement have you had with MERCADO since October 2016? Que tipo de envolvimento você teve com a MERCADO desde Outubro de 2016? 1 Received trainings on dairy production Recebeu treinamento em produção de leite 2 Been connected to input suppliers Foi ligado aos fornecedores de insumos 3 Been connected to buyers and exporters Foi ligado aos compradores e exportadores 4 Received inputs directly Recebeu insumos diretamente 5 Become part of a dairy cooperative Tornou-se membro de uma cooperativa de leite 6 Other, Specify Outro, Especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Prompt with options *Coloque logo as opções *Select all that apply *Selecione tudo que se aplica *Ask if sc10_1 = 1 else skip to sc5_1 *If "Do not know" is selected make sure no other option is selected *Assegure que se selecionou "Não sabe", não pode selecionar outra opção	
	Please rate the following as "Not Useful," "Little Useful," "Somewhat useful" or "Very Useful": Por favor, avalie o seguinte como "Não útil", "Pouco útil", "útil" ou "Muito útil":		

sc10_5	Trainings on dairy production: Treinamentos sobre produção de leite: 1 Very Useful muito útil 2 Somewhat useful útil 3 Little useful pouco útil 4 Not useful Não útil -99 Do not know/refuse to answer Não sei / recuso a responder	*Ask if sc10_2 = 1 *Select only one option *Selecione apenas uma opção	
sc10_6	Establishing connection to input suppliers Ligações com fornecedores de insumos 1 Very Useful muito útil 2 Somewhat useful Útil 3 Little useful pouco útil 4 Not useful Não útil -99 Do not know/refuse to answer Não sei / recuso a responder	*Select only one option *Selecione apenas uma opção *Ask if sc10_2 = 2	
sc10_7	Establishing connection to buyers and exporters Ligações com compradores e exportadores 1 Very Useful muito útil 2 Somewhat useful Útil 3 Little useful pouco útil 4 Not useful Não útil -99 Do not know/refuse to answer Não sei / recuso a responder	*Ask if sc10_2 = 3 *Select only one option *Selecione apenas uma opção	
sc10_8	Receiving dairy inputs directly Recepção de insumos para produção de leite directamente 1 Very Useful muito útil 2 Somewhat useful Útil 3 Little useful pouco útil 4 Not useful Não útil -99 Do not know/refuse to answer Não sei / recuso a responder	*Select only one option *Selecione apenas uma opção *Ask if sc10_2 = 4	
sc10_10	Becoming part of a dairy cooperative Tornar-se membro de uma cooperative leiteira	*Select only one option *Selecione apenas uma opção	

	1 Very Useful muito útil 2 Somewhat useful Útil 3 Little useful pouco útil 4 Not useful Não útil -99 Do not know/refuse to answer Não sei / recuso a responder	*Ask if sc10_2 = 5	
Sc10_11	Have you previously worked with any project supporting the dairy industry? O (a) senhor (a) já trabalhou anteriormente com algum projeto de apoio à indústria leiteira? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
	Which organization have you worked with? Com que organização trabalhou?	*Ask if sc10_11 = 1	
Sc10_11_1	Belgian (specify name) Belga (especificar nome) 1 Yes Sim 2 No Não	*Ask if sc10_11=1 *Select only one option *Selecione apenas uma opção	
Sc10_11_2	German (specify name) Alemão (especificar nome) 1 Yes Sim 2 No Não	*Ask if sc10_11=1 *Select only one option *Selecione apenas uma opção	
Sc10_11_3	Mozambican government (specify name) Governo moçambicano (especificar nome) 1 Yes Sim 2 No Não	*Ask if sc10_11=1 *Select only one option *Selecione apenas uma opção	
Sc10_11_4	Land O Lakes 1 Yes Sim 2 No Não	*Ask if sc10_11=1 *Select only one option *Selecione apenas uma opção	
Sc10_11_4	Other (specify name) 1 Yes Sim 2 No Não	*Ask if sc10_11=1 *Select only one option *Selecione apenas uma opção	

sc5_1	Has anyone in your household or an employee received Land O' Lakes/Venture37/MERCADO training in dairy cattle management in the last 12 months (February 1, 2020 – January 31, 2021)? Alguém do seu agrgado familia ou um empregado recebeu treinamento da Venture 37/MERCADO em maneios de gado leiteiro nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021) 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc10_2 = 1 *Select only one option *Selecione apenas uma opção	
Sc5_1_1	What kind of trainings have you received in the last 12 months? Que tipo de treinamentos recebeu nos últimos 12 meses? 1. Training on improved farm practices Terinamento em práticas melhoradas da farma 2. Fodder production Produção de forragem 3. Improved dairy husbandry Maneio melhorado de gado leiteiro 4. Improved farm management Gestão melhorada da farma 5. Improved agricultural productivity Produtividade agrícola melhorada 6. Input supply Fornecimento de insumos 7. Post-harvest handling Gestão pós-colheita 8. Food security Segurança alimentar 9. Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc5_1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc5_2	Who has received this training? Quem recebeu este treinamento 1. Repondent Entrevistado 2. Respondent's spouse Esposo/a do entrevistado	*Ask if sc5_1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected	

	3. Another adult male member of the household Outro membro masculino adulto do agregado familiar 4. Other household adult female member of the household Outro membro feminino do agregado familiar do agregado familiar 5. Farm employee Empregado da farma 6. Other Outro -99 Do not know/refuse to answer Não sei / recuso a responder	*Assegure que se seleccionou “Não sabe”, não pode seleccionar outra opção	
[Transition]: Enumerator: Now we want to ask you some questions about what you have learned Inquiridor: Agora queremos fazer algumas perguntas sobre o que você aprendeu			
	What are two activities that you can do to improve pasture quality? Mencione duas atividades que você pode fazer para melhorar a qualidade das pastagens?	*Do not prompt with options *Não coloque logo as opções	
sc5_4_1	Controlling the weeds Controlo de ervas daninhas 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_4_2	Fertilize the field with potassium once a year (if the field has a sandy soil) Fertilização do campo com potássio uma vez por ano (se o campo tiver um solo arenoso) 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_4_3	Rotate between grass and vegetables Rotação entre capim e hortícolas 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_4_4	Seal the field to eliminate entry of unwanted animals Cercar o campo para eliminar a entrada de animais indesejados 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_4_5	Cut the grass (with a scythe, animal scythe or reaper) Cortar o capim (com foice, fceifeira ou riper)	*Select only one option *Selecione apenas uma opção	INDICATOR: #17

	1 Yes Sim 2 No Não		
sc5_4_6	Other Outro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	
	Please list the advantages of artificial insemination Por favor, liste as vantagens da inseminação artificial	*Do not prompt with options *Não coloque logo as opções	
sc5_5_1	No need to have access to an ox / male / bull Não tem necessidade de ter acesso a um boi / macho / touro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_5_2	No risk of transmission of sickness Nenhum risco de transmissão de doença 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_5_3	The offspring will have predictable genetic material A cria terá material genético previsível 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_5_4	Having power to decide when and what you want your cows to achieve Ter poder para decidir quando e o que quer qu'as suas vacas alcancem 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_5_5	It is more economical to buy semen than to keep an ox / male / bull É mais econômico comprar sêmen do que manter um boi / macho / touro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR #17
sc5_5_6	You can choose from males from all over the world, depending on the characteristics you need for your herd Você pode escolher entre machos de todo o mundo,	*Select only one option *Selecione apenas uma opção	INDICATOR: #17

	dependendo das características que precisa para o seu rebanho 1 Yes Sim 2 No Não		
sc5_5_7	Other Outro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	
sc5_5_7_oth	Other, please specify Outro (por favor, especifique)	*Ask if sc5_5_7 = 1	
	What data or information would you need to estimate the profit from your dairy business? Que dados ou informações você precisaria para estimar o lucro de seu negócio de leite?	*Do not prompt with options *Não coloque logo as opções	
sc5_6_1	Revenue Receita 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #18
sc5_6_2	Expenses Despesas 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #18
sc5_6_3	Other Outro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	
sc5_6_3_OUTRO	Other, please specify Outro (por favor, especifique)	*Ask if sc5_6_3 = 1	
	What are the most important equipment or areas to have in the Kraal Quais são os equipamentos ou áreas mais importantes para se ter no curral ?	*Do not prompt with options *Não coloque logo as opções	
sc5_7_1	Feeder / food receptacle Alimentador / Comedouros 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_7_2	Water cooler / water receptacle Refrigerador de água / bebedouro 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17

sc5_7_3	Sheet / cover to give shade Chapa / cobertura para dar sombra 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_7_4	Cement in the milking area Cimento na área de ordenha 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_7_5	A dry ground Chão seco 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
	Please provide us with ways of preventing or controlling mastitis. Por favor, indique as maneiras de prevenir ou controlar a mastite.	*Do not prompt with options *Não coloque logo as opções	
sc5_8_1	Disinfect the udder and teats before milking Desinfecte o úbere e as tetas antes de ordenha 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_2	Keep milking equipment clean and in good condition Mantenha o equipamento de ordenha limpo e em boas condições 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_3	Wash hands before and after milking each cow Lave as mãos antes e depois da ordenha de cada vaca 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_4	Disinfecting the udder and teats after milking Desinfecção do úbere e tetas após a ordenha 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_5	Feed the cows immediately after milking, and ensure they have access to clean water Alimente as vacas imediatamente após a ordenha e garanta que elas tenham acesso a água limpa	*Select only one option *Selecione apenas uma opção	INDICATOR: #17

	1 Yes Sim 2 No Não		
sc5_8_6	Treat mastitis using veterinary products or services Tratar mastite usando produtos ou serviços veterinários 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_7	Keep cows that frequently suffer from mastitis away from other Mantenha as vacas que frequentemente sofrem de mastite distantes das outras 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_8	Milking the cows with mastitis after the other cows Ordenhar as vacas com mastite após as outras vacas 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_9	Keep cows as clean as possible Mantenha as vacas o mais limpas possível 1 Yes 2 No	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_10	Give dry cow therapy to dry cows Faça tratamento de vaca seca às vacas secas 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_11	Keep the kraal clean/hygenic, and where calves live clean/hygenic Mantenha o Curral e o viteleiro limpo/higienizado 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	INDICATOR: #17
sc5_8_12	Other Outros 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção	
sc5_8_12_OUTRO	Other (Specify) Outro especifique)	*Ask of sc5_8_12=1	

Sc5_10_1	What are best practices in cow feeding? Quais são as melhores práticas de alimentação de vacas? 1 Adequate grass for grazing Pastagem adequada 2 Mineral supplementation suplementação mineral 3 Fodder/forage forragem 4 Continuous access to water Acesso contínuo à água 5 Other, specify Outro especifique -99 Do not know/refuse to answer Não sei / recuso a responder	*Do not prompt with options *Não coloque logo as opções *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #17
Sc5_10_2	What are the advantages of keeping the kraal hygienic? Quais são as vantagens de manter o curral higienico? 1 Milk will not get contaminated Leite não será contaminado 2 Animal will be less susceptible to diseases Animais serão menos suscetível a doenças 3 Other, specify Outro especifique -99 Do not know/refuse to answer Não sei / recuso a responder	*Do not prompt with options *Não coloque logo as opções *Select all that apply *Selecione todas as opções aplicáveis. *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #17
Sc5_10_3	In what ways can the quality of milk be maintained? De que modo a qualidade do leite pode ser mantida? 1 Maintain a hygienic kraal Manter um curral higiênico 2 Weekly tick treatments tratamentos semanais de carraças 3 Vaccinations Vacinações 4 Use of steel receptacles for milk Uso de recipientes de aço para leite 5 Use of a milking machine Uso de uma máquina de ordenha 6 Other, specify Outro especifique -99 Do not know/refuse to answer Não sei / recuso a responder	*Do not prompt with options *Não coloque logo as opções *Select all that apply *Selecione todas as opções aplicáveis *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #17

Sc5_10_4	Do you currently create a budget for farm operations? Atualmente você estabelece um orçamento para operações da farma? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Do not prompt with options *Não coloque logo as opções *Select only one option *Selecione apenas uma opção	INDICATOR: #18
Sc5_10_5	What are the contents of a business plan? Quais são os componentes de um plano de negócios? 1 Financial plan Plano financeiro 2 Breakdown of products and services Discriminação de produtos e serviços 3 Production plan Plano de produção 4 Sales plan Plano de vendas 5 Other, specify Outro especifique -99 Do not know/refuse to answer Não sei / recuso a responder	*Do not prompt with options *Não coloque logo as opções *Select all that apply *Selecione todas as opções aplicáveis. *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #18
Sc5_10_6	What types of record should a dairy farmer keep? Que tipo de registros um produtor deve manter? 1 Production records registros de produção 2 Feeding records registros de alimentação 3 Sales records registros de vendas 4 Calving records registros de parto 5 Health records registros de sanidade animal 6 Mortality records registros de mortalidade 7 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sei / recuso a responder	*Do not prompt with options *Não coloque logo as opções *Select all that apply *Selecione todas as opções aplicáveis. *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	INDICATOR: #18

SECTION 8: LABOR, ROLES, AND RESPONSIBILITIES

[Transition]: Enumerator: Now I want to talk to you about the labor employed by you and the division of labor on your farm.

Inquiridor: Agora quero falar consigo acerca dos trabalhadores empregues e da divisão do trabalho na sua farma

VARIABLES	LABOR, ROLES AND RESPONSIBILITIES	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	In the past 12 months (February 1, 2020 – January 31, 2021), how many employees of the different types did you have for dairy activities or fodder production Nos últimos 12 meses (1 de Fevereiro 2020 – 31 de Janeiro 2021), quantos empregados de diferentes tipos teve para as atividades leiteiras ou produção de forragem?	*Please enter 0 if did not use *Por favor digite 0 se não foi usado	
sc6_3_1_1_MALE	Full time permanent – Male Tempo inteiro permanente - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_1_FEMALE	Full-time permanent – Female Tempo inteiro permanente - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_2_MALE	Part Time Permanent – Male Parcial permanente - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_2_FEMALE	Part time permanent – Female Parcial permanente - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3

sc6_3_1_3_MALE	Full-time seasonal – Male Tempo inteiro sazonal - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_3_FEMALE	Full-time seasonal – Female Tempo inteiro sazonal - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_4_MALE	Part Time seasonal – Male Parcial sazonal - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_3_1_4_FEMALE	Part Time seasonal – Female Parcial sazonal - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
	How many new employees for each of the following types (from variables sc6_31_1_1_MALE to sc6_31_1_4_FEMALE), did you hire in the past 12 months as a result of participation in the MERCADO project? Quantos novos trabalhadores para cada um dos seguintes tipos (das variáveis sc6_31_1_1_MALE até sc6_31_1_4_FEMALE) contratou nos últimos 12 meses, como resultado da participação no projeto MERCADO?	*Please enter 0 if no new employees were hired as a result of participation in the MERCADO project *Por favor digite 0 se não foram admitidos novos empregados como resultado da participação no projecto MERCADO	
sc6_31_1_1_MALE	Full time permanent – Male Tempo inteiro permanente - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3

sc6_31_1_1_FEMALE	Full-time permanent – Female Tempo inteiro permanente - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_2_MALE	Part Time Permanent – Male Parcial permanente - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_2_FEMALE	Part time permanent – Female Parcial permanente - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_3_MALE	Full-time seasonal – Male Tempo inteiro sazonal - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_3_FEMALE	Full-time seasonal – Female Tempo inteiro sazonal - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_4_MALE	Part Time seasonal – Male Parcial sazonal - Masculino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3
sc6_31_1_4_FEMALE	Part Time seasonal – Female Parcial sazonal - Feminino	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #3

sc6_3_2	On average, how many hours per week does a part-time employee work? Em média, quantas horas por semana um trabalhador em regime parcial permanente ?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
sc6_3_3_1	On average, how many weeks of the year does a seasonal worker work? Em média, quantas semanas do ano um trabalhador sazonal trabalha?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	
[Transition]: Enumerator: Now we would like to ask you about the division of labor on your farm Inquiridor: Agora queria perguntar sobre a divisão do trabalho na sua farma Ask sc6_3_4_1 to sc6_5_6 if sc1_1_0 = 1			
	Who is primarily responsible for doing the following activities in your dairy production? Quem é o principal responsável por realizar as seguintes atividades na sua exploração leiteira?	*Ask if sc1_1_0 = 1 *Read out all options *Leia alto todas as opções	
sc6_3_4_1	Fodder production (sowing or planting) Produção de forragem (semear ou plantio) 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis. *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_2	Cleaning the kraal Limpar o curral 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis.	

	5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_3	Kraal building Construção do curral 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulto doméstico 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_4	Purchase of products for cows (ration, medicines) Compra de produtos para vacas (ração, medicamentos) 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_5	Kraal maintenance Manutenção do curral 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected	

	6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Assegure que se seleccionou “Ninguém faz” ou “Não sabe”, não pode seleccionar outra opção	
sc6_3_4_6	Cuts and takes fodder to the Kraal Cortar e levar forragem para o Kraal 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Ninguém faz” ou “Não sabe”, não pode seleccionar outra opção	
sc6_3_4_7	Cut fodder so the animals can eat Triturar ou picar forragem para que os animais comam 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Ninguém faz” ou “Não sabe”, não pode seleccionar outra opção	
sc6_3_4_8	Transport of milk to the cooperative Transporte do leite para a cooperativa 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Ninguém faz” ou “Não sabe”,	

	6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	não pode selecionar outra opção	
sc6_3_4_9	Take the animals for grazing and water points Levar os animais a pastar e pontos de água 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_10	Estrus detection Detecção do cio 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_11	Cleaning of milking devices Limpeza de equipamento de mungição 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”,	

	-99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	não pode selecionar outra opção	
sc6_3_4_12	Recordkeeping Fazer os registros 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_3_4_13	Receive money from the milk cooperative Receber o dinheiro da cooperativa de leite 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
	Who makes the final decision on the following activities? Quem toma a decisão final sobre as seguintes atividades?	*Ask if sc1_1_0 = 1 *Read out all options * Leia alto todas as opções	
sc6_5_1	Allocation of milk sales revenues Alocação de receita de vendas de leite 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”,	

	6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	não pode selecionar outra opção	
sc6_5_2	Distribution of dairy activities (lawn mowing, Kraal cleaning, feeding of animals) Distribuição de atividades leiteiras (triturar o capim, limpeza do curral, alimentar os animais) 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione tudo que se aplica *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_5_3	Buying a Cow Comprar uma vaca 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_5_4	Purchases of products or equipment Aquisição de produtos ou equipamentos 1 Adult household man Homem adulto da AF 2 Adult household woman Mulher adulta do AF doméstico 3 Boys Rapazes	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis. *If “Nobody does” or “Do not know” is selected make sure	

	4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_5_5	Distribution of household activities Distribuição de atividades domésticas 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis. *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	
sc6_5_6	How to use crop revenues Como usar as receitas das colheitas 1 Adult household man Homem adulto do AF 2 Adult household woman Mulher adulta do AF 3 Boys Rapazes 4 Girls Meninas 5 Paid worker trabalhador renumerado 6 Nobody does/Activity not performed Ninguém faz / atividade não executada -99 Do not know/refuse to answer -99 Não sabe / se recusa a responder	*Ask if sc1_1_0 = 1 *Select all that apply *Selecione todas as opções aplicáveis. *If “Nobody does” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Ninguém faz” ou “Não sabe”, não pode selecionar outra opção	

SECTION 9: FINANCE AND INVESTMENTS

[Transition]: Enumerator: Now we would like to ask about your finance and investments.

Inquiridor: Agora gostaríamos de perguntar sobre suas finanças e investimentos.

VARIABLES	FINANCE AND INVESTMENTS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
sc8_1	Has your household made any investment in the milk business in the last 12 months (February 1, 2020 – January 31, 2021)? O seu agregado familiar fez algum investimento no negócio de leite nos últimos 12 meses (1 de Fevereiro de 2020 – 31 de Janeiro de 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção	INDICATOR: #24
sc8_1_1	What investments did you make? Que investimentos fez? 1 Build/maintain infrastructure for cattle Construir / manter infraestrutura para o gado 2 Purchase/maintain new equipment or machinery Compra / manutenção de novos equipamentos ou máquinas 3 Purchase cattle Compra de gado 4 Purchase different livestock (other than cattle) Compra de animais diferentes (que não bovinos) 5 Purchase feed/veterinary care or other such inputs Compra de ração / cuidados veterinários ou outros insumos 6 Paying off other debts Pagar outras dívidas 7 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa responder	*Ask if sc8_1 = 1 *Select all that apply *Selecione tudo que se aplica *If “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Não sabe”, não pode selecionar outra opção	
sc8_1_2	How much money did you invest in this (these)? Quanto dinheiro investiu nisto?	*Enter -99 if Do not know/refuse to answer *Digite -99 se Não sabe / recusa-se a responder	INDICATOR: #1

		*Ask if sc8_1 = 1 *Enter in Metical *Insira em Meticais	
sc8_1_3	What was the source of funding? Qual foi a fonte do financiamento? 1 Self / auto financing auto financiamento 2 Informal family, neighbors, friends informal (família, vizinhos, amigos) 3 Formal loan (bank) Empréstimo formal (banco) 4 MERCADO Grant/Award Doação do projecto MERCADO 5 VSLA VSLA 6 Other Grant / Award Outro doação -99 Do not know/refuse to answer Não sabe / recusa responder	*Select all that apply *Selecione todas as opções aplicáveis.*Ask if sc8_1 = 1 *If “Do not know” is selected make sure no other option is selected *Assegure que se seleccionou “Não sabe”, não pode seleccionar outra opção	

SECTION 10: EXPERIENCE WITH MERCADO

[Transition]: Enumerator: Thank you! I want to ask you about how you think your dairying has changed based on your involvement in the MERCADO project.

Inquiridor: Muito obrigado! Eu quero perguntar-lhe como pensa que o seu negócio do leite alterou como resultado do seu envolvimento no projeto MERCADO.

VARIABLES	EXPERIENCE WITH MERCADO	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Sc10_3_1	Based on your experience with MERCADO, how has your milk production per cow changed, if at all? Com base na sua experiência com o MERCADO, como é que a sua produção de leite por vaca mudou? 1 Increased aumentou 2 Stayed the same ficou na mesma 3 Decreased diminuiu -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if sc10_1 = 1 *Select only one option *Selecione apenas uma opção	
Sc10_3_2	Based on your experience with MERCADO, how has your total income from dairy production changed, if at all? Com base na sua experiência com o MERCADO, como alterou a sua receita total relativa à produção de leite? 1 Increased aumentou 2 Stayed the same ficou na mesma 3 Decreased diminuiu -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
Sc10_3_3	Based on your experience with MERCADO, how has your access to information changed, if at all? Com base na sua experiência com o MERCADO, como mudou o seu acesso à informação? 1 Increased aumentou 2 Stayed the same ficou na mesma 3 Decreased diminuiu	*Explain – information could mean information about market prices, information about diseases, inputs etc. *Explique: informações podem significar informações sobre preços de Mercado, doenças, insumos, etc. *Select only one option *Selecione apenas uma opção	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Sc10_3_4	Based on your experience with MERCADO, how has your access to buyers changed, if at all? Com base na sua experiência com o MERCADO, como alterou o seu acesso aos compradores? 1 Increased aumentou 2 Stayed the same ficou na mesma 3 Decreased diminuiu -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção	
Sc10_3_5	Based on your experience with MERCADO, how has your access to dairy inputs changed, if at all? Com base na sua experiência com o MERCADO, como alterou o seu acesso aos insumos para a produção de leite? 1 Increased aumentou 2 Stayed the same ficou na mesma 3 Decreased diminuiu -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *Explain: dairy inputs can include food and feed supplements, medicines, veterinary care etc. *Explique: insumos para o gado leite incluem alimentos e suplementos, medicamentos, assistência veterinária, etc.	
sc10_4_1	Based on your experience with MERCADO, how has the way you house your cows changed, if at all? Com base na sua experiência com o MERCADO, como mudou a forma como acomoda as suas vacas? 1 Feeder/food receptacle in the kraal alimentador / comedouro no curral 2 Water cooler/water receptacle in the kraal Recipiente para água / bebedouro no curral 3 Sheet cover to give shade in the kraal cobertura para dar sombra ao curral 4 Cement in the milking area in the kraal Cimento na área de ordenha do curral 5 A dry ground in the kraal Curral com chão seco 6 Other, please specify Outros especifique	*Select all that apply *Selecione todas as opções aplicáveis. *If “No change” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Sem alterações” ou “Não sabe”, não pode selecionar outra opção	

	7 No change/stayed the same Sem alterações/ficou na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
sc10_4_2	Based on your experience with MERCADO, how has the way you breed your dairy cows changed? Com base na sua experiência com o MERCADO, como é que o método de reprodução das suas vacas leiteiras alterou? 1 Use artificial insemination more Usar mais inseminação artificial 2 Use natural breeding more Usar mais a monta natural 3 Other, please specify Outro, por favor especifique 4 No change/stayed the same Nenhuma mudança / ficou na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option *Selecione apenas uma opção *If “No change” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Nenhuma mudança” ou “Não sabe”, não pode selecionar outra opção	
sc10_4_3	Based on your experience with MERCADO, how has the way you feed your cows changed? Com base na sua experiência com o MERCADO, como mudou o modo de alimentar as suas vacas? 1 Use zero grazing land more Usa mais terreno para zero-grazing 2 Use supplements more Use mais suplementos 3 Use fodder/forage more Use mais forragem 4 Other, please specify Outro, por favor especifique 5 No change/stayed the same Nenhuma mudança / ficou na mesma -99 Do not know/refuse to answer Não sabe / recusa responder	*Select all that apply *Selecione tudo que se aplica *If “No change” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Nenhuma mudança” ou “Não sabe”, não pode selecionar outra opção *Explain: Improved feeding means use of zero grazing and use of supplements & fodder/forage *Explique: Alimentação melhorada significa usar o zero grazing e suplementos/ração e forragem	
sc10_4_4	Based on your experience with MERCADO, how has your use of water changed? Com base na sua experiência com o MERCADO, como mudou o seu uso de água?	*Select all that apply *Selecione tudo que se aplica	

	1 Started providing cattle continuous access to water 1 Começou a fornecer acesso contínuo à água ao gado 2 Started bringing more water to cattle Começou a trazer mais água para o gado 3 Other, please specify Outro, por favor especifique 4 No change/stayed the same Nenhuma mudança / ficou na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*If “No change” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Nenhuma mudança” ou “Não sabe”, não pode selecionar outra opção	
sc10_4_5	Based on your experience with MERCADO, how has your use of animal health services changed? Com base na sua experiência com o MERCADO, como mudou a utilização de serviços de saúde animal? 1 Started weekly tick treatments Começou a fazer tratamentos semanais de carraças 2 Started vaccinating cattle Começou a vacinar o gado 3 No change/stayed the same Nenhuma mudança / ficou na mesma -99 Do not know/refuse to answer Não sabe / recusa responder	*Select all that apply *Selecione tudo que se aplica *If “No change” or “Do not know” is selected make sure no other option is selected *Assegure que se selecionou “Nenhuma mudança” ou “Não sabe”, não pode selecionar outra opção	

SECTION 11: CONCLUSION

[Transition]: Enumerator: Thank you for your responses up to now. We have a few remaining questions.

Inquiridor: Muito obrigado pelas suas respostas até agora. Temos ainda poucas questões para colocar

VARIABLES	CONCLUSION	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Sc11_1	Can we visit the Kraal? Podemos visitar o curral? 1 Yes Sim 2 No Não	*Select only one option *Selecione apenas uma opção *If sc11_1=2, go to sc11_3	
[Enumerator Instruction]: Ask sc11_2_1 to sc11_2_7 if sc11_1 = 1, else skip to sc11_3			
Sc11_2_1	Accumulation of manure Acumulação de estrume 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção	
Sc11_2_2	Existence of coverage Existência de cobertura 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção	
Sc11_2_3	Ventilation Ventilação 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção	
Sc11_2_4	Cement area in milking area Área de cimento na área de ordenha 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção	

Sc11_2_5	Clean zone and freshwater ad libidum Zona limpa e água ad libidum 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa se a responder	*Select only one option *Selecione apenas uma opção	
Sc11_2_6	Existence of receptors for fodder Existência de comedouros para forragem 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção	
Sc11_2_7	Dry floor Chão seco 1 Yes Sim 2 No Não -99 Do not know/refuse to answer 99 Não sabe / recusa responder	*Select only one option *Selecione apenas uma opção	
Sc11_3	It may be that in the coming days, you will receive a call to check out some of the answers you gave. This is part of our survey quality process. Are you willing to receive a short call for this purpose? Pode ser que nos próximos dias receba uma chamada para verificar algumas das respostas que deu. Isso faz parte do nosso da pesquisa sobre a qualidade do processo. Você está disposto a receber uma chamada curta para este propósito? 1 Yes sim 2 No Nao	*Select only one option *Selecione apenas uma opção	

[Transition]: Thank you very much!

Inquiridor: Muito obrigado!

MERCADO FINAL EVALUATION SEMI-STRUCTURED INTERVIEW PROTOCOLS

Aggregation & Value Addition Facilities (Cooperatives) Semi-Structured Survey

Interviewer name Nome do entrevistador	
Interview date Data da entrevista	
Interview time Hora da Entrevista	
Cooperative/ Aggregation Name name Nome da Cooperativa/entidade e agregadora	
Respondent name Nome do entrevistado	
Respondent position/title Cargo/título do entrevistado	
Respondent gender Sexo do entrevistado	1 Male 2 Female 1 Masculino 2 Feminino
Contact information Informações de contacto	
GPS coordinates: latitude Coordenadas GPS: latitude	
GPS coordinates: longitude Coordenadas GPS: longitude	
Province: Província	1 Manica 2 Sofala
District: Distrito	
Community: comunidade	
INTRODUCTION: INTRODUÇÃO:	

Thank you for taking the time today to meet with me/us. I work for IMPAQ International, a US-based research company. Joining me is _____, who works for _____. Land O'Lakes International Development (Land O'Lakes) has contracted IMPAQ International to collect data for an evaluation of the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project.

Obrigado por poder falar comigo /conosco. Eu trabalho para a IMPAQ International, uma empresa de pesquisa sediada nos EUA. Comigo está o _____, que trabalha para _____. A Land O'Lakes International Development (Land O'Lakes) contratou a IMPAQ Internacional para recolher dados para uma avaliação do projecto de Expansão do Gado e das Oportunidades Leiteiras em Moçambique (também conhecido por MERCADO).

Present letter of introduction. Apresenta a carta de introdução

Our goal is to capture a wide range of viewpoints that can usefully inform Land O'Lakes dairy activities in Mozambique. Your answers will be kept confidential and will not be used for any purpose other in a report that will help inform the dairy project being implemented by Land O'Lakes.

The interview should last about an hour. Participation is voluntary and you can choose not to take part. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer. Land O'Lakes would like you to feel free to be open and honest in your responses. Knowing the true situation in your dairy aggregation activities will help them provide better support to you in the future. There are no penalties to you for not participating or not answering a question. Neither your participation nor your responses will affect your ability to receive Land O'Lakes assistance now or in the future.

O nosso objetivo é captar uma ampla gama de pontos de vista que podem, duma forma útil, informar as atividades da Land O'Lakes em Moçambique. As suas respostas serão mantidas em sigilo e não serão usadas para nenhum outro propósito além de um relatório que ajudará a informar o projecto de leite que está a ser implementado pela Land O'Lakes.

A entrevista deverá durar cerca de uma hora. A participação é voluntária e você pode optar por não participar. Você também pode optar por recusar-se a responder a quaisquer perguntas com as quais não se sente à vontade ou que não queira responder. A Land O'Lakes gostaria que você se sentisse livre para ser aberto e honesto nas suas respostas. Conhecer a verdadeira situação das suas atividades de agregação de leite ajudará a Land O'Lakes a lhe prestar melhor apoio no futuro. Não estará sujeito a penalizações por não participar ou não responder a uma pergunta. Nem a sua participação nem as suas respostas afectarão o seu acesso à assistência da Land O'Lakes agora ou no futuro.

Before we begin, do you have any questions about the purpose of the evaluation or what will happen to the information?

Antes de começarmos, tem alguma dúvida sobre o propósito da avaliação ou o que acontecerá com a informação?

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer

comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Permission Question: Pedido de permissão:

If it's ok, I would like to audio record the interview for note-taking accuracy. The only people who will have access to the recordings and interview notes are project researchers, who have taken a strict oath of confidentiality. *Se não tiver nenhum problema, gostaria de gravar a entrevista em áudio para garantir a precisão na anotação. As únicas pessoas que terão acesso às gravações e notas da entrevista são os pesquisadores do projecto, que fizeram um rigoroso juramento de confidencialidade.*

Do I have your permission to conduct this interview? <i>tenho a sua permissão para fazer esta entrevista?</i>	Yes <i>Sim</i>	No <i>Não</i>
Do I have your permission to record this interview? <i>tenho permissão para gravar a entrevista?</i>	Yes <i>Sim</i>	No <i>Não</i>

If at any point you want me to turn off the tape recorder, please let me know and I'll be happy to comply *Se em algum momento quiser que eu desligue o gravador, por favor diga que terei o prazer de desligar*

SECTION 0: BACKGROUND ON COOPERATIVE AND ENGAGEMENT WITH MERCADO

[Transition]: Enumerator: First, we would like to talk to you about your cooperative and your engagement with the MERCADO project *Inquiridor: Primeiro, gostaríamos de conversar consigo sobre a sua cooperativa e a sua participação no projecto MERCADO*

Co_back1	Please provide a brief background on the cooperative/milk collection center <i>Por favor, faça uma breve descrição histórica sobre a cooperativa/centro de recolha de leite</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i> - Year of inception <i>O ano de criação</i> - Motivation for start-up <i>A motivação para a criação da cooperativa</i>		
Co_back2	When and how did you begin work with the MERCADO project? <i>Quando e como começaram a trabalhar com o projecto MERCADO?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i> - Year began work with MERCADO project <i>Em que ano começou a trabalhar com o projecto MERCADO</i> - Motivation for work with MERCADO project <i>Qual foi a motivação para trabalhar com o projecto MERCADO</i> - Major evolutions in nature or scale of engagement with MERCADO <i>Principais desenvolvimentos quer na natureza quer no nível de participação no projecto MERCADO</i>		
Co_train1	What types of training has your cooperative/MCC business received in the last 12 months (February 1, 2020 – January 31, 2021) from any source? <i>Que tipo de treinamento a sua Cooperativa/Centro de Recolha de Leite recebeu nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? De qualquer fonte.</i> 0 No training <i>Nenhum treinamento</i> 1 Milk handling <i>manejo do leite</i> 2 Milk processing <i>processamento de leite</i>	*Select all that apply <i>Selecione todas as opções que se aplicam</i> *Ensure that if “No training” or “Do not know” are chosen, no other option is	Indicators: #36, #37, #38, #39, #40, #42, #43

	3 Milk storage and cooling Armazenamento e refrigeração de leite 4 Food safety training Treinamento em segurança de alimentos 5 Milk testing training Treinamento em testagem de leite 6 Business operations/Financial management Operações comerciais / gestão financeira 7 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe /recusa-se a responder	chosen Assegure que se for escolhido “Nenhum treinamento” ou “Não sabe”, nenhuma outra opção é escolhida	
Co_train1_1	What types of training did your cooperative/MCC business received from any source from July 2019 to February 2020? Que tipo de treinamento a sua Cooperativa/Centro de Recolha de Leite recebeu de Julho 2019 a Fevereiro 2020? De qualquer fonte. 0 No training Nenhum treinamento 1 Milk handling manejo do leite 2 Milk processing processamento de leite 3 Milk storage and cooling Armazenamento e refrigeração de leite 4 Food safety training Treinamento em segurança de alimentos 5 Milk testing training Treinamento em testagem de leite 6 Business operations/Financial management Operações comerciais / gestão financeira 7 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Ensure that if “No training” or “Do not know” are chosen, no other option is chosen Assegure que se for escolhido “Nenhum treinamento” ou “Não sabe”, nenhuma outra opção é escolhida	Indicators: #36, #37, #38, #39, #40, #42, #43
Co_train2	From whom did your business receive this training in the last 12 months (February 1, 2020 – January 31, 2021)? De quem a cooperativa/MCC recebeu este treinamento nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Government agencies (national, state, local) Agências governamentais (nacional, provincial, distrital) 2 Non-governmental organizations Organizações não governamentais 3 Land O’ Lakes Land O 'Lakes 4 Other private companies Outras empresas privadas 5 Input suppliers fornecedores de insumos 6 Business development service providers provedores de serviços de desenvolvimento de negócios 7 Own staff Pessoal próprio 8 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_train1 = 1 -7 Faça esta pergunta se if co_train1 = 1 -7 *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen Assegure que se for escolhida a opção “Não sabe”, nenhuma outra opção é escolhida	

Co_train3	Thinking specifically about the training you've participated in from Land O'Lakes in the last 12 months, what were the training topics? What were your key learnings? Is there anything that you especially liked about this training? Are there any areas where you need more support? Pensando especificamente no treinamento em que participou dado pela Land O'Lakes nos últimos 12 meses, quais foram os tópicos deste treinamento? Quais foram os aspectos chave que aprendeu? Existe alguma coisa que tenha gostado duma forma particular deste treinamento? Existem áreas onde precisa de mais apoio? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co-train2 = 3 Faça esta pergunta se co-train2 = 3	

SECTION 1: RECORD KEEPING

[Transition]: Enumerator: Thank you! Now we want to ask you about the records you keep for your business **Inquiridor: Obrigado! Agora gostaríamos de lhe perguntar sobre os registros que faz sobre o seu negócio**

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_record	Did your business keep any kinds of records or logs in the last 12 months (February 1, 2020 – January 31, 2021)? O seu negócio fez algum tipo de registros nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse Não sabe /recusa-se a responder	*Select only one option *Selecione apenas uma opção	Indicators: #37; #18
Co_record1	Why do you or don't you keep any kinds of records or logs for your business? Porquê faz ou não faz algum tipo de registo do seu negócio? <i>*Please describe (open-ended) Por favor descreva (pergunta aberta)</i>		
Co_record2	What types of records did you keep in the last 12 months (February 1, 2020 – January 31, 2021)? Que tipo de registros fez nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Income and expense ledger Registos de receita e despesas	*Ask if co_record = 1 Faça esta pergunta se co_record = 1 *Select all that apply Selecione todas as opções que se aplicam *Prompt with options Apresente as opções	Indicator: #18

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	2 Production ledgers (<i>tracks inputs vs outputs</i>) <i>Registos de produção (monitorar entradas e saídas)</i> 3 Labor <i>força de trabalho</i> 4 Equipment <i>equipamento</i> 5 Long range budgeting <i>orçamento de longo prazo</i> 6 rejections of incoming milk <i>rejeições de leite recebido</i> 7 Rejections of outgoing milk <i>rejeições de leite vendido</i> 8 Monthly cash flow statement <i>relatório de fluxo de caixa mensal</i> 9 Milk collection from suppliers <i>leite recolhido dos fornecedores</i> 10 Milk sales <i>vendas de leite</i> 11 Other, specify _____ <i>Outros, especifique</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>		
Co_record3	Did you start or change the way to keep records as a result of any training you received? If so, what training? How did it change? <i>Teráomeçado ou mudado a forma de fazer registos como resultado de algum treinamento que recebeu? Se sim, que treinamento? Como é que mudou?</i> <i>Please describe (open-ended) Por favor descreva (pergunta aberta)</i>	*Ask if co_train1 = 6 Faça esta pergunta se co_train1 = 6	
[Transition]: Enumerator: We want to really understand the revenues and costs of your cooperative to understand how your business is doing. In order to do this, we need to ask you specific questions about your costs and revenues over the last year. If you have a monthly cash flow statement from last year (February 1, 2020 – January 31, 2021), it would be helpful if you get out the copy of your monthly cash flow statement so that we can talk about exact values. If not, then please try to provide accurate values. <i>Inquiridor: Gostaríamos de compreender bem os rendimentos e os custos (despesas) da vossa cooperativa, para entendermos o desempenho do vosso negócio. Para tal, precisamos de fazer perguntas específicas a cerca dos vossos custos e das receitas ao longo do último ano. Seria muito útil se pudessem nos mostrar as cópias dos relatórios mensais de fluxo de caixa do último ano (1 de Fevereiro 2020 a 31 de Janeiro 2021) para podermos falar de valores exactos. Se não têm os relatórios, então, por favor, tente fornecer valores acurados.</i>			

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_cash2	Is it possible to provide a copy or picture of the monthly cash flow statement from last year (February 1, 2020 – January 31, 2021)? <i>É possível ter cópias ou imagem dos relatórios de fluxo de caixa mensais do último ano (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Ask if co_record2 = 8 <i>Faca esta pergunta se co_record2 = 8</i> *Select only one option <i>*selecione apenas uma opção</i> *Take a picture of the cash flow statement <i>*tire uma fotografia dos relatórios do fluxo de caixa de co_cash2=1</i>	Indicator: #18
[Enumerator Instruction]: If “co_cash2 = 1” then fill the following questions using the monthly cash flow statement, else ask the respondent and the fill. If the cashflow statement does not have information for any particular question, or if the information is incomplete, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as ‘Do not know’ before asking the respondent the question. <i>Se a resposta é sim, então preencha as seguintes questões usando o relatório fluxo de caixa mensal. Se for não, pergunte ao entrevistado e preencha. Se o relatório do fluxo de caixa não tem informação de alguma questão particular ou informação incompleta, peça ao entrevistado para tentar recordar-se ou estime a resposta. Não deixe a pergunta em branco ou codificada como “Não sabe” antes de perguntar ao entrevistado.</i>			
Co_othercost_record1	Does the cash flow statement have information on cost of utilities? <i>O relatório de fluxo de caixa tem informação dos custos operacionais?</i> 1 Yes <i>sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Ask if co_record2 = 8 <i>Faça esta pergunta se co_record2 = 8</i> *Select only one option <i>selecione apenas uma opção</i> *Explain that utilities include costs for fuel, electricity and water, among others <i>Explique que os custos operacionais incluem custos de combustível, eletricidade e água, entre outras.</i>	
Co_othercost1	What was the average monthly cost of utilities for your business over the last 12 months (February 1, 2020 – January 31, 2021)? <i>Qual foi o custo médio mensal dos custos operacionais para o vosso negócio nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i>	*If co_othercost_record1 = 1 then fill from record book, else ask respondent and fill out <i>Preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha</i> *Ensure average monthly price in last 12 months is quoted <i>*Assegure que é</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		quotado o preço médio mensal nos últimos 12 meses *Explain that utilities include costs for fuel, electricity and water, among others Explique que os custos operacionais incluem custos de combustível, eletricidade e água, entre outros. *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não feita *Enter in Metical *Insira em Meticais	
Co_othercost_record2	Does the cash flow statement have information on rental costs of land/buildings/machinery? O relatório de fluxo de caixa tem informações do custo do aluguer de terrenos/ instalações/ maquinaria? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_record2 = 8 Faça esta pergunta se co_record2 = 8 *Select only one option selecione apenas uma opção	
Co_othercost2	What was the average monthly rental cost of lands and buildings in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo médio mensal do aluguer de terrenos e instalações nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If co_othercost_record2 = 1 then fill from record book, else ask respondent and fill out Se co_othercost_record2 = 1, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha *Ensure average monthly price in last 12 months is quoted *Assegure que é quotado o preço médio mensal nos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se a responder	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*Enter 0 if this expense was not incurred *Digite 0 se a despesa não feita *Enter in Metical *Insira em Meticais	
Co_othercost3	What was the average monthly rental cost of machinery, vehicles and equipment (including storage equipment) in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo médio mensal do alugar máquinas, veículos e equipamento (incluindo equipamento de armazenamento) nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If co_othercost_record2 = 1 then fill from record book, else ask respondent and fill out Se co_othercost_record2 = 1, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha *Ensure average monthly price in last 12 months is quoted *Assegure que é quotado o preço médio mensal nos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não feita *Enter in Metical *Insira em Meticais *Explain: this could include milk testing equipment *Explique: isto pode incluir os equipamentos de testagem do leite	
Co_othercost_record3	Does the cash flow statement have information on maintenance and repair costs? O relatório do fluxo de caixa tem informação sobre os custos de manutenção e reparação? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_record2 = 8 Faça esta pergunta se co_record2 = 8 *Select only one option selecione apenas uma opção	
Co_othercost4	What was the total cost of maintenance and repair in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total de manutenção e reparação nos últimos	*If co_othercost_record3 = 1 then fill from record book, else ask respondent and fill out	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	Se co_othercost_record3 = 1, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha *Ensure total cost in last 12 months is quoted *Assegure que é quotado o custo total dos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não feita *Enter in Metical *Insira em Meticais	
Co_othercost_record4	Does the cash flow statement have information on cost of consumables, including milk utensils, office consumables and other consumables? O relatório do fluxo de caixa tem informação do custo de consumíveis, incluindo utensílios para leite, consumíveis de escritório e outros? 1 Yes Sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_record2 = 8 Faça esta pergunta se co_record2 = 8 *Select only one option selecione apenas uma opção	
Co_othercost5	What was the total cost of consumables including milk utensils, milk quality testing consumables, office consumables, any consumables you provide to your members and other consumables, in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total de consumíveis, incluindo utensílios de leite, consumíveis para os testes de qualidade do leite, consumíveis de escritório, outros consumíveis que fornecem aos membros e outros consumíveis diversos, nos últimos 12	*If co_othercost_record4 = 1 then fill from record book, else ask respondent and fill out Se co_othercost_record4 = 1, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha *Ensure total cost in last 12 months is quoted *Assegure que é quotado o custo total dos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não feita *Enter in Metical *Insira em Meticais *Explain: this could include costs for milk utensils *Explique: estes consumíveis incluem os custos dos utensílios de leite	
Co_othercost_record6	Does the cash flow statement have information on your business transportation costs (i.e. fuel, taxis, etc.)? O relatório do fluxo de caixa tem informação sobre o custo de transportes (ex. combustíveis, impostos, etc.) no seu negócio? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_record2 = 8 Faça esta pergunta se co_record2 = 8 *Select only one option selecione apenas uma opção	
[Enumerator Instruction] : If co_othercost_record6 = 1, then for questions co_othercost7 – co_othercost8, fill from the record book ; else ask respondent and then fill out Se co_othercost_record6 = 1, então para as perguntas co_othercost7 – co_othercost8, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e depois preencha. If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as ‘Do not know’ before asking the respondent the question. Se o livro de registos não tem esta informação, peça ao entrevistado para tentar recordar-se ou estimar a resposta. Não deixe a pergunta em branco ou codificada como “Não sabe” antes de perguntar ao entrevistado.			
Co_othercost7	What is the average monthly cost of transportation for your business in the last rainy season (November 2019 through April 2020)? Qual foi o custo médio mensal de transporte no seu negócio na última época chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer and “0” if no costs incurred *Digite -99 se o entrevistado não sabe ou recusa-se a responder e “0” se a despesa não foi feita	
Co_othercost8	What is the average monthly cost of transportation for your business in the last dry season (May through October 2020)? Qual é o custo médio mensal de transporte no seu negócio na última época seca (Maio a Outubro de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se responder	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_othercost9_1	Other than staff costs and milk purchase costs, that we will touch on later, what other costs of production in the last 12 months have we not included in the previous questions? ? Sem contar com os custos do pessoal e da compra do leite, que serão abordados mais tarde, quais foram os outros custos de produção nos últimos 12 meses, que não foram incluídos nas perguntas anteriores? <i>*Please describe (open-ended) Por favor descreva (pergunta aberta)</i>		
Co_othercost9_2	Does the cash flow statement have information on these other costs? O relatório do fluxo de caixa tem informação desses outros custos? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if co_record2 = 8 Faça esta pergunta se co_record2 = 8 *Select only one option selecione apenas uma opção	
Co_othercost9_3	Which other costs does the cash flow have information about? Que outros custos o relatório do fluxo de caixa tem? <i>*Please describe (open-ended) Por favor descreva (pergunta aberta)</i>	*Ask if co_othercost9_2 = 1 Faça esta pergunta se co_othercost9_2 = 1	
Co_othercost9_4	What were the other total costs of production that we have not included in the last 12 months (February 1, 2020 – January 31, 2021)? Quais foram os outros custos totais de produção que não incluímos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se responder	

SECTION 2: PROCUREMENT AND SALES

[Transition] Enumerator: Thank you! Now we want to talk to you about your procurement and sales of milk. **Inquiridor: Obrigado! Agora gostaríamos de falar acerca das suas compras e vendas de leite**

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_procure_0	Did you collect milk from suppliers in the past 12 months between February 1, 2020 – January 31, 2021? Recolheram leite de fornecedores nos últimos 12 meses, entre 1 de Fevereiro 2020 e 31 de Janeiro 2021? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção	
Co_procure_0_1	Why did you not collect milk from suppliers in the past 12 months between February 1, 2020 – January 31, 2021? Porquê não recolheram leite de fornecedores nos últimos 12 meses, entre 1 de Fevereiro 2020 e 31 de Janeiro 2021? <i>*Please describe (open-ended) Por favor descreva (pergunta aberta)</i>	*Ask if co_procure_0 = 2 or -99. Then thank respondent and end the interview * Faça esta pergunta se co_procure_0 = 2 or -99. Depois agradeça ao entrevistado e termine a entrevista	
[Transition] Enumerator: Let's first talk about your procurement of milk Inquiridor: vamos falar primeiro das suas compras de leite [Instruction] Enumerator: Ask the remaining questions in this section if co_procure_0 = 1 Inquiridor: Faça as restantes questões nesta secção se co_procure_0 = 1 If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as 'Do not know' before asking the respondent the question. Se o livro de registos não tem esta informação, peça ao entrevistado para tentar recordar-se ou estimar a resposta. Não deixe a pergunta em branco ou codificada como "Não sabe" antes de perguntar ao entrevistado.			
Co_procure_record 1	Does the record book have information on milk procurement? O vosso livro de registos, tem informação sobre as compras de leite? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if co_record2 = 9 Faça esta pergunta se co_record2 = 9	
Co_procure_1	How many suppliers regularly supplied the business during the dry season (May through October 2020)? Quantos fornecedores forneceram regularmente durante a época seca (Maio a Outubro 2020)?	*If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando livro de registo, caso contrário,	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		pergunte ao entrevistado e preencha *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_1a	How many of these suppliers were women farmers or businesses owned by women? Quantos destes fornecedores são mulheres produtoras ou negócios cujas proprietárias são mulheree?	*Enter number>=0 *Insira um número maior ou igual a 0	
Co_procure_2	How many suppliers regularly supplied the business during the rainy season (November 2019 through April 2020)? Quantos fornecedores forneceram regularmente durante a época chuvosa (Novembro 2019 a Abril 2020)?	*Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usandoo livro de registo, caso contrário, pergunte ao entrevistado e preencha	
Co_procure_2a	How many of these suppliers were women farmers or businesses owned by women? Quantos destes fornecedores são mulheres produtoras ou negócios cujos proprietárias são mulheres?	*Enter number>=0 *Insira um número maior ou igual a 0	
Co_procure_3	What volume of milk did the business procured from suppliers in the last dry season (May through October 2020)? Qual foi o volume de leite que a cooperativa/MCCcomprou de produtores na última época seca (Maio a Outubro de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se responder *If co_procure_record1 = 1 then fill from record book, else ask the respondent and fill out Se co_procure_record1 = 1, preencha usandoo livro de registo, caso	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		contrário, pergunte ao entrevistado e preencha	
Co_procure_4	What was the average price paid to suppliers per liter of milk, in the last dry season (May through October 2020)? Qual foi o preço médio pago aos produtores por litro de leite, na última época seca (Maio a Outubro de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando o livro de registo, caso contrário, pergunte ao entrevistado e preencha	
Co_procure_5	What is the total value of milk procured from suppliers, in the last dry season (May through October 2020)? Qual foi o valor total do leite comprado aos produtores, na última época seca (Maio a Outubro de 2020)? <i>Please answer the total value over all the months of the dry season and not a monthly total Por favor considere o valor total de todos os meses da época seca e não o total mensal</i> Volume * Price = Value = _____ Volume*Preço = Valor = _____	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando o livro de registo, caso contrário, pergunte ao entrevistado e preencha *Check to ensure the total value is the product of co_procure_3 and co_procure_4 *Verifique para assegurar que o valor total é a multiplicação do co_procure_3 e co_procure_4	Indicator: #1
Co_procure_6	What volume of milk has the business procured from suppliers in the last rainy season (November 2019 through April 2020)? Qual foi o volume de leite que a cooperativa/MCC	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	comprou de produtores , na última época chuvosa (Novembro 2019 a Abril de 2020)?	*Digite -99 se não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask the respondent and fill out Se co_procure_record1 = 1, preencha usando o livro de registo, caso contrário, pergunte ao entrevistado e preencha	
Co_procure_7	What was the average price paid to suppliers per liter of milk in the rainy season (November 2019 through April 2020)? Qual foi o preço médio pago aos produtores por litro de leite na última época chuvosa (Novembro 2019 a Abril de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando o livro de registo, caso contrário, pergunte ao entrevistado e preencha	
Co_procure_8	What is the total value of milk procured from suppliers, in the last rainy season (November 2019 through April 2020)? Qual foi o valor total do leite comprado aos produtores na última época chuvosa (Novembro de 2019 a Abril de 2020)? <i>Please answer the total value over all the months of the rainy season and not a monthly total Por favor considere o valor total de todos os meses da época chuvosa e não o total mensal</i> <i>Volume * Price = Value = _____</i> <i>Volume*Preço = Valor = _____</i>	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando o livro de registo, caso contrário, pergunte ao entrevistado e preencha *Check to ensure the total value is the product of co_procure_6 and co_procure_7 *Verifique	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		para assegurar que o valor total é a multiplicação do co_procure_6 e co_procure_7	
Co_procure_9	Does the business have any formal agreement with any of your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? A cooperativa/MCC teve algum contrato formal com qualquer um dos seus fornecedores de leite/produtores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção	Indicator: #23
Co_procure_9_1	How many agreements did you have with your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos contratos teve com os seus fornecedores de leite/produtores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_procure_9 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If co_procure_record1 = 1 then fill from record book, else ask respondent and fill out Se co_procure_record1 = 1, preencha usando livro de registo, caso contrário, pergunte ao entrevistado e preencha	Indicator: #23
Co_procure_9_1_1	Can you describe these agreements? Pode descrever esses contratos? Please describe (open-ended) Por favor descreva (pergunta aberta)	*Ask if co_procure_9 = 1 Faça esta pergunta se co_procure_9 = 1	
Co_procure_9_1_1a	How many agreements were with women milk suppliers? Quantos contratos foram firmados com mulheres fornecedoras de leite/produtores?	*Enter number >= 0 *Insira um número maior ou igual a 0	
Co_procure_9_2	Did you provide any support services to your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? Prestou algum	*Select only one option selecione apenas uma opção	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	serviço de apoio aos seus fornecedores de leite/produtores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Explain: Services could include training, technical support, transport services etc. *Explique: Serviços podem incluir treinamento, apoio técnico, serviços de transporte, etc.	
Co_procure_9_2a	Please list the types of support services you offered: Por favor liste os tipos de serviços de apoio que ofereceu: 1 Sold supplemental fodder to farmers Vendeu suplementos forrageiros aos criadores 2 Sold supplemental veterinary medicines to farmers Vendeu medicamentos veterinários aos criadores 3 Trained farmers in animal nutrition and health Treinou produtores em nutrição e saúde animal 4 Trained farmers in milking techniques Treinou produtores em técnicas de ordenha 5 Trained farmers in animal hygiene Treinou produtores em higiene 6 Trained farmers in milk transportation Treinou produtores em transporte de leite 7 Veterinary advice Assessoria veterinária 8 Agronomic assistance Assistência agrícola 9 Business and management services Serviços de negócio e gestão 10 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if co_procure_9_2 = 1 *Enumerator read responses * Inquiridor lê as respostas *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se for escolhida a opção “Não sabe”, nenhuma outra opção é escolhida	
Co_procure_9_2a_o th	Please specify other support service(s) you offered. (open-ended) Por favor, especifique outros serviços de apoio que ofereceu (pergunta aberta)	*Ask if Co_procure_9_2a = 10 Faça esta pergunta se Co_procure_9_2a = 10	
Co_procure_9_2b	Why do you or don't you provide support services to your suppliers? Porquê prestou ou não serviços de apoio aos seus fornecedores/produtores?	*Ask if co_procure_9_2 = 2 Faça esta pergunta se co_procure_9_2 = 2	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>Please describe (open-ended) Por favor descreva (pergunta aberta)</i>		
Co_procure_10	How is the milk transported from your suppliers? <i>Como é que o leite é transportado dos seus fornecedores/produtores até à Coop/MCC?</i> - Suppliers come to our doorstep <i>fornecedores/produtores vêm à nossa porta</i> - Business travels to buy milk from seller <i>A coop/MCC vai ao encontro do produtor para comprar leite</i> - Other, specify <i>Outro, especifique</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Select all that apply <i>Selecione todas as opções que se aplicam</i> *Ensure that if “Do not know” is chosen, no other option is chosen <i>Assegure que se “Não sabe” foi escolhido, nenhuma outra opção é escolhida.</i>	
Co_procure_11	What challenges, if any, does the business face in procurement of milk in the last 12 months (February 1, 2020 – January 31, 2021)? How does this affect the business’ ability to make a profit? <i>Que desafios, se houve algum, o vosso negócio enfrentou na compra do leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Como é que estes desafios afectaram a capacidade do negócio de gerar lucro?</i> <i>Please describe (open-ended) Por favor descreva (pergunta aberta)</i>		
Co_procure_12	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address any milk procurement challenges? What support provided by MERCADO, if any, has been successful? <i>Como é que o vosso negócio tentou resolver esses desafios? O que funcionou e o que não resultou? O projecto MERCADO ajudou de alguma forma a resolver os desafios de aquisição do leite? Que apoio foi dado pelo MERCADO, se algum, que teve sucesso?</i> <i>*Please describe (open-ended) Por favor descreva (pergunta aberta)</i>	*If no challenges, skip question <i>*Se não houve desafio, salte a questão</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_procure_13	What does the business think will be necessary to successfully tackle challenges in milk procurement? <i>O que é que a cooperativa/MCC julga que seria necessário para enfrentar com sucesso esses desafios na compra do leite?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*If no challenges, skip question <i>*Se não houve desafios, salte a questão</i>	
Co_procure_14	Have you seen any changes in milk procurement since your participation in the MERCADO project, if at all? <i>Viu alguma mudança na compra de leite desde que começou a participar no projecto MERCADO?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Permaneceu na mesma</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Select one option <i>selecione uma opção</i> *If co_procure_14 = -99, go to co_procure_16 <i>Se co_procure_14 = -99, salte para co_procure_16</i>	
Co_procure_15	How do you think milk procurement changed because of the MERCADO project? <i>Como julga que a compra de leite mudou devido ao projecto MERCADO?</i> <i>Please describe (open ended) Por favor, descreva (pergunta aberta)</i>		
Co_procure_16b	Have you experienced any impacts on the volume of milk procured from suppliers due to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Enfrentou algum impacto no volume do leite comprador dos seus fornecedores devido à COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select one option <i>selecione uma opção</i> *Enumerator: Please ask the respondent to distinguish between impacts due to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. <i>*Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido à COVID-19 dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		militares, tanto quanto possível.	
Co_procure_17b	How was the volume of milk procured from suppliers been impacted by COVID-19 and associated restrictions in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite comprado aos seus fornecedores foi afectado pela COVID-19 e as restrições associadas, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select one option selecione uma opção *Ask if co_procure_16b=1 Faça a pergunta se co_procure_16b=1 *Enumerator: Please ask the respondent to distinguish between impacts dues to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido à COVID-19 dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades militares, tanto quanto possível.	
Co_procure_18b	How many liters per month did your procurement decrease as a result of COVID-19? Quantos litros por mês decresceu a compra de leite como resultado da COVID-19?	*Ask if co_procure_17b=2 Faça esta pergunta se co_procure_17b=2 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_19b	How was the price paid to suppliers impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como foi afectado o preço pago aos fornecedores devido à COVID-19, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma	*Select one option selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts dues to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. *Inquiridor:	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	-99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	Peça ao entrevistado para distinguir entre os impactos devido à COVID-19 dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades militares, tanto quanto possível.	
Co_procure_20b	How many meticals/liter did the price paid to suppliers decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Quantos meticais por litro, o preço pago aos fornecedores/produtores diminuiu como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i>	*Ask if co_procure_19b=2 <i>Faça esta pergunta se co_procure_19b=2</i> *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe ou recusa-se a responder	
Co_procure_21b	How many meticals/liter did the price paid to suppliers increase as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Quantos meticais por litro, o preço pago aos fornecedores/produtores aumentou como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i>	*Ask if co_procure_19b=1 <i>Faça esta questão se co_procure_19b=1</i> *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_22b	Have you faced other challenges in procurement of milk as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? ? <i>Que outros desafios enfrentou na aquisição de leite como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_procure_16b=1 <i>Faça esta pergunta se co_procure_16b=1</i>	
Co_procure_16a	Are there any lingering impacts on the volume of milk procured from suppliers due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Existem ainda alguns impactos prevaletentes do Ciclone Idai no volume de leite comprado aos seus</i>	*Select one option <i>selecione uma opção</i> *Enumerator: Explain that they should only think about the impact of Cyclone Idai in the last 12	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	fornecedores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	months and not before that. Please also ask them to not consider impacts due to Cyclone Eloise, COVID-19, or military hostilities. <i>*Inquiridor: Explique que eles devem pensar apenas no impacto do Ciclone IDAI nos últimos 12 meses e não antes disso. Peça também que eles não considerem os impactos devido ao Ciclone Eloise, COVID-19 ou hostilidades militares.</i>	
Co_procure_17a	How was the volume of milk procured from suppliers been impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite adquirido dos fornecedores/produtores foi afectado pelo ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	<i>*Select one option selecione uma opção</i> <i>*Ask if co_procure_16a=1 Faça esta pergunta se co_procure_16a=1</i> <i>*Enumerator: Explain that they should only think about the impact of Cyclone Idai in the last 12 months and not before that. Please also ask them to not consider impacts due to Cyclone Eloise, COVID-19, or military hostilities.</i> <i>*Inquiridor: Explique que eles devem pensar apenas no impacto do Ciclone IDAI nos últimos 12 meses e não antes disso. Peça também que eles não considerem os impactos devido ao Ciclone Eloise, COVID-19 ou hostilidades militares.</i>	
Co_procure_18a	How many liters per month did your procurement decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? ? Quantos litros de leite	<i>*Ask if co_procure_17a=2 Faça esta pergunta se co_procure_17a=2</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	diminuíram por mês, nas suas compras devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_19a	How was the price paid to suppliers impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o preço do leite pago aos fornecedores devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select one option selecione uma opção *Ask if co_procure_16a=1 Faça esta pergunta se co_procure_16a=1	
Co_procure_20a	How many meticals/liter did the price paid to suppliers decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro baixou no preço pago ao fornecedores, devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_procure_19a=2 Faça esta pergunta se co_procure_19a=2 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_21a	How many meticals/liter did the price paid to suppliers increase as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro aumentou no preço pago ao fornecedores, devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_procure_19a=1 Faça esta pergunta se co_procure_19a=1 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Co_procure_22a	Have you faced challenges in procurement of milk as a result of Cyclone Idai in the last 12 months? Do you think the effects that you just described are short-term or long-term? Que desafios enfrentou na aquisição de leite como resultado do Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo?	*Ask if co_procure_16a=1 Faça esta pergunta se co_procure_16a=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_procure_16c	Have you experienced any impacts on the volume of milk procured from suppliers due to military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? Enfrentou algum impacto no volume do leite comprado dos seus fornecedores devido às hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select one option selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts due to military hostilities and any lingering impacts of Cyclone Idai, Cyclone Eloise, or COVID-19, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido às hostilidades militares e os impactos remanescentes do Ciclone IDAI, Ciclone Eloise ou COVID-19, na medida do possível.	
Co_procure_17c	How has the volume of milk procured from suppliers been impacted by military hostilities, if at all? Como é que o volume de leite adquirido dos fornecedores foi afectado pelas hostilidades militares? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select one option selecione uma opção *Ask if co_procure_16c=1 Faça esta pergunta se co_procure_16c=1 *Enumerator: Please ask the respondent to distinguish between impacts due to military hostilities and any lingering impacts of Cyclone Idai, Cyclone Eloise, or COVID-19, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido às hostilidades militares e os impactos	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		remanescentes do Ciclone IDAI, Ciclone Eloise ou COVID-19, na medida do possível.	
Co_procure_18c	How was the price paid to suppliers impacted by military hostilities, if at all? Qual foi o impacto das hostilidades militares no preço pago aos fornecedores/produtores? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select one option selecione uma opção *Ask if co_procure_16c=1 Faça esta pergunta se co_procure_16c=1	
Co_procure_21c	Have you faced other challenges in procurement of milk as a result of military hostilities? Do you think the effects that you just described are short-term or long-term? Que outros desafios enfrentou na aquisição de leite como resultado das hostilidades militares? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*Ask if co_procure_16c=1 Faça esta pergunta se co_procure_16c=1	
[Transition]: Enumerator: Great! Now, let's talk specifically about sales of raw milk. Please only think about raw milk Inquiridor: Ótimo! Vamos então falar especificamente sobre as vendas de leite cru. Por favor, pense a cerca de leite cru			
Co_sales_record1	Does the record book have information on raw milk sales? O livro de registos tem informações sobre a venda de leite cru? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if co_record2 = 10 Faça esta pergunta se co_record2 = 10	
co_sales_2_1	Who did you sell your raw milk to in the last dry season (May through October 2020)? Para quem vendeu o seu leite cru na última época seca (Maio a Outubro de 2020)? 1 Processors Processador 2 Retailers Retalhistas 3 Direct sales to consumers directo a consumidores 4 Other businesss outros negócios 5 Other, specify Outros, especifique	*Select all that apply Selecione todas as opções que se aplicam *If then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registos, caso contrário, pergunte o	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	-99 Do not know/refuse to answer Não sabe / recusa-se a responder	entrevistado e preencha com base nas suas respostas.	
co_sales_2_1_count	How many processors did you sell your raw milk to in the last dry season (May through October 2020)? A quantos processadores vendeu o seu leite cru na última época seca (Maio a Outubro 2020)?	*Ask if co_sales_2_1 = 2 Faça esta pergunta se co_sales_2_1 = 2	
Co_sales_2_1_name	Please specify name (s): Por favor especifique o (s) nome (s)	*Ask if co_sales_2_1 = 2 Faça esta pergunta se co_sales_2_1 = 2 *Repeated N times where N = co_sales_2_1_count Repita N vezes, onde N = co_sales_2_1_count	
Co_sales_3_1	In the last dry season (May through October 2020), who has the business sold raw milk to, what was the total volume sold over the entire season, and what price did they pay? Na última época seca (Maio a Outubro de 2018), a quem a cooperativa/MCC vendeu leite cru? Qual foi o volume total vendido ao longo da época? A que preço foi pago?		*If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registos, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas. *Enter "0" if no sales Insira "0" se não houve vendas
	Buyer Type Tipo de comprador	Quantity Sold (in liters) Quantidade vendida (litros)	
	Processors Processador		
	Retailers Retalhista		
	Direct sales to consumers Venda directa ao consumidor		
	Other businesses Outros negócios		
	Other, specify		

VARIABLE				ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Outros, especifique				
Co_sales_6_1	What was the business's total volume of raw milk sales over all of the last dry season (May through October 2020)? Qual foi o volume total de vendas de leite cru, na última época seca (Maio a Outubro de 2020)?			*Enter in liters Insira em litros *Enter 0 if no sales *Digite "0" se não houve vendas *If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registros, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas.	Indicator: #2
Co_sales_7_1	What is the average price received from buyers per liter of raw milk in the last dry season (May through October 2020)? Qual foi o preço médio que os compradores pagaram por litro de leite cru na última época seca (Maio a Outubro de 2020)?			**Enter in price/liter of milk sold to processors Insira o preço/litro vendido ao processador *Enter in Metical Insira em meticais *Enter 0 if no sales Insira "0" se não houve vendas *If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Insira o preço/litro vendido ao processador *Enter in Metical Insira em meticais *Enter 0 if no sales Insira "0" se não houve vendas	Indicator: #1
Co_sales_5_1	What was the business's total value of raw milk sales over all of the last dry season (May through October 2020)? Qual foi o valor total das vendas do leite cru na última época seca (de Maio a Outubro de 2020)? Volume * Price = Value = _____ Volume*Preço = Valor = _____			*Enter in Metical Insira em Meticais *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe /recusa-se a responder *Enter 0 if no sales Insira "0" se não houve vendas	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registos, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas.	
co_sales_2_2	Who did you sell your raw milk to in the last rainy season (November 2019 through April 2020)? Para quem vendeu o seu leite cru na última época chuvosa (Novembro de 2019 a Abril de 2020)? - Processors Processador - Retailers Retalhistas - Direct sales to consumers directo a consumidores - Other businesses outros negócios - Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam	
co_sales_2_2_count	How many processors did you sell your raw milk to in the last rainy season (November 2019 through April 2020)? A quantos processadores vendeu o seu leite cru na última época chuvosa (Novembro de 2019 a Abril de 2020)?	*Ask if co_sales_2_2 = 2 Faça esta pergunta se co_sales_2_2 = 2	
Co_sales_2_2_name	Please specify name: Por favor especifique o (s) nome (s)	*Ask if co_sales_2_2 = 2 Faça esta pergunta se co_sales_2_2 = 2 *Repeated N times where N = co_sales_2_2_count Repetido N vezes one N= co_sales_2_2_count	
Co_sales_3_2	In the last rainy season (November 2019 through April 2020), who has the cooperative sold raw milk to, what was the total volume sold over the entire rainy season, and what price did they pay? Na última época chuvosa (Novembro de 2019 a Abril de 2020), a quem a cooperativa vendeu leite cru? Qual foi o	*If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registos, caso	

VARIABLE				ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	volume total vendido ao longo da época? A que preço foi pago?			contrário, pergunte o entrevistado e preencha com base nas suas respostas. *Enter "0" if no sales Insira "0" se não houve vendas	
	Buyer Type Tipo de comprador	Quantity Sold (in liters) Quantidade vendida (litros)	Price/liter (in Metical) Preços/litro (em meticais)		
	Processors Processador				
	Retailers Retalhista				
	Direct sales to consumers Venda directa ao consumidor				
	Other businesses Outros negócios				
	Other, specify Outros, especifique				
Co_sales_6_2	What was the business's total volume of raw milk sales over all of the last rainy season (November 2019 through April 2020)? Qual foi o volume total de vendas de leite cru, na última época chuvosa (Novembro de 2019 a Abril de 2020)?			*Enter in liters Insira em litros *Enter 0 if no sales *Digite "0" se não houve vendas *If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se co_sales_record1 = 1, preencha usando o livro de registos, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas.	
Co_sales_7_2	What is the average price received from buyers per liter of raw milk in the last rainy season (November 2019 through April 2020)? Qual foi o preço médio que os compradores pagaram por litro de leite cru na última época chuvosa (Novembro de 2019 a Abril de 2020)?			**Enter in price/liter of milk sold to processors Insira o preço/litro vendido ao processador *Enter in Metical Insira em meticais	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*Enter 0 if no sales <i>Insira "0" se não houve vendas</i> *If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out <i>Se co_sales_record1 = 1, preencha usando o livro de registros, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas.</i>	
Co_sales_5_2	What was the business's total value of raw milk sales over all of the last rainy season (November 2019 through April 2020)? <i>Qual foi o valor total das vendas do leite cru na última época chuvosa (Novembro de 2019 a Abril de 2020)?</i> Volume * Price = Value = _____ <i>Volume*Preço = Valor = _____</i>	*Enter in Metical <i>Insira em Meticais</i> *Enter -99 if do not know/refuse to answer <i>Digite -99 se não sabe /recusa-se a responder</i> *Enter 0 if no sales <i>Insira "0" se não houve vendas</i> *If co_sales_record1 = 1 then fill from record book, else ask respondent and fill out <i>Se co_sales_record1 = 1, preencha usando o livro de registros, caso contrário, pergunte o entrevistado e preencha com base nas suas respostas.</i>	Indicator: #1
Co_sales_14	Does the business have any agreement with a buyer in the last 12 months (February 1, 2020 – January 31, 2021)? <i>A cooperativa teve algum contrato com compradores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>sim</i> 2 No <i>não</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option <i>Selecione apenas uma opção</i>	Indicator: #23

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_sales_15	How many agreements did you have with buyers in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos contratos a cooperativa teve com compradores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_sales_14 = 1 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	Indicator: #23
Co_sales_16	Can you describe these agreements? ? Pode descrever esses contratos? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_sales_14=1 Faça esta pergunta se co_sales_14=1	
Co_sales_17	How is the milk transported to your buyers? Como o leite é transportado para os seus compradores? 1 Buyer (processor etc.) comes to our doorstep O comprador (processador etc) vem à sua porta 2 Business travels to sell milk to buyer A cooperativa desloca-se para vender o leite ao comprador 3 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione tudo que se aplica *Ensure that if “Do not know” is chosen, no other option is chosen Assegure-se que se “Não sabe” for escolhido, nenhuma outra opção é escolhida	
Co_sales_18	What challenges, if any, did the business face in sales and marketing of milk/milk products in the last 12 months? How does this affect the business’ ability to make a profit? Quais os desafios, se existem, que a cooperativa/MCCenfrentou nas vendas e no marketing de leite e produtos lácteos nos últimos 12 meses? Como é que estes desafios afectam a capacidade do negócio de gerar lucros? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_sales_19	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address any sales and marketing challenges? What support provided by MERCADO, if any, has been successful? Como é que a cooperativa tentou resolver esses desafios? O que funcionou, o que não resultou? O projecto MERCADO ajudou de alguma forma a resolver os desafios de vendas e marketing?	*If no challenges, skip question Se não existiram desafios, salte esta questão	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Que apoio recebido do MERCADO, se algum, teve sucesso? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_sales_20	What does the business think will be necessary to successfully tackle challenges related to selling milk? O que a cooperativa acha que será necessário para enfrentar com sucesso os desafios relacionados com a venda do leite? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*If no challenges, skip question Se não existem desafios, salte esta questão	
Co_sales_21	Have you seen any changes in milk/milk product sales since your participation in the MERCADO project, if at all? Tem notado mudanças na venda do leite e dos produtos de laticínios desde a vossa participação no projecto MERCADO? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu a mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select one option selecione uma opção *If co_sales_21 = -99, go to co_sales_23 Se co_sales_21 = -99, salte para co_sales_23	
Co_sales_22	Why do you think milk sales changed because of the MERCADO project? Porquê julga que as vendas de leite mudaram por causa do projeto MERCADO? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_sales_23ba	Have you experienced any impacts on the volume of milk sold due to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Enfrentou algum impacto no volume do leite vendido devido à COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 3 Yes Sim 1 No Não	*Select one option selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts due to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido à	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		COVID-19 dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades militares, tanto quanto possível.	
Co_sales_23b	How was the volume of milk sold impacted by COVID-19, if at all? Como é que o volume de leite vendido foi afectado pela COVID-19? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select one option selecione uma opção *Ask if co_sales_23ba=1, Faça esta pergunta se co_sales_23ba=1	Indicator: #1
Co_sales_24b	How many liters per month did your sales of milk/milk products because of COVID-19? Quantos litros por mês decresceu as suas vendas de leite/produtos lácteos por causa da COVID-19?	*Ask if co_sales_23b=2 Faça esta pergunta se co_sales_23b=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Co_sales_25b	How was the price received for your milk impacted by COVID-19, if at all? Como é que o preço de venda do seu leite foi afectado pela COVID-19? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Selection one option selecione uma opção *Ask if co_sales_23ba=1 Faça esta pergunta se co_sales_23ba=1	Indicator: #1
Co_sales_26b	How many meticals/liter of milk did the price received by you decrease because of COVID-19? Quantos meticais por litro de leite, o preço recebido diminuiu por causa da COVID-19?	*Ask if co_sales_25b=2 Faça esta pergunta se co_sales_25b=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Co_sales_26_1b	How many meticals/liter of milk did the price received by you increase because of COVID-19? Por quantos meticais por litro de leite, o preço recebido aumentou por causa da COVID-19?	*Ask if co_sales_25b=1 Faça esta pergunta se co_sales_25b=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*Enter -99 if do not know/refuse to answer Digite -99 se entrevistado não sabe / recusa-se a responder	
Co_sales_27b	What other challenges have you faced in milk sales as a result of COVID-19? Do you think the effects that you just described are short-term or long-term? ? Que outros desafios enfrentou nas vendas de leite como resultado da COVID-19? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_sales_23ba=1 Faça esta pergunta se co_sales_23ba=1	
Co_sales_23aa	Are there any lingering impacts on the volume of milk sold due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Existem ainda alguns impactos persistentes do Ciclone Idai no volume de leite vendido nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não	*Select one option selecione uma opção *Enumerator: Explain that they should only think about the impact of Cyclone Idai in the last 12 months and not before that. Please also ask them to not consider impacts due to Cyclone Eloise, COVID-19, or military hostilities. *Inquiridor: Explique que eles devem pensar apenas no impacto do Ciclone IDAI nos últimos 12 meses e não antes disso. Peça também que eles não considerem os impactos devido ao Ciclone Eloise, COVID-19 ou hostilidades militares.	
Co_sales_23a	How was the volume of milk sold impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como foi afectado o volume de leite vendido devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu	*Select one option selecione uma opção *Ask if co_sales_23aa=1 Faça esta pergunta se co_sales_23aa=1	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Co_sales_24a	How many liters per month did your sales of milk/milk products decrease because of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos litros de leite/produtos lácteos diminuíram por mês, nas suas vendas devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_sales_23=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Co_sales_25a	How was the price received for your milk impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o preço do leite recebido devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Selection one option selecione uma opção *Ask if co_sales_23aa=1 Faça esta pergunta se co_sales_23aa=1	Indicator: #1
Co_sales_26a	How many meticals/liter of milk did the price received by you decrease because of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro de leite reduziu o preço de venda devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_sales_25=2 Faça esta pergunta se co_sales_25=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe/ recusa-se a responder	
Co_sales_26a_1	How many meticals/liter of milk did the price received by you increase because of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro de leite aumentou no preço de venda, devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_sales_25=1 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe/ recusa-se a responder	
Co_sales_27a	What recent challenges have you faced in milk sales as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? Que desafios recentes enfrentou na venda de leite como	*Ask if co_sales_23aa=1 Faça esta pergutna se co_sales_23aa=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	resultado do Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_sales_23ca	Have you experienced any impacts on the volume of milk sold due to military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? Enfrentou algum impacto no volume do leite vendido devido às hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não	*Select one option selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts due to military hostilities and any lingering impacts of Cyclone Idai, Cyclone Eloise, or COVID-19, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido às hostilidades militares e os impactos remanescentes do Ciclone IDAI, Ciclone Eloise ou COVID-19, na medida do possível.	
Co_sales_23c	How has the volume of milk sold impacted by military hostilities, if at all? Como o volume de leite vendido foi afectado pelas hostilidades militares? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select one option selecione uma opção *Ask if co_sales_23ca=1 Faça esta pergunta se co_sales_23ca=1	
Co_sales_25c	How was the price received for your milk impacted by military hostilities, if at all? Qual foi o impacto das hostilidades militares no preço de venda do leite? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma	*Select one option selecione uma opção *Ask if co_sales_23ca=1 Faça esta pergunta se co_sales_23ca=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	-99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>		
Co_sales_27c	What other challenges have you faced in milk sales as a result of military hostilities? Do you think the effects that you just described are short-term or long-term? <i>Que outros desafios enfrentou na venda de leite como resultado das hostilidades militares? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_sales_23ca=1 <i>Faça esta pergunta se co_sales_23ca=1</i>	

SECTION 3: MILK QUALITY TESTING

[Transition]: Enumerator: Now let's talk about milk quality checks and milk testing on incoming milk

Inquiridor: Agora vamos falar sobre a verificação da qualidade de leite e testagem do leite recebido.

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP
Co_qual_1	Does your business do any quality testing on incoming milk? A cooperativa/MCC faz algum teste de qualidade no leite comprado? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *If co_qual_1=-99, go to pr_qual_5 Se co_qual_1=-99, salte para pr_qual_5	Indicators: #25, #26
Co_qual_1_1	Why do you or do you not do any milk quality testing? Porquê faz ou não faz algum teste de qualidade do leite recebido? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_qual_2	What do you test for? Que testes faz? 1 Water adulteration Adulteração com água Bacteria Bactérias 2 Butter and fat content Teor de gordura Antibiotic residue Resíduo de antibiótico 3 pH testing Teste de pH 4 Testing for mastitis Teste de mastitis 5 Testing for freshness of milk Frescura do leite 6 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Ask if co_qual_1=1 *Prompt with responses sugira as respostas *Ensure that if "Do not know" is chosen, no other option is chosen *Assegure que se digitou "Não sabe" nenhuma outra opção é escolhida	Indicators: #25, #26
Co_qual_3	Do you test all deliveries, do random testing, or test on an ad hoc basis? Faz teste em todas as entregas, faz testes aleatórios ou faz teste quando for necessário? 1 Test all deliveries Teste em todas as entregas 2 Random check verificação aleatória 3 Ad-hoc/judgement basis Quando necessário / na base de julgamento -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if co_qual_1=1 Faça esta pergunta se co_qual_1=1	Indicators: #25, #26

Co_qual_4	What instruments did your business use for testing milk during the collection process in the last 12 months (February 1, 2020 – January 31, 2021)? Que instrumentos a sua cooperativa/MCC?? usou para testar o leite durante o processo de recolha nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 0 No instruments Nenhum instrumento 1 Taste, smell, visual observation Sabor, cheiro, observação visual 2 Milk density (use of lactometer) Densidade do leite (uso de lactómetro) 3 Clot-on boiling tests Coágulos no teste de fervura 4 Gerber tests for fat Teste Gerber para gordura 5 pH tests level of acidity (lactic acid in milk) Testes de pH para a acidez (ácido láctico no leite) 6 Temperature Temperatura 7 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas que se aplicam *Read from list *Leia a lista *Ensure that if “No instruments” or “Do not know” option is chosen, no other option is selected *Assegure que se digitar “Nenhum instrumento” ou “Não sabe” nenhuma outra opção é escolhida	Indicators: #25, #26
Co_qual4_1	What instruments did your business use for testing milk during the collection process between July 2019 to February 2020? Que instrumentos a sua cooperativa/MCC?? usou para testar o leite durante o processo de recolha no período entre Julho 2019 e Fevereiro 2020? 0 No instruments Nenhum instrumento 1 Taste, smell, visual observation Sabor, cheiro, observação visual 2 Milk density (use of lactometer) Densidade do leite (uso de lactómetro) 3 Clot-on boiling tests Coágulos no teste de fervura 4 Gerber tests for fat Teste Gerber para gordura 5 pH tests level of acidity (lactic acid in milk) Testes de pH para a acidez (ácido láctico no leite) 6 Temperature Temperatura 7 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Read from list *Leia a lista *Ensure that if “No instruments” or “Do not know” option is chosen, no other option is selected *Assegure que se digitar “Nenhum instrumento” ou “Não sabe” nenhuma outra opção é escolhida	Indicators: #25, #26

Co_qual_5	Has your business rejected any milk on safety and/or quality grounds in the last 12 months (February 1, 2020 – January 31, 2021)?)? A sua Cooperativa/MCC rejeitou algum leite por motivo de segurança e / ou qualidade nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção	Indicators: #25, #26, #30
Co_qual_6a	On average, what number of liters of incoming milk did your business reject on quality grounds during the last dry season (May through October 2020)? Em média, quantos litros de leite recebido na sua empresa foi rejeitado por motivos de qualidade durante a última época seca (Maio a Outubro de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse *Digite -99 se não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question *Se houver registos sobre a rejeição do leite, peça que lhe mostrem os seus registos e preencha com base nos registos, caso contrário faça a pergunta	
Co_qual_6	On average, what percentage of incoming milk did your business reject on quality grounds during the last dry season (May through October 2020)? Em média, que percentagem de leite recebido, a cooperativa/MCC rejeitou por razões de qualidade durante a última época seca (Maio a Outubro de 2020)?	*Ask if co_qual_5= 1 Faça esta pergunta se co_qual_5= 1 *Ensure only numbers between 0 and 100 can be entered *assegure que apenas números entre 0 e 100 possam ser inseridos *Enter -99 if do not know/refuse Digite -99 se não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question Se houver registos sobre a rejeição do leite, peça que lhe mostrem os seus registos e preencha com base nos registos, caso contrário faça a pergunta	Indicators: #25, #26, #21

Co_qual_7a	On average, what number of liters of incoming milk did your business reject on quality grounds during the last rainy season (November 2019 through April 2020)? Em média, quantos litros de leite recebido na sua empresa foi rejeitado por motivos de qualidade durante a última época chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse *Digite -99 se não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question *Se houver registros sobre a rejeição do leite, peça que lhe mostrem os seus registros e preencha com base nos registros, caso contrário faça a pergunta	
Co_qual_7	On average, what percentage of incoming milk did your business reject on quality grounds during the last rainy season (November 2019 through April 2020)? ? Em média, que percentagem de leite recebido, a cooperativa/MCC rejeitou por razões de qualidade durante a última época chuvosa (Novembro 2019 a Abril 2020)?	*Ask if co_qual_5= 1 *Ensure only numbers between 0 and 100 can be entered *assegure que apenas números entre 0 e 100 possam ser inseridos *Enter -99 if do not know/refuse Digite -99 se o entrevistado não sabe /se-recusa *If there have records for this, then ask them to show their records and fill out from record, else ask the question Se houver registros sobre a rejeição do leite, peça que lhe mostrem os seus registros e preencha com base nos registros, caso contrário faça a pergunta	Indicators: #25, #26, #21
Co_qual_8	Does the business adjust the price paid for milk on the basis of any quality parameters (e.g. milk freshness) A cooperativa/MCC ajusta o preço pago pelo leite com base em qualquer parâmetro de qualidade (por exemplo, frescura)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	

Co_qual_9	How is the price adjusted? <i>Como o preço é ajustado?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_qual_8=1 <i>Faça a pergunta se co_qual_8=1</i>	
Co_qual10	Did you make any change to your milk-testing procedures based on any training you received? If so, what training? How? <i>Fez alguma modificação nos procedimentos de testagem do leite com base em algum treinamento que recebeu? Se sim, que treinamento? Como?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co_train1 = 6 <i>Faça a pergunta se co_train1 = 6</i>	
Co_qual_11	Is any of the milk you sell rejected on quality grounds? <i>Parte do leite que vende foi rejeitado com base em critérios de qualidade?</i> <i>Please describe (open ended) Por favor, descreva (pergunta aberta)</i>		

SECTION 4: EQUIPMENT, FINANCE, AND INVESTMENTS

[Transition]: Enumerator: Now, we want to talk about your equipment, financing, and investments **Inquiridor:** Agora queríamos falar sobre o seu equipamento, financiamento e investimentos

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition]: Enumerator: Let's first talk about the equipment you currently own Inquiridor: Vamos falar primeiro acerca do equipamento que possui actualmente			
Co equip_1	What types of major equipment and facilities do you have? Que tipos de equipamentos e instalações importantes possui? 1 Bulk milk tank tanque de leite 2 Pasteurizer pasteurizador 3 Chilling system sistema de refrigeração 4 Bulk fridge retails geleiras para retalho 5 Value-adding technology (please specify) Tecnologia para agregar valor (por favor, especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Prompt with options *sugira as opções *Ensure that if "Do not know" is chosen, no other option is chosen *Assegure que se "Não sabe" foi escolhido nenhuma outra opção é selecionada	Indicators: #13, #14, #27
[Enumerator instruction]: For each <<type of major equipment>>, ask the following questions. Ask questions "co equip_2 – co equip_6" for applicable options selected in "co equip_1" Para cada <<tipo de equipamento principal>> faça as perguntas "co equip_2 – co equip_6" para as opções seleccionadas em "co equip_1".			
Co equip_2\$1 Co equip_2\$2 Co equip_2\$3 Co equip_2\$4 Co equip_2\$5	How many of <<type of major equipment>> do you own? Quantos << tipo de equipamento principal >> você possui?	*Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Co equip_3\$1 Co equip_3\$2 Co equip_3\$3 Co equip_3\$4 Co equip_3\$5	Is the <<type of major equipment>> currently in working order? O << tipo de equipamento principal >> está actualmente em funcionamento? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Co equip_4\$1 Co equip_4\$2 Co equip_4\$3 Co equip_4\$4 Co equip_4\$5	What is the total capacity of <<type of major equipment>> in the last 12 months (February 1, 2020 – January 31, 2021)? (in liters) Qual é a capacidade total do << tipo de equipamento principal >> nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? (em m³)	*Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	Indicator: #27
Co equip_5\$1 Co equip_5\$2 Co equip_5\$3	In what year was <<type of major equipment>> installed? Em que ano foi instalado o << tipo de equipamento principal >>?	*Enter -99 if do not know/refuse to answer Digite -99 se o	Indicator: #27

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co equip_5\$4 Co equip_5\$5		entrevistado não sabe /recusa-se a responder	
Co equip_6	Have you seen any changes in the purchase or improvement of any of the equipment you just talked about since participation in the MERCADO project, if at all? Notou alguma alteração na compra ou melhoramento de algum dos equipamentos referidos desde que começou a participar no projecto MERCADO? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co equip_7	Has COVID-19 affected the purchase or improvement of any of the equipment? O melhoramento ou a compra de equipamento sofreu alterações devido à COVID-19? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Co equip_8	How has COVID-19 affected the purchase or improvement of any of the equipment? Como é que a COVID-19 afectou a compra ou melhoramento do equipamento? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co equip_7=1 Faça esta pergunta se co equip_7=1	
[Transition]: Enumerator: Now I want to ask you questions about your investments Inquiridor: Agora quero lhe fazer perguntas sobre seus investimentos			
Co_invest_1	Did your business make any investments in your dairy enterprise in the last 12 months (February 1, 2020 – January 31, 2021)? O seu empreendimento realizou algum investimento no seu negócio de leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	Indicator: #31
Co_invest_2	What investments did the business make? Que investimentos a empresa fez? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if co-invest_1=1 Faça esta pergunta se co-invest_1=1	
Co_invest_3	In total, how much did your business spend in new investments in the last 12 months (February 1, 2020 – January 31, 2021)? No total, quanto gastou a sua empresa em novos investimentos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_invest_1=1 Faça esta pergunta se co_invest_1=1 *Explain that this could mean expenditure on	Indicator: #31

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		new machinery, new software, new marketing investments, new vehicles etc. *Explique que novos investimentos incluem despesas com nova maquinaria, novo software, investimentos em marketing , novos veículos, etc. *Enter -99 if don't know/refuse Digite -99 se não sabe /se- recusa *If multiple investments were made, enter total amount invested in last 12 months *Se se fez multiplos investimentos insira o valor total investido nos últimos 12 meses	
Co_invest_4	What was the main source of financing for the investments in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi a principal fonte de financiamento para os investimentos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Self-financed Auto-financiado 2 Informal sources(family, neighbours, friends) fontes informais (família, vizinhos, amigos) 3 Formal loans (banks etc.) Empréstimos formais (bancos, etc.) 4 Grant donativos 5 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if co-invest_1=1 Faça esta pergunta se co-invest_1=1 *Select only one option selecione apenas uma opção	
Co_invest_4_1	Was this grant from the MERCADO project's Dairy Innovation Fund? O donativo foi obtido através do Fundo para a Inovação Leiteira do projecto MERCADO? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if Co_invest_4 = 4 Faça a pergunta se Co_invest_4 = 4 *Select only one option selecione apenas uma opção	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_invest_5	Does the business have any specific plans to invest in new equipment in the coming year? O negócio tem algum plano específico para investir em novos equipamentos no próximo ano? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
[Transition]: Enumerator: Great! Now, let's talk about your financing and credit Inquiridor: Ótimo! Agora vamos falar sobre os seus financiamentos e créditos			
Co_credit_1	Did your business request or receive credit for any production costs in the last 12 months (February 1, 2020 – January 31, 2021)? A sua empresa solicitou ou recebeu crédito para algum custo de produção nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes, applied and received Sim, candidatou-se e recebeu 2 Yes, applied and did not receive Sim, candidatou-se e não recebeu 3 No, have not applied Não, se candidatou -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *If co_credit_1 = 3 OR co_credit_1 = -99, go to co_credit_8 Se co_credit_1 = 3 OU co_credit_1 = -99, salte para co_credit_8 *If co_credit_1 = 1, go to co_credit_4 Se co_credit_1 = 1, salte para co_credit_4	Indicator: #33
Co_credit_2	Why did your business not receive any loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)? Porquê a sua empresa não recebeu empréstimos de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 No formal financial institution present Inexistência de uma instituição financeira forma 2 Lack of collateral Falta de garantia 3 High interest rate taxas de juros altos 4 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if co_credit_1 =2 Faça esta pergunta se co_credit_1 =2 *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se digitou “Não sabe” nenhuma outra opção é selecionada	
Co_credit_3	What were the primary purposes for obtaining loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)? Quais foram os principais objectivos da solicitação de empréstimos de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_credit_1 = 1 *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	1 Buying equipment for business compra de equipamentos para o negócio 2 Managing short-term cash shortage Gestão de falta de dinheiro a curto prazo 3 Managing any unplanned shock to business Gestão de qualquer choque não planejado nos negócios 4 Business expansion Expansão de negócios 5 Buying dairy cattle Comprar gado de leite 6 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Assegure que se for escolhida a opção “Não sabe”, nenhuma outra opção é escolhida	
Co_credit_4	What is the total value of loans from formal sources that your business obtained in the last 12 months (February 1, 2020 – January 31, 2021)? Qual é o valor total dos empréstimos de fontes formais que sua empresa obteve nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_credit_1 = 1 Faça esta pergunta se co_credit_1 = 1 *Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe/recusa responder	Indicator: #33
Co_credit_5	At what interest rate did you borrow in the last 12 months (February 1, 2020 – January 31, 2021)? Think about only loans from formal sources A que taxa de juro foram concedidos os empréstimos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Pense apenas em empréstimos de fontes formais	*Ask if co_credit_1 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe/recusa responder *If interest rates differ across various sources, enter average interest rate *Se teve diferentes taxas de juro de várias fontes, insira a média	
Co_credit_6	What was the total cost of interest from paying off any business-related loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total dos juros relativos aos empréstimos para os negócios de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if co_credit_1 = 1 *Enter in Metical *Insira em Meticais *Enter 0 if this expense was not incurred *Insira 0 se esta despesa não foi feita *Ensure total cost in last 12 months is quoted *Assegure que é mencionado o custo	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		total nos últimos 12 meses	
Co_credit_7	Has your cooperative used any other financial products in the last 12 months (February 1, 2020 – January 31, 2021)? <i>A sua cooperativa usou um outro produto financeiro nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 No não 2 Business insurance <i>Seguro Empresarial</i> 3 Livestock insurance <i>Seguro de gado</i> 4 Mutual funds <i>fundos de garantias</i> 5 Capital gain bonds <i>títulos de capital</i> 6 Village saving and loans associations (VSLA) <i>Associações de poupança e crédito</i> 7 Other, specify <i>Outros , especifique</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select all that apply <i>Selecione todas as opções que se aplicam</i> *Prompt with options <i>*Apresente as opções</i> *Ensure that if “Do not know” or “no” is chosen, no other option is chosen <i>*Assegure que se “Não sabe” ou “não” forem escolhidos, nenhuma outra opção é selecionada</i>	
Co_credit_8	What financing challenges, if any, does the business face? How does this affect the business’ ability to make a profit? <i>Que desafios de financiamento, se existem, o negócio enfrenta? Como isto afecta a capacidade de gerar lucros?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Co_credit_9	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address financing challenges? What support provided by MERCADO, if any, has been successful? <i>Como o negócio tentou enfrentar esses desafios? O que funcionou, o que não resultou? O projeto MERCADO lhe ajudou, de alguma forma, a enfrentar os desafios do financiamento? Que apoio dado pelo projecto MERCADO, se algum, tem tido sucesso?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*If no challenges, skip question <i>*Se não existiram desafios, salte a questão</i>	
Credit_10	What does the business think will be necessary to tackle these financing challenges? <i>O que a cooperativa/MCC acha que será necessário para enfrentar esses desafios?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*If no challenges, skip question <i>*Se não existiram desafios, salte a questão</i>	
Credit_11	Has COVID-19 led to financing challenges? <i>A COVID-19 levou a desafios de financiamento ?</i> 1 Yes <i>Sim</i>	*Select only one option <i>selecione apenas uma opção</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Credit_12	How has COVID-19 affected what the business thinks will be necessary to tackle financing challenges? Como a COVID-19 afectou o que a cooperativa/MCC pensa que será necessário para enfrentar os desafios de financiamento ? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*Ask if credit_11=1 Faça esta pergunta se credit_11=1	

SECTION 5: STAFFING

[Transition]: Enumerator: Thank you! Now I want to ask you about your staffing. **Inquiridor:** Muito obrigado! Agora queria perguntar acerca do seu pessoal

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_labor	Which of the following types of employees did your business employ in the last 12 months (February 1, 2020 – January 31, 2021)? Quais dos seguintes tipos de empregados a cooperativa/MCC empregou nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Full time permanent - Male Tempo inteiro permanente - Masculino 2 Full-time permanent - Female Tempo inteiro permanente - feminino 3 Part Time Permanent - Male Regime parcial permanente - masculino 4 Part time permanent - Female Regime parcial permanente - feminino 5 Full-time seasonal - Male Tempo inteiro sazonal - masculino 6 Full-time seasonal - Female Tempo inteiro sazonal - feminino 7 Part-time seasonal - Male Regime parcial sazonal - masculino 8 Part-time seasonal - Female Regime parcial sazonal - feminino 9 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se escolheu “Não sabe” nenhuma outra opção é escolhida	
Co_labor1	Which of the following types of employees did your business employ from July 2019 to February 2020? Quais dos seguintes tipos de empregados a sua cooperativa/MCC empregou de Julho 2019 a Fevereiro 2020? 1 Full time permanent - Male Tempo inteiro permanente - Masculino 2 Full-time permanent - Female Tempo inteiro permanente - feminino 3 Part Time Permanent - Male Regime parcial permanente - masculino 4 Part time permanent - Female Regime parcial permanente - feminino 5 Full-time seasonal - Male Tempo inteiro sazonal - masculino	*Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se escolheu “Não sabe” nenhuma outra opção é escolhida	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	6 Full-time seasonal - Female Tempo inteiro sazonal - feminino 7 Part-time seasonal - Male Regime parcial sazonal - masculino 8 Part-time seasonal - Female Regime parcial sazonal - feminino 9 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
[Enumerator instruction]: For each <<type of employee>> please answer the following questions. Ask only for applicable options selected in “co_labor” Para cada tipo de empregado, por favor responda as seguintes questões. Pergunte apenas sobre as opções aplicáveis selecionadas no “co-labor”			
Co_labor0\$1 Co_labor0\$2 Co_labor0\$3 Co_labor0\$4 Co_labor0\$5 Co_labor0\$6 Co_labor0\$7 Co_labor0\$8 Co_labor0\$9	Does the record book have information on the <<type of employee>> O livro de registos tem informação sobre o << tipos de empregados >>? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Co_labor1\$1 Co_labor1\$2 Co_labor1\$3 Co_labor1\$4 Co_labor1\$5 Co_labor1\$6 Co_labor1\$7 Co_labor1\$8 Co_labor1\$9	How many of the following <<types of employees>> did your business have in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos dos seguintes << tipos de empregados >> o seu empreendimento teve nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados na cooperativa/MCC	
Co_labor1_1\$1 Co_labor1_1\$2 Co_labor1_1\$3 Co_labor1_1\$4 Co_labor1_1\$5 Co_labor1_1\$6 Co_labor1_1\$7 Co_labor1_1\$8 Co_labor1_1\$9	How many new employees of the following <<types of employees>> did your business hire in the last 12 months (February 1, 2020 – January 31, 2021) as a result of participation in the MERCADO project? Quantos novos empregados dos seguintes << tipos de empregados >> a cooperativa/MCC contratou nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021) como resultado da sua participação no projecto MERCADO?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados na cooperativa/MCC	*INDICATOR #3
Co_labor1a_1\$1 Co_labor1a_1\$2 Co_labor1a_1\$3	How many new employees of the following <<types of employees>> did your business hire from July 2019 to February 2020 as a result of participation in the	*Enter -99 if number unknown	*INDICATOR #3

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_labor1a_1\$4 Co_labor1a_1\$5 Co_labor1a_1\$6 Co_labor1a_1\$7 Co_labor1a_1\$8 Co_labor1a_1\$9	MERCADO project?)? Quantos novos empregados dos seguintes << tipos de empregados >> a cooperativa/MCC contratou entre Julho 2019 e Fevereiro de 2020, como resultado da sua participação no projecto MERCADO?	but were employed at the business *Digite -99 se não conhece o número mas foram empregados na cooperativa/MCC	
Co_labor2\$1 Co_labor2\$2 Co_labor2\$3 Co_labor2\$4 Co_labor2\$5 Co_labor2\$6 Co_labor2\$7 Co_labor2\$8 Co_labor2\$9	How many months in the year did your business hire <<types of employees>> in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meses no ano a cooperativa/MCC contratou << tipos de empregados >> nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados na cooperativa/MCC	
Co_labor3\$1 Co_labor3\$2 Co_labor3\$3 Co_labor3\$4 Co_labor3\$5 Co_labor3\$6 Co_labor3\$7 Co_labor3\$8 Co_labor3\$9	On average, how many hours in a week did <<types of employees>> work in the last 12 months (February 1, 2020 – January 31, 2021)? Em media, quantas horas por semana os << tipos de empregados >> trabalharam nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados na cooperativa/MCC	
Co_labor4\$1 Co_labor4\$2 Co_labor4\$3 Co_labor4\$4 Co_labor4\$5 Co_labor4\$6 Co_labor4\$7 Co_labor4\$8 Co_labor4\$9	What frequency of payment did you pay each <<type of employee>>? Qual foi a frequência de pagamento feitos para cada << tipos de empregados >>? 1 Hourly Por hora 2 Daily Por dia 3 Weekly Por semana 4 Monthly Por mês 5 Yearly Por ano	*Select only one option selecione apenas uma opção	
Co_labor5\$1 Co_labor5\$2 Co_labor5\$3 Co_labor5\$4 Co_labor5\$5 Co_labor5\$6 Co_labor5\$7 Co_labor5\$8	How much did you pay on average to each <<type of employee>> including benefits, in that type of payment? Think about the average wages paid only in the last 12 months. Please try to estimate if you do not know precise wages. Quanto em media pagou a cada << tipos de empregados >>, incluindo regalías nessa forma de pagamento? Pense sobre a média do salário pago	*Enter -99 if wages unknown Digite -99 se forem desconhecidos os salários *If different wages paid, calculate and enter average	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Co_labor5\$9	apenas nos últimos 12 meses. Por favor tente estimar se não sabe o salário exato.	amount Se tiverem sido pagos salários diferentes, calcule e digite o salário médio *Enter in Metical Digite o salário em Meticais	
Co_labor_6	Has COVID-19 affected the number of employees your business hired in the last 12 months? A COVID afetou o número de empregados que a cooperativa/MCC contratou nos últimos 12 meses? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Co_labor_6_1	How has COVID-19 affected the number of employees your business hired in the last 12 months? Como é que a COVID-19 afetou o número de trabalhadores contratados pela cooperativa/MCC nos últimos 12 meses? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*Ask if co_labor_6 = 1 Faça esta pergunta se co_labor_6 = 1	

SECTION 6: ADDITIONAL OPEN-ENDED QUESTIONS **QUESTÕES ABERTAS ADICIONAIS**

1. What support from MERCADO has been most helpful to your business? Please explain. Were activities and resources provided in a timely manner? **Que apoio do projecto MERCADO tem sido mais útil para o seu negócio? Por favor explique. As actividades e os recursos foram providenciados atempadamente?**
2. What support from MERCADO has not been helpful? What needs does your business have that are still unmet? What additional support would help your business? **Que apoio do projecto MERCADO não tem sido útil? Que necessidades tem o seu negócio que ainda não foram satisfeitas? Que apoio adicional ajudaria o seu negócio?**
3. Will all of your activities continue beyond the end of the MERCADO project? Please explain. Are you thinking of expanding? If so, how do you plan to grow your business? What influences these different considerations? What kind of improvements or additional supports are needed? If MERCADO continued for another 12 months, how would that affect your business? **Todas as vossas actividades irão continuar depois do fim do projecto MERCADO? Por favor explique. Estão a pensar em expandir? Se sim, como planeia desenvolver o seu negócio? O que influencia estas diferentes considerações? Que tipo de melhoramentos ou apoios adicionais são necessários? Se o projecto MERCADO continuasse por mais 12 meses, como afectaria o seu negócio?**
4. Are there any challenges specifically faced by women in participating in your business that are not faced by men? Are there any kinds of support provided to overcome these challenges that you know of? How do you think MERCADO could have addressed these challenges? **Existem alguns desafios enfrentados especificamente por mulheres na participação no seu negócio que não afetam os homens? Tem conhecimento se foi providenciado algum tipo de apoio para ultrapassar estes desafios? Na sua opinião, como é que o projecto MERCADO poderia ter abordado estes desafios?**
5. What effects, if any, has Cyclone Eloise had on your business? **Que efeitos, se houveram, o Ciclone Eloise causou na sua empresa?**
6. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today? **Existe algum assunto que não tenha perguntado e que gostaria de partilhar comigo ou tem algumas ideias adicionais sobre o que abordamos hoje?**

Processor Semi-Structured Survey

Interviewer name Nome do entrevistador	
Interview date Data da entrevista	
Interview time Hora da entrevista	
Firm name Nome da firma	
Respondent name Nome do entrevistado	
Respondent position/title Posição / título do entrevistado	
Respondent gender sexo do entrevistado	1 Male Maculino 2 Female Feminino
Contact information Informações de contacto	
GPS coordinates: latitude Coordenadas GPS: latitude	
GPS coordinates: longitude Coordenadas GPS: longitude	
Province: Província:	1 Manica 2 Sofala
Community Comunidade	
District: Distrito:	
INTRODUCTION: INTRODUÇÃO:	

Thank you for taking the time today to meet with me/us. I work for IMPAQ International, a US-based research company. Joining me is _____, who works for _____. Land O'Lakes International Development (Land O'Lakes) has contracted IMPAQ International to collect data for an evaluation of the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project.

Obrigado por aceitar falar comigo /connosco. Eu trabalho para a IMPAQ International, uma empresa de pesquisa sediada nos EUA. Comigo está o _____, que trabalha para _____. A Land O'Lakes International Development (Land O'Lakes) contratou a IMPAQ Internacional para recolher dados para uma avaliação do projecto de Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO).

Present letter of introduction. Apresenta a carta de introdução

Our goal is to capture a wide range of viewpoints that can usefully inform Land O'Lakes dairy activities in Mozambique. Your answers will be kept confidential and will not be used for any purpose other in a report that will help inform the dairy project being implemented by Land O' Lakes.

The interview should last about an hour. Participation is voluntary and you can choose not to take part. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer. Land O'Lakes would like you to feel free to be open and honest in your responses. Knowing the true situation in your dairy processing activities will help them provide better support to you in the future. There are no penalties to you for not participating or not answering a question. Neither your participation nor your responses will affect your ability to receive Land O'Lakes assistance now or in the future.

O nosso objetivo é captar uma ampla gama de pontos de vista que podem, duma forma útil, informar as atividades da Land O'Lakes em Moçambique. As suas respostas serão mantidas em sigilo e não serão usadas para nenhum outro propósito além de um relatório que ajudará a informar o projeto de leite que está a ser implementado pela Land O'Lakes.

A entrevista deve durar cerca de uma hora. A participação é voluntária e você pode optar por não participar. Você também pode optar por recusar-se a responder a quaisquer perguntas com as quais não se sentir à vontade ou que não queira responder. A Land O'Lakes gostaria que você se sentisse livre para ser aberto e honesto nas suas respostas. Conhecer a verdadeira situação das suas actividades de produção de leite ajudará a fornecer um melhor apoio para si no futuro. Não será sujeito a nenhuma penalização se não participar ou não responder a uma pergunta. Nem a sua participação nem as suas respostas afectarão o seu acesso à assistência da Land O'Lakes agora ou no futuro.

Before we begin, do you have any questions about the purpose of the evaluation or what will happen to the information?

Antes de começarmos a entrevista, gostaríamos de saber se tem alguma dúvida sobre o propósito da avaliação ou o que acontecerá com a informação?

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and aware of the risks for collecting data during this pandemic.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Permission Question: Pedido de permissão:

If it's ok, I would like to audio record the interview for note-taking accuracy. The only people who will have access to the recordings and interview notes are project researchers, who have taken a strict oath of confidentiality. Se estiver tudo bem, gostaria de gravá-la em áudio para garantir uma maior precisão na anotação. As únicas pessoas que terão acesso às gravações e notas de entrevista são os pesquisadores do projecto, que fizeram um juramento rigoroso de confidencialidade.

Do I have your permission to conduct this interview? <i>Tenho a sua permissão para fazer esta entrevista?</i>	Yes <i>Sim</i>	No <i>Não</i>
Do I have your permission to record this interview? <i>Tenho a sua permissão para gravar a entrevista?</i>	Yes <i>Sim</i>	No <i>Não</i>

If at any point you want me to turn off the tape recorder, please let me know and I'll be happy to comply Se em algum momento quiser que eu desligue o gravador, por favor diga que teremos o prazer em satisfazer a sua vontade

SECTION 0: BACKGROUND ON BUSINESS AND ENGAGEMENT WITH MERCADO

[Transition]: Enumerator: First, we would like to talk to you about your business and your engagement with the MERCADO project Inquiridor: Primeiro, gostaríamos de conversar consigo sobre o seu negócio e o seu envolvimento com o projecto MERCADO

pr_back1	Please provide a brief background on your business (processor or microprocessor) <i>Por favor, Faça uma breve descrição histórica do seu negócio (processador ou microprocessador)</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i> • Year of inception <i>O ano de criação</i> • Motivation for start-up <i>A motivação para começar</i>
pr_back2	When and how did you begin work with the MERCADO project? <i>Quando e comomeçou a trabalhar com o projecto MERCADO?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i> • Year began work with MERCADO project <i>Em que ano começou a trabalhar com o projecto MERCADO</i> • Motivation for work with MERCADO project <i>Qual foi a motivação para trabalhar com o projecto MERCADO</i>

	Major evolutions in nature or scale of engagement with MERCADO Principais desenvolvimentos quer na natureza quer na escala devido ao envolvimento com o projecto MERCADO		
Pr_train1	What types of training has your business received in the last 12 months (February 1, 2020 – January 31, 2021) from any source? ? Que tipos de treinamento recebeu o seu negócio nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021), de qualquer fonte? 0 No training Nenhum treinamento 1 Milk handling manejo do leite 2 Milk processing processamento de leite 3 Milk storage and cooling Armazenamento e refrigeração de leite 4 Food safety training Treinamento em segurança de alimentos 5 Milk testing training Treinamento em testagem de leite 6 Business operations/Financial management Operações comerciais / gestão financeira 7 Marketing and sales Marketing e vendas 8 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplica *Ensure that if “No training” or “Do not know” are chosen, no other option is chosen Assegure que se for escolhido “Nenhum treinamento” ou “Não sabe”, nenhuma outra opção é escolhida	Indicators: #36, #37, #38, #39, #40, #42, #43
Pr_train1_1	What types of training did your business received from any source from July 2019 to February 2020? Que tipos de treinamento o processador recebeu no período de Julho 2019 a Fevereiro 2020, de qualquer fonte? 0 No training Nenhum treinamento 1 Milk handling manejo do leite 2 Milk processing processamento de leite 3 Milk storage and cooling Armazenamento e refrigeração de leite 4 Food safety training Treinamento em segurança de alimentos 5 Milk testing training Treinamento em testagem de leite 6 Business operations/Financial management Operações comerciais / gestão financeira 7 Marketing and sales Marketing e vendas 8 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Ensure that if “No training” or “Do not know” are chosen, no other option is chosen Assegure que se for escolhido “Nenhum treinamento” ou “Não sabe”, nenhuma outra opção é escolhida	Indicators: #36, #37, #38, #39, #40, #42, #43
Pr_train2	From whom did your business receive this training in the last 12 months (February 1, 2020 – January 31, 2021)? De quem, o processador recebeu estes treinamentos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Government agencies (national, state, local) Agências governamentais (nacional, provincial, distrital) 2 Non-governmental organizations Organizações não governamentais 3 Land O' Lakes Land O 'Lakes	*Ask if pr_train1 = 1 -7 Faça esta pergunta se pr_train1 = 1 -7 *Select all that apply Selecione todas as opções que se aplicam	

	4 Other private companies Outros empreendimentos privados 5 Input suppliers fornecedores de insumos 6 Business development service providers provedores de serviços de desenvolvimento de negócios 7 Own staff Pessoal próprio 8 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Pr_train3	Thinking specifically about the training you've participated in from Land O'Lakes in the last 12 months, what were the training topics? What were your key learnings? Is there anything that you especially liked about this training? Are there any areas where you need more support? Pensando especificamente no treinamento que participou dado pela Land O'Lakes nos últimos 12 meses, quais foram os tópicos destes treinamentos? Quais foram os aspectos chave que aprendeu? Existe alguma coisa que você gostou especialmente destes treinamentos? Existem áreas em que precisa de mais apoio? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr-train2 = 3 Faça esta pergunta se pr-train2 = 3	

SECTION 1: RECORD KEEPING

[Transition]: Enumerator: Thank you! Now we want to ask you about the records you keep for your business **Inquiridor: Obrigado! Agora gostaríamos de lhe perguntar sobre os registros que faz sobre o seu negócio de processamento**

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_record	Did your business keep any kinds of records or logs in the last 12 months (February 1, 2020 – January 31, 2021)? O processador fez algum tipo de registros nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse Não sabe /recusa-se a responder	*Select only one option *Selecione apenas uma opção	Indicators: #37; #18
pr_record1	Why do you keep or not keep any kinds of records or logs for your business? Porquê faz ou não faz algum tipo de registo do seu negócio de processamento? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_record2	What types of records did you keep in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Que tipos de registros manteve nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Income and expense ledger <i>Registos de receita e despesas</i> 2 Production ledgers (<i>tracks inputs vs outputs</i>) <i>Registos de produção (monitoria entradas e saídas)</i> 3 Labor <i>força de trabalho</i> 4 Equipment <i>equipamento</i> 5 Long range budgeting <i>orçamento de longo prazo</i> 6 rejections of incoming milk <i>rejeições de leite recebido</i> 7 Rejections of outgoing milk <i>rejeições de leite vendido</i> 8 Monthly cash flow statement <i>relatório de fluxo de caixa mensal</i> 9 Milk collection from suppliers <i>leite recolhido dos fornecedores</i> 10 Milk sales <i>vendas de leite</i> 11 Other, specify _____ <i>Outros, especifique</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Ask if pr_record = 1 <i>Faça esta pergunta se pr_record = 1</i> *Select all that apply <i>Selecione todas as opções que se aplicam</i> *Prompt with options	Indicator: #18
pr_record3	Did you start or change the way to keep records as a result of any training you received? If so, what training? How did it change? <i>Será que começou ou mudou a forma de fazer registros como resultado de algum treinamento que recebeu? Se sim, que treinamento? Como foi a mudança?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_train1 = 6 <i>Faça esta pergunta se pr_train1 = 6</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition]: Enumerator: We want to really understand the revenues and costs of your business to understand how your business is doing. In order to do this, we need to ask you specific questions about your costs and revenues over the last year. If you have a monthly cash flow statement from last year (February 1, 2020 – January 31, 2021), it would be helpful if you get out the copy of your monthly cash flow statement so that we can talk about exact values. If not, then please try to provide accurate values. <i>Inquiridor: Gostariamos de compreender bem os rendimentos e os custos (despesas) do seu negócio, para entender o desempenho do seu negócio. Para tal, precisamos de fazer perguntas específicas a cerca dos vossos custos e das receitas ao longo do último ano. Seria útil se pudessem partilhar connosco os relatórios mensais de fluxo de caixa do último ano (1 de Fevereiro 2020 a 31 de Janeiro 2021) para podermos falar de valores exatos. Se não têm os relatórios, então por favor tente fornecer valores acurados.</i>			
pr_cash2	Is it possible to provide a copy or photo of the monthly cash flow statement from last year (February 1, 2020 – January 31, 2021) <i>É possível ter cópias ou imagem dos relatórios de fluxo de caixa mensais do último ano (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Ask if pr_record2 = 8 <i>Faça esta pergunta se pr_record2 = 8</i> *Select only one option <i>Selecione apenas uma opção</i> *Take photo if pr_cash2=1 <i>*Tire uma fotografia se pr_cash2=1</i>	Indicator: #18
[Enumerator Instruction]: If “pr_cash2 = 1” then fill the following questions using the monthly cash flow statement, else ask the respondent and then fill out. If the cashflow statement does not have this information for any question, or if the information is incomplete, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as ‘Do not know’ before asking the respondent the question. <i>Se a resposta é sim então preencha as seguintes questões usando o relatório do fluxo de caixa mensal, caso contrário pergunte ao entrevistado e preencha. Se o relatório do fluxo de caixa não tem informação de alguma questão particular ou informação incompleta, peça ao entrevistado para tentar recordar-se ou estimar a resposta. Não deixe a pergunta em branco ou codificada como “Não sabe” antes de perguntar ao entrevistado.</i>			
pr_othercost_record1	Does the cash flow statement have information on cost of utilities? <i>O relatório de fluxo de caixa tem informação dos custos de produção?</i> 1 Yes <i>sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe /recusa-se a responder</i>	*Ask if pr_record2 = 8 <i>Faça esta pergunta se pr_record2 = 8</i> *Select only one option <i>selecione apenas uma opção</i> *Explain that utilities include costs for fuel, electricity and water, among others <i>Explique que os custos de produção incluem custos de combustível, eletricidade e água</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_othercost1	What was the average monthly cost of utilities for your business over the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo médio mensal de custos de produção para o seu negócio nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If pr_othercost_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_othercost_record1 = 1, preencha usando o livro de registo, caso contrário pergunte ao entrevistado e preencha *Ensure average monthly price in last 12 months is quoted *Assegure que é quotado o preço médio mensal nos últimos 12 meses *Explain that utilities include costs for fuel, electricity and water, among others Explique que os custos de produção incluem custos de combustível, eletricidade e água *Enter -99 if don't know/refuse *Digite -99 se não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não foi feita *Enter in Metical *Insira em Meticais	
pr_othercost_record2	Does the cash flow statement have information on rental costs of land/buildings/machinery? O relatório de fluxo de caixa tem informações do custo do aluguer de terrenos/instalações / maquinaria? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa - se a responder	*Ask if pr_record2 = 8 Faça a pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
pr_othercost2	What was the average monthly rental cost of lands and buildings in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo médio mensal do aluguer de terrenos e de	*If pr_othercost_record2 = 1 then fill from record book, else ask respondent and fill out Se pr_othercost_record2 = 1, preencha usando o livro de	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	instalações nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	registo, caso contrário ,pergunte ao entrevistado e preencha *Ensure average monthly price in last 12 months is quoted *Assegure que é quotado o preço médio mensal nos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred * Digite 0 se a despesa não foi feita *Enter in Metical *Insira em Meticais	
pr_othercost3	What was the average monthly rental cost of machinery, vehicles and equipment (including storage equipment) in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo médio mensal do alugar de máquinas, veículos e equipamentos (incluindo equipamentos de armazenamento) nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If pr_othercost_record2 = 1 then fill from record book, else ask respondent and fill out Se pr_othercost_record2 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Ensure average monthly price in last 12 months is quoted *Assegure que é quotado o preço médio mensal nos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não foi feita *Enter in Metical *Insira em Meticais *Explain: this could include milk testing costs *Explique: isto pode incluir os equipamentos de testagem do leite	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_othercost_record3	Does the cash flow statement have information on maintenance and repair costs? O relatório do fluxo de caixa tem informação sobre os custos de manutenção e reparação? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if pr_record2 = 8 Faça a pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
pr_othercost4	What was the total cost of maintenance and repair in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total de manutenção e reparação nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If pr_othercost_record3 = 1 then fill from record book, else ask respondent and fill out Se pr_othercost_record3 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Ensure total cost in last 12 months is quoted *Assegure que é quotado o custo total dos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se não sabe ou recusa responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não foi feita *Enter in Metical *Insira em Meticais	
pr_othercost_record4	Does the cash flow statement have information on cost of consumables (e.g. milk utensils)? O relatório do fluxo de caixa tem informação do custo de consumíveis (ex. utensílios para leite)? 1 Yes Sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if pr_record2 = 8 Faça a pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
pr_othercost5	What was the total cost of consumables (e.g. milk utensils), including office consumables and other consumables, in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total de consumíveis	*If pr_othercost_record4 = 1 then fill from record book, else ask respondent and fill out Se pr_othercost_record4 = 1, preencha usando o livro de	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	(ex. utensílios de leite) including consumíveis de escritório, outros consumíveis, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	registro, caso contrário ,pergunte ao entrevistado e preencha *Ensure total cost in last 12 months is quoted *Assegure que é quotado o custo total dos últimos 12 meses *Enter -99 if don't know/refuse *Digite -99 se o entrevistado não sabe ou recusa-se a responder *Enter 0 if this expense was not incurred *Digite 0 se a despesa não foi feita *Enter in Metical *Insira em Meticais *Explain: this could include costs for milk utensils *Explique: estes consumíveis incluem os custos dos utensílios de leite	
pr_othercost_record5	Does the cash flow statement have information on cost of services to milk suppliers? O relatório do fluxo de caixa tem informação dos custos de serviços aos produtores? 1 Yes Sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if pr_record2 = 8 Faça esta pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
pr_othercost6	What was the total cost of all services to milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o custo total dos serviços prestados aos produtores de leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*If pr_othercost_record5 = 1 then fill from record book, else ask respondent and then fill out Se pr_othercost_record5 = 1, preencha usando o livro de registro, caso contrário ,pergunte ao entrevistado e preencha *Ensure total cost in last 12 months is quoted *Assegure que é quotado o custo total dos últimos 12 meses *Enter in Metical *Insira em Meticais	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*Enter 0 if there was no cost *Digite 0 se não teve custos *Enter -99 if do not know/refuse to answer Não sabe / recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question * Se tiverem livro de registos peça para mostrar e preencha com os dados do livro, caso não faça a pergunta	
pr_othercost_record6	Does the cash flow statement have information on transportation costs? O relatório do fluxo de caixa tem informação sobre o custo de transportes? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responde	*Ask if pr_record2 = 8 Faça esta pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
[Enumerator Instruction]: If pr_othercost_record6 = 1, then for questions pr_othercost7 – pr_othercost8, fill from the record book ; else ask respondent and then fill out. If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as ‘Do not know’ before asking the respondent the question. Se pr_othercost_record6 = 1, então para as perguntas pr_othercost7 – pr_othercost8, preencha usando o livro de registos, caso contrário pergunte ao entrevistado e preencha. Se o livro de registos não tem esta informação, peça ao entrevistado para tentar recordar-se ou estimar a resposta. Não deixe a pergunta em branco ou codificada como “Não sabe” antes de perguntar ao entrevistado.			
pr_othercost7	What is the average monthly cost of transportation for your business in the last rainy season (November 2019 through April 2020)? Qual foi o custo médio mensal de transporte no seu negócio de processamento na última época chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer and “0” if no costs incurred *Digite -99 se o entrevistado não sabe ou recusa-se a responder e “0” se a despesa não foi feita	
pr_othercost8	What is the average monthly cost of transportation for your business in the last dry season (May through October 2020)? Qual é o custo médio mensal de transporte no seu negócio de processamento na última época seca (Maio a Outubro de 2020)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer and “0” if no costs incurred *Digite -99 se o entrevistado não sabe	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		ou recusa-se a responder e "0" se a despesa não foi feita	
pr_othercost9_1	Other than staff costs and milk purchase costs, that we will touch on later, what other costs of production in the last 12 months have we not included in the previous questions? ? Sem contar com os custos do pessoal e da compra do leite, que serão abordados mais tarde, quais foram os outros custos de produção nos últimos 12 meses, que não foram incluídos nas perguntas anteriores? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
pr_othercost9_2	Does the cash flow statement have information on these other costs? O relatório do fluxo de caixa tem informação desses outros custos? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Ask if pr_record2 = 8 Faça esta pergunta se pr_record2 = 8 *Select only one option selecione apenas uma opção	
pr_othercost9_3	Which other costs does the cash flow have information about? Que outros custos o relatório do fluxo de caixa tem? <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_othercost9_2 = 1 Faça esta pergunta se pr_othercost9_2 = 1	
pr_othercost9_4	What were the other total costs of production that we have not included in the last 12 months (February 1, 2020 – January 31, 2021)? Quais foram os outros custos totais de produção que não incluímos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer and "0" if no costs incurred *Digite -99 se o entrevistado não sabe ou recusa-se a responder e "0" se a despesa não foi feita	

SECTION 2: PROCUREMENT, PROCESSING, AND SALES

[Transition]: Enumerator: Thank you! Now we want to talk to you about your procurement, processing, and sales of milk and milk products **Inquiridor: Obrigado! Agora gostaríamos de falar consigo acerca das suas compras, processamento e vendas de leite**

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition]: Enumerator: First, let's talk about your procurement of milk and milk products Inquiridor: vamos falar primeiro das suas compras de leite e de produtos lácteos [Instruction] Enumerator: Ask the remaining questions in this section if <code>pr_procure_0 = 1</code> If the record book does not have this information, prompt the respondent to try to recall the answer or estimate it. Do not leave the response blank or coded as 'Do not know' before asking the respondent the question. Faça as outras perguntas desta secção se <code>pr_procure_0 = 1</code>. Se o livro de registos não tem esta informação, peça ao entrevistado para tentar recordar-se ou estimar a resposta. Não deixe a pergunta em branco ou codificada como "Não sabe" antes de perguntar ao entrevistado.			
<code>pr_procure_0</code>	Did you procure any milk in the past 12 months (February 1, 2020 – January 31, 2021)? Comprou algum leite nos últimos 12 meses, (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *If <code>pr_procure_0 = 2</code> or -99; thank respondent and end the interview *Se a resposta for 2 (não) ou -99, agradeça ao entrevistado e termine a entrevista	
<code>pr_procure_record1</code>	Does the record book have information on milk procurement? O seu livro de registos, contém informação sobre as compras de leite? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if <code>pr_record = 1</code> Faça esta pergunta se <code>pr_record = 1</code>	
<code>Pr_procure_1</code>	How much of the following types of milk did you procure in the last dry season (May through October 2020) comes from? <i>Please answer the totals over all the months of the dry season and not a monthly total</i> Que quantidade de cada um dos seguintes tipos de leite comprou na última época seca (Maio a Outubro de 2020). Por favor responda a quantidade total de todos os meses e não quantidades totais mensais	*Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe ou recusa-se a responder	

VARIABLE					ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Supplier Type Tipo de fornecedor	Quantity procured (liters) Quantidade comprada (litros)	# of suppliers # de fornecedores	Price/unit Preço/undade	*If milk then enter quantity in liters and price/liter *If imported powder, then enter quantity in kilograms and price/kilogram Se for leite em pó importado, insira a quantidade em kilogramas e preço/kilograma *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1 , preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha * Please enter the type of the other milk product supplied, if one is provided. Por favor, insira o tipo do outro produto lácteo fornecido, se houver.	
	Imported powder Leite em pó importado					
	Raw milk from smallholder suppliers Leite cru de pequenos fornecedores					
	Raw milk from commercial suppliers Leite cru de fornecedores comerciais					
	Raw milk from cooperatives Leite cru de cooperativas					
	Other, specify Outros especifique					

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_procure_2	What volume of milk has the business procured in the last dry season (May through October 2020)? <i>Please answer the total amount over all the months of the dry season and not a monthly total</i> Qual foi o volume de leite que o processador comprou na última época seca (Maio a Outubro de 2020)? <i>Por favor indique a quantidade total do período seco e não quantidade mensal</i>	*Enter in liters*<i>Insira em litros</i> *Enter -99 if do not know/refuse to answer *<i>Digite -99 se o entrevistado não sabe ou recusa-se a responder</i> *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha	Indicator: #1
Pr_procure_3	What was the average price paid to your suppliers during the dry season (May through October 2020)? Qual foi o preço médio pago aos fornecedores durante época seca (Maio a Outubro de 2020)?	*Enter in Metical *<i>Insira em Meticais</i> *Enter -99 if do not know/refuse to answer *<i>Digite -99 se o entrevistado não sabe ou recusa-se a responder</i> *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		ao entrevistado e preencha	
Pr_procure_4	What is the total value of milk procured by the business in the last dry season (May through October 2020)? <i>Please answer the total value over all the months of the dry season and not a monthly total</i>)? Qual foi o valor total do leite comprado pelo processador na última época seca (Maio a Outubro de 2020)? <i>Please answer the total value over all the months of the dry season and not a monthly total Por favor considere o valor total de todos os meses da época seca e não o total mensal</i> Volume * Price = Value = _____ Volume*Preço = Valor = _____	*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Check to ensure the total value is the product of pr_procure_2 and pr_procure_3*Verifique para assegurar que o valor total é a multiplicação do pr_procure_2 e pr_procure_3	Indicator: #1
Pr_procure_5	How much of the following types of milk did you procure in the last dry season (May through October 2020) comes from? <i>Please answer the totals over all the months of the dry season and not a monthly total</i> Que quantidade de cada um dos seguintes tipos de leite comprou na última época chuvosa (Novembro 2019 a Abril 2020). <i>Por favor indique a quantidade total de todos os meses e não quantidades mensais</i>	*Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa responder	

VARIABLE					ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Supplier Type Tipo de fornecedor	Quantity procured (liters) Quantidade comprada (litros)	# of suppliers # de fornecedores	Price/unit Preço/unidade	*If milk then enter quantity in liters and price/liter *If imported powder, then enter quantity in kilograms and price/kilogram <i>*Para o leite insira a quantidade em litros e o preço/litro. Se for leite em pó, insira a quantidade em kg e o preço/kg</i> *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha	
	Imported powder Leite em pó importado					
	Raw milk from smallholder suppliers Leite cru de pequenos produtores					
	Raw milk from commercial suppliers Leite cru de produtores comerciais					
	Raw milk from cooperatives Leite cru de cooperativas					
	Other, specify Outros, especifique					
Pr_procure_6	What volume of milk has the business procured in the last rainy season (November 2019 through April 2020)? <i>Please answer the total volume over all the months of the rainy season and not a monthly total</i> <i>Qual foi o volume de leite que o processador comprou na última época chuvosa (Novembro 2019 a Abril de 2020)?</i> <i>Por favor, responda a quantidade total de todos os meses e não quantidades totais mensal</i>				*Enter in liters <i>*Insira em litros</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se o entrevistado não sabe ou recusa responder</i> *If pr_procure_record 1 = 1 then fill from	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha	
Pr_procure_7	What was the average price paid to your suppliers during the rainy season (November 2019 through April 2020)? Qual foi o preço médio pago aos seus fornecedores ao longo época chuvosa (Novembro 2019 a Abril de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If pr_procure_record 1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha	
Pr_procure_8	What is the total value of milk procured by the business in the last rainy season (November 2019 through April 2020)? Please answer the total value over all the months of the rainy season and not a monthly total)? Qual foi o valor total do leite comprado pelo processador na última época chuvosa (Novembro de 2019 a Abril de 2020)? Please answer the total value over all the months of the rainy season and not a monthly total Por favor	*Enter in Metical Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *If pr_procure_record	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>considere o valor total de todos os meses da época chuvosa e não os valores totais mensais</i> Volume * Price = Value = _____ <i>Volume*Preço = Valor = _____</i>	1 = 1 then fill from record book, else ask respondent and fill out Se pr_procure_record 1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Check to ensure the total value is the product of pr_procure_6 and pr_procure_7 *Verifique para assegurar que o valor total é a multiplicação do pr_procure_6 e pr_procure_7	
Pr_procure_9	What type of milk supply/supplier do you prefer? Why? <i>Que tipo de fornecedor de leite prefere? Porquê?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_procure_9a	Did the MERCADO project provide any linkages/introductions to new milk suppliers? <i>O projecto MERCADO estabeleceu alguma ligação/apresentação a novos fornecedores de leite?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_procure_10	What are the pros and cons of different types of milk suppliers? <i>Quais foram os pros e contras dos diferentes tipos de fornecedores de leite?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	<i>*Ask about price and quality</i> <i>*Pergunte sobre o preço e qualidade</i>	
Pr_procure_11	Did the business have any formal agreement with any of your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? <i>O processador teve algum contrato formal com algum dos seus</i>	*Select only one option <i>selecione apenas uma opção</i>	Indicator: #23

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	fornecedores de leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Pr_procure_12	How many agreements did you have with your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos contratos teve com os seus fornecedores de leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_procure_11 = 1 Faça a pergunta se pr_procure_11 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	Indicator: #23
Pr_procure_12a	How many of these suppliers were women or businesses owned by women Quantos destes fornecedores eram mulheres ou negócios pertencentes a mulheres?	*Ask if pr_procure_11 = 1 Faça a pergunta se pr_procure_11 = 1 *Enter number >=0 *Insira um número maior ou igual a 0	
Pr_procure_13	Did you provide any support services to your milk suppliers in the last 12 months (February 1, 2020 – January 31, 2021)? Prestou algum serviço de apoio aos seus fornecedores de leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Explain: Services could include training, technical support, transport services etc. *Explique: Serviços podem incluir treinamento, assistência técnica, serviços de transporte, etc.	
Pr_procure_14	Please list the types of support services you offered: Por favor, liste os tipos de serviços de apoio que ofereceu: 1 Sold supplemental fodder to farmers Vendeu suplementos forrageiros aos criadores	*Ask if pr_procure_13=1 Faça esta pergunta se pr_procure_13=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	2 Sold supplemental veterinary medicines to farmers Vendeu medicamentos veterinários aos criadores 3 Trained farmers in animal nutrition and health Treinou produtores em nutrição e saúde animal 4 Trained farmers in milking techniques Treinou produtores em técnicas de ordenha 5 Trained farmers in animal hygiene Treinou produtores em higiene 6 Trained farmers in milk transportation Treinou produtores em transporte de leite 7 Veterinary advice Assistência/assessoria veterinária 8 Agronomic assistance Assistência agrícola 9 Business and management services Serviços de negócio e gestão 10 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Enumerator read responses *Inquiridor lê as respostas *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se escolheu “Não sabe”, nenhuma outra opção é escolhida	
pr_procure_14_oth	Please specify other support service(s) you offered. (open-ended) Por favor, especifique outros serviços de apoio que ofereceu (pergunta aberta)	*Ask if pr_procure_14 = 10 Faça esta pergunta se pr_procure_14 = 10	
Pr_procure_15	Why do you or don't you provide support services to your suppliers? Porque razão prestou ou não serviços de apoio aos seus fornecedores? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*Ask if pr_procure_13=2 Faça esta pergunta se pr_procure_13=2	
pr_procure_16	How is the milk transported from your suppliers? Como é que o leite dos seus fornecedores é transportado? 1 Suppliers come to our doorstep fornecedores vêm à porta do processador 2 Business travels to buy milk from seller O processador desloca-se para comprar leite do fornecedor 3 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Ensure that if “Do not know” is chosen, no other option is chosen *Assegure que se escolheu "Não sabe", nenhuma outra opção é escolhida	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_procure_17	What challenges, if any, does the business face in procurement of milk in the last 12 months (February 1, 2020 – January 31, 2021)? How does this affect the business' ability to make a profit? ? <i>Que desafios, se houve, o processador enfrentou na compra do leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Como é estes desafios afectaram a capacidade do processador de gerar lucro?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_procure_18	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address any milk procurement challenges? What support provided by MERCADO, if any, has been successful? <i>Como é que o processador tentou resolver esses desafios? O que funcionou e o que não resultou? O projeto MERCADO ajudou de alguma forma a resolver os desafios de aquisição do leite? Que apoio foi dado pelo projecto MERCADO, se algum, que teve sucesso?</i> <i>*Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	<i>*If no challenges, skip question *Se não houve desafios, salte a questão</i>	
Pr_procure_19	What does the business think will be necessary to successfully tackle challenges in milk procurement? <i>O que é que o processador julga que seria necessário para enfrentar com sucesso esses desafios da compra do leite?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	<i>*If no challenges, skip question *Se não houve desafios, salte a questão</i>	
pr_procure_20	Have you seen any changes in milk procurement since your participation in the MERCADO project, if at all? <i>Tem visto alguma mudança na compra de leite como resultado da sua participação no projecto MERCADO?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Permaneceu na mesma</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	<i>*Select one option seleccione uma opção</i> <i>*If pr_procure_20 = -99, go to pr_procure_22 Se pr_procure_20 = -99, salte para pr_procure_22</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_procure_21	How do you think milk procurement changed because of the MERCADO project? <i>Como julga que a compra de leite mudou devido ao projecto MERCADO?</i> <i>Please describe (open ended) Por favor, descreva (pergunta aberta)</i>		
Pr_procure_22ba	Have you experienced any impacts on the volume of milk procured from suppliers due to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Enfrentou algum impacto no volume do leite comprado dos seus fornecedores devido à COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	*Select one option <i>selecione uma opção</i> *Enumerator: Please ask the respondent to distinguish between impacts due to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido à COVID-19 dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades militares, tanto quanto possível.	
Pr_procure_22b	How was the volume of milk procured from suppliers been impacted by COVID-19 and associated restrictions in the last 12 months (February 1, 2020 – January 31, 2021), if at all? <i>Como é que o volume de leite comprado aos seus fornecedores foi afectado pela COVID-19 e as restrições associadas, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Permaneceu na mesma</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option <i>selecione apenas uma opção</i> *Ask if pr_procure_22ba=1 Faça esta pergunta se pr_procure_22ba=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_procure_23b	How many liters per month did your procurement decrease as a result of COVID-19? Quantos litros por mês decresceu a compra de leite como resultado da COVID-19?	*Ask if pr_procure_22b=2 Faça esta pergunta se pr_procure_22b=2 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Pr_procure_24b	How was the price paid to suppliers impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço pago aos fornecedores foi afectado pela COVID-19, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe / se recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_procure_22ba=1 Faça esta pergunta se pr_procure_22ba=1	
Pr_procure_25b	How many meticals/liter did the price paid to suppliers decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro, o preço pago aos fornecedores diminuiu como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_procure_24b=2 Faça esta pergunta se pr_procure_24b=2 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Pr_procure_26b	How many meticals/liter did the price paid to suppliers increase as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro, o preço pago aos fornecedores aumentou como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_procure_24b=1 Faça esta pergunta se pr_procure_24b=1 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		recusa-se a responder	
Pr_procure_27b	What other challenges in procurement of milk have you faced as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? ? Que outros desafios enfrentou na aquisição de leite como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_procure_22ba=1 Faça esta pergunta se pr_procure_22ba=1	
Pr_procure_22a	Are there any lingering impacts on the volume of milk procured from suppliers due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Existem ainda alguns impactos prevaletentes do Ciclone Idai no volume de leite comprado aos seus fornecedores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não	*Select one option selecione uma opção *Enumerator: Explain that they should only think about the impact of Cyclone Idai in the last 12 months and not before that. Please also ask them to not consider impacts due to Cyclone Eloise, COVID-19, or military hostilities. *Inquiridor: Explique que eles devem pensar apenas no impacto do Ciclone IDAI nos últimos 12 meses e não antes disso. Peça também que eles não considerem os impactos devido ao Ciclone Eloise, COVID-19 ou	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		hostilidades militares.	
Pr_procure_22a	How was the volume of milk procured from your suppliers impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite comprado nos seus fornecedores foi afectado pelo Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_procure_22_aa =1 Faça esta pergunta se pr_procure_22_aa =1	Indicator: #1
Pr_procure_23a	How many liters per month did your procurement decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? ? Quantos litros de leite por mês diminuíram nas suas compras devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_procure_22=2 Faça a pergunta se pr_procure_22=2 *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Pr_procure_24a	How was the price paid to suppliers impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o preço do leite pago aos fornecedores devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_procure_22_aa =1 Faça a pergunta se pr_procure_22_aa =1	Indicator: #1
Pr_procure_25a	How many meticals/liter did the price paid to suppliers decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro baixou no preço pago aos fornecedores, devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_procure_24a=2 Faça esta pergunta se pr_procure_24a=2 *Enter -99 if do not know/refuse to answer *Digite -99	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		se o entrevistado não sabe ou recusa-se a responder	
Pr_procure_26a	How many meticals/liter did the price paid to suppliers increase as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Quantos meticais por litro aumentou no preço pago ao fornecedores, devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i>	*Ask if pr_procure_24a=1 *Enter -99 if do not know/refuse to answer* <i>Digite -99 se o entrevistado não sabe ou recusa-se a responder</i>	
Pr_procure_27a	What recent challenges in milk procurement have you faced as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? <i>Que recente desafios enfrentou na aquisição de leite como resultado do Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_procure_22_aa=1 <i>Faça esta pergunta se pr_procure_22_aa=1</i>	
Pr_procure_22c a	Have you experienced any impacts on the volume of milk procured from suppliers due to military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Enfrentou algum impacto no volume do leite comprado aos seus fornecedores devido às hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	*Select one option <i>selecione uma opção</i> *Enumerator: Please ask the respondent to distinguish between impacts due to military hostilities and any lingering impacts of Cyclone Idai, Cyclone Eloise, or COVID-19, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido às	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		hostilidades militares e os impactos remanescentes do Ciclone IDAI, Ciclone Eloise ou COVID-19, na medida do possível.	
Pr_procure_22c	How was the volume of milk procured from your suppliers impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite adquirido aos fornecedores foi afectado pelas hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_procure_22ca=1 Faça esta pergunta se pr_procure_22ca=1	
Pr_procure_24c	How was the price paid to your suppliers impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Qual foi o impacto das hostilidades militares no preço pago aos seus fornecedores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_procure_22ca=1 Faça esta pergunta se pr_procure_22ca=1	
Pr_procure_27c	What other challenges in milk procurement have you faced as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? Que outros desafios enfrentou na aquisição de leite como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de mencionar são de curto ou longo-prazo? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_procure_22ca=1 Faça esta pergunta se pr_procure_22ca=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition]: Enumerator: Now let's talk about your processing of milk and milk products Inquiridor: Agora vamos falar do seu processamento de leite e produtos lácteos			
Pr_process_record	Does the record book have information on milk processing? O livro de registos tem informação sobre o processamento? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_record = 1 Faça esta pergunta se pr_record = 1	
Pr_process_1	In the last dry season (May through October 2020) what total volume of milk has the business processed over the entire season? Que volume de leite o seu negócio processou ao longo de toda última época seca (Maio a Outubro 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *Ensure number is ≤ pr_procure_2 *Assegure que o número é menor ou igual pr_procure_2	
Pr_process_2	What is the total capacity in liters that you could process on a daily basis on average, in the last dry season (May through October 2020)? Qual é a capacidade em litros que processava, em média, diariamente, na última época seca (Maio a Outubro 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	
Pr_process_2_1	On average how many liters of processing capacity was utilized daily in the last dry season (May through October 2020)? Em média, quantos litros da capacidade de processamento foi utilizada diariamente na última época seca (Maio a Outubro 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_process_3	In the last rainy season (November 2019 through April 2020) what total volume of milk has the business processed over the entire season? <i>Que volume de leite o seu negócio processou em toda última a época chuvosa (Novembro 2019 a Abril 2020)?</i>	*Enter in liters <i>*Insira em litros</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se o entrevistado não sabe ou recusa-se a responder</i> *Ensure number is $\leq$ pr_procure_6 <i>*Assure que o número é menor ou igual pr_procure_6</i>	
Pr_process_4	What is the total capacity in liters that you can process on a daily basis on average, in the last rainy season (November 2019 through April 2020)? <i>Qual é a capacidade em litros que podia processar, em média, diariamente, na última época chuvosa (Novembro 2019 a Abril 2020)?</i>	*Enter in liters <i>*Insira em litros</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se o entrevistado não sabe ou recusa-se a responder</i>	
Pr_process_4_1	On average how many liters of processing capacity was utilized daily in the last rainy season (November 2019 through April 2020)? <i>Em media, quantos litros da capacidade de processamento foi utilizada diariamente na última época chuvosa (Novembro 2019 a Abril 2020)?</i>	*Enter in liters <i>*Insira em litros</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se o entrevistado não sabe ou recusa-se a responder</i>	
[Transition]: Enumerator: Great! Now, let's talk about your milk and milk product sales <i>Inquiridor: Ótimo! Agora vamos falar acerca das suas vendas de leite e productos lácteos</i>			
Pr_sales_1	Which of the following value-added activities does your business undertake? <i>Quais das seguintes actividades de valor-acrescentado o seu negócio de processamento realizou?</i> 0 No value-added activities <i>Nenhuma actividade de valor acrescentado</i> 1 Processing <i>Processamento</i>	*Select all that apply <i>Selecione todas que se aplicam</i> *Ensure that if "No value-added activities" or "Do not know" is	Indicator: #20

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	2 Refrigeration/chilling Refrigeração/arrefecimento 3 Pasteurization pasteirização 4 Storage Armazenagem 5 Homogenization Homogenização 6 Delivery to buyers Entrega aos compradores 7 Other, specify Outros, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	chosen no other option is chosen Assegure que se escolheu “Nenhuma actividade de valor acrescentado” ou “Não sabe”, nenhuma outra opção é escolhida	
Pr_sales_record 1	Does the record book have information on milk and milk product sales? O livro de registos tem informação das vendas de leite e produtos lácteos? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / se recusa a responder	*Select only one option selecione apenas uma opção *Ask if pr_record = 1 Faça esta pergunta se if pr_record = 1	
Pr_sales_2	In the last dry season (May through October 2020), what was the total volume sold of each type of milk product (e.g. processed milk, yogurt, cheese, etc.) and the price/unit you receive over the entire season? Na última época seca (Maio a Outubro 2020) qual foi o volume vendido de cada tipo de produto lácteo (ex. leite processado, iogurte, queijo, etc.) e o preço unitário que recebeu ao longo dessa época?	*If sell more than 5 products, ask for 5 most important ones *Se vende mais de 5 produtos, pergunte pelos 5 mais importantes *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Enter “0” if no sales *Digite “0” se não vende	

VARIABLE						ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Product Produto	Specify product Especifique o produto	Qty sold Quantidade vendida	Price/ unit Preço unitário	Unit Unidade		
	Product 1				1 Kg 2 Liters		
	Product 2				1 Kg 2 Liters		
	Product 3				1 Kg 2 Liters		
	Product 4				1 Kg 2 Liters		
	Product 5				1 Kg 2 Liters		
Pr_sales_3	What types of buyers has the business sold to – what is the total value sold to each buyer over the entire last dry season (May through October 2020)? A que tipo de compradores o negócio vendeu – qual é o valor total vendido a cada comprador ao longo de toda a época seca (Maio a Outubro 2020)?				*If more than 5 buyer types, ask for 5 most important ones *Se o entrevistado vende para mais de 5 compradores, pergunte pelos 5 mais importantes *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Enter “0” if no sales *Digite “0” se não vende *Enter in Metical *Insira em Meticais		
	Buyer Comprador	Specify buyer especifique o comprador	Total Value Valor total				
	Comprador 1						
	Comprador 2						
	Comprador 3						
	Comprador 4						

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_sales_4	What was the business's total value of sales of all milk products in the last dry season (May through October 2020)? <i>Please answer the total value over all the months of the dry season and not a monthly total</i> <i>Qual foi o valor total de vendas de todos os produtos lácteos na última estação seca (Maio a Outubro de 2020)? Por favor, indique o valor total de todos os meses na época seca e não de um total mensal .</i>	*Enter in Metical <i>*Insira em Meticais</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se o entrevistado não sabe ou recusa-se a responder</i> *Enter 0 if no sales <i>*Digite "0" se não vende</i> *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out <i>Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha</i>	Indicator: #1
Pr_sales_5	What was the businesses' total volume of sales in liters of milk products such as milk and yogurt in the last dry season (May through October 2020)? <i>Please answer the total volume over all the months of the dry season and not a monthly total</i> <i>Qual foi o volume total de vendas em litros dos produtos lácteos como leite e iogurte na última estação seca (Maio a Outubro de 2020)? Por favor, indiqueo volume total de todos os meses na época seca e não de um total mensal</i>	*Enter in liters <i>*Insira em litros</i> *Enter 0 if no sales <i>*Digite "0" se não vende</i> *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out <i>Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha</i>	Indicator: #2

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		*Ask only about sales of products which are measured in liters like milk and yogurt <i>*Pergunte apenas sobre os produtos que são medidos em litros como leite e iogurte</i>	
Pr_sales_6	What was the businesses' total volume of sales in kilograms of milk products such as cheese in the last dry season (May through October 2020)? <i>Please answer the total volume over all the months of the dry season and not a monthly total</i> <i>Qual foi o volume total de vendas em quilogramas dos produtos lácteos como queijo na última estação seca (Maio a Outubro de 2020)? Por favor; dê o volume total de todos os meses na época seca e não o total mensal .</i>	*Enter in liters <i>*Insira em litros</i> *Enter 0 if no sales <i>*Digite "0" se não vende</i> *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out <i>Se pr_sales_record1 = 1, preencha usando o livro de registro, caso contrário ,pergunte ao entrevistado e preencha</i> *Ask only about sales of products which are measured in kilograms like cheese <i>*Pergunte apenas sobre os produtos que são medidos em quilogramas como queijo</i>	Indicator: #2
Pr_sales_7	What is the total volume sold of milk products (e.g. processed milk, yogurt, cheese, etc.) and the price/unit in the last rainy season (November 2019 through April 2020) over the entire season?	*If sell more than 5 products, ask for 5 most important ones <i>*Se vende para mais de 5</i>	

VARIABLE						ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Na última época chuvosa (Novembro 2019 a Abril 2020) qual foi o volume vendido de cada tipo de produto lácteo (ex. leite processado, iogurte, queijo, etc.) e o preço unitário que recebeu ao longo dessa época?					produtos, pergunte pelos 5 mais importantes *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Enter 0 if no sales *Digite "0" se não vende	
	Product Produto	Specify product Especifique o produto	Qty sold Quantidade vendida	Price/ unit Preço unitário	Unit Unidade		
	Produto 1				1 Kg 2 Liters		
	Produto 2				1 Kg 2 Liters		
	Produto 3				1 Kg 2 Liters		
	Produto 4				1 Kg 2 Liters		
	Produto 5				1 Kg 2 Liters		
Pr_sales_8	What types of buyers has the business sold to – what is the total value sold in the last rainy season (November 2019 through April 2020) over the entire season? A que tipo de compradores o negócio vendeu – qual é o valor total vendido a cada comprador ao longo de toda a época chuvosa (Novembro 2019 a Abril 2020)?					*If more than 5 buyer types, ask for 5 most important ones *Se vende para mais de 5 compradores, pergunte pelos 5 mais importantes *If pr_sales_record1 =	
	Buyer Comprador	Specify buyer	Total Value Valor total				

VARIABLE				ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		especifique o comprador		1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1 , preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha *Enter 0 if no sales *Digite “0” se não vende *Enter in Metical *Insira em Meticais	
	Comprador 1				
	Comprador 2				
	Comprador 3				
	Comprador 4				
	Comprador 5				
Pr_sales_9	What was the businesses’ total value of sales of milk products in the last rainy season (November 2019 through April 2020)? <i>Please answer the total value over all the months of the rainy season and not a monthly total</i> Qual foi o valor total de vendas de todos os produtos lácteos na última época chuvosa (Novembro 2019 a Abril 2020)? Por favor responda o valor total de todos os meses na época seca e não o total mensal .			*Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe ou recusa-se a responder *Enter 0 if no sales *Digite “0” se não vende *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao entrevistado e preencha	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_sales_10	What was the businesses' total volume of sales in liters of milk products such as milk and yogurt in the last rainy season (November 2019 through April 2020)? <i>Please answer the total volume over all the months of the rainy season and not a monthly total</i> Qual foi o volume total de vendas em litros dos produtos lácteos como leite e iogurte na última época chuvosa (Novembro 2019 a Abril 2020)? <i>Por favor responda o volume total de todos os meses na época seca e não um total mensal.</i>	*Enter in liters *Insira em litros *Enter 0 if no sales *Digite "0" se não vende *If then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registro, caso contrário ,pergunte ao entrevistado e preencha *Ask only about sales of products which are measured in liters like milk and yogurt *Pergunte apenas sobre os produtos que são medidos em litros como leite e iogurte	Indicator: #2
Pr_sales_11	What was the businesses' total volume of sales in kilograms of milk products such as cheese in the last rainy season (November 2019 through April 2020)? <i>Please answer the total volume over all the months of the rainy season and not a monthly total</i> Qual foi o volume total de vendas em quilogramas dos produtos lácteos como queijo na última época chuvosa (Novembro 2019 a Abril 2020)? <i>Por favor, indique o volume total de todos os meses na época seca e não um total mensal.</i>	*Enter in liters *Insira em litros *Enter 0 if no sales *Digite "0" se não vende *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registro, caso contrário ,pergunte ao	Indicator: #2

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		entrevistado e preencha *Ask only about sales of products which are measured in kilograms like cheese *Pergunte apenas sobre os produtos que são medidos em kilogramas como queijo	
Pr_sales_12	Did the business have any agreement with a buyer in the last 12 months (February 1, 2020 – January 31, 2021)? O processador teve algum contrato com um comprador nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	Indicator: #23
Pr_sales_13	How many agreements did you have with buyers in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos contratosteve com compradores nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_12 = 1 Faça esta pergunta se pr_sales_12 = 1 *Enter -99 if do not know/refuse to answer *Digite -99 se não sabe / recusa-se a responder *If pr_sales_record1 = 1 then fill from record book, else ask respondent and fill out Se pr_sales_record1 = 1, preencha usando o livro de registo, caso contrário ,pergunte ao	Indicator: #23

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		entrevistado e preencha	
Pr_sales_13a	Did the MERCADO project provide any linkages/introductions to new buyers/retailers? O projecto MERCADO facilitou alguma ligação/apresentação a novos compradores/retalhistas? Please describe (open-ended) Por favor, descreva (pergunta aberta)		
Pr_sales_14	How are milk/milk products transported to your buyers? Como o leite/produtos lácteos são transportados para seus compradores? 1 Buyer comes to our doorstep O comprador vem à nossa porta 2 Business travels to sell milk to buyer O processador vai ao encontro do comprador para vender leite 3 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / se recusa a responder	*Select all that apply Seleccione todas as opções que se aplicam	
Pr_sales_15	What challenges, if any, did the business face in marketing milk and milk products in the last 12 months? How does this affect the business' ability to make a profit? Que desafios, se existiram, que o processador enfrentou na comercialização de leite e produtos lácteos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Como isto afectou a capacidade do processador de gerar lucros? Please describe (open-ended) Por favor, descreva (pergunta aberta)		
Pr_sales_16	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address marketing challenges? What support provided by MERCADO, if any, has been successful? Como é que o processador enfrentou esses desafios? O que funcionou, o que não resultou? O projecto MERCADO o ajudou de alguma forma a abordar os desafios de marketing? Que apoio do projecto MERCADO, se existe, tem tido sucesso?	*If no challenges, skip question *Se não há desafios salte a questão	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_sales_17	What does the business think will be necessary to successfully tackle these challenges? O que o processador julga que será necessário para enfrentar com sucesso esses desafios? <i>Please describe (open-ended)) Por favor, descreva (pergunta aberta)</i>	*If no challenges, skip question *Se não há desafios salte a questão	
Pr_sales_18	Have you seen any changes in milk /milk products sales since participation in the MERCADO project, if at all? Tem visto alguma mudança na venda de leite/produtos lácteos desde que começou a participar no projecto MERCADO? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção	
Pr_sales_19a	How do you think milk sales changed because of the MERCADO project? Como julga que a venda de leite mudou devido ao projecto MERCADO? <i>Please describe (open ended) Por favor, descreva (pergunta aberta)</i>		
pr_sales_20ba	Have you experienced any impacts on the volume of milk sold due to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? A COVID-19 teve algum impacto no volume do leite vendido nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Não	*Select one option selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts dues to COVID-19 and lingering impacts of Cyclone Idai, Cyclone Eloise, or military hostilities, to the extent possible. *Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido à COVID-19	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		dos impactos remanescentes do Ciclone Idai, Ciclone Eloise ou hostilidades militares, tanto quanto possível.	
Pr_sales_20b_1	How was the volume of milk sales impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite vendido foi afectado pela COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20ba=1 Faça esta pergunta se pr_sales_20ba=1	Indicator: #1
Pr_sales_20b_2	How many liters per month did your sales decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos litros por mês decresceram as suas vendas como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_20b_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Pr_sales_21b_1	How was the price received for your milk impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço recebido pelo seu leite foi afectado pela COVID-19, nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20ba=1 Faça esta pergunta se pr_sales_20ba=1	Indicator: #1
Pr_sales_21b_2	By how many meticals/liter did the price received by you decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro, o preço recebido pela empresa reduziu como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_21b_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		não sabe / recusa-se a responder	
Pr_sales_22b_1	How was the volume of milk product (e.g. yogurt, cheese, etc.) sales impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de vendas de produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afectado pela COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_sales_20ba=1 Faça esta pergunta se pr_sales_20ba=1	Indicator: #1
Pr_sales_22b_2	How many kilograms per month did your sales decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos quilogramas por mês as suas vendas diminuíram como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_22b_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
pr_sales_23b_1	How was the price received for your milk product (e.g. yogurt, cheese, etc.) sales impacted by COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço recebido pelos seus produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afectado pela COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20ba=1 Faça esta pergunta se pr_sales_20ba=1	Indicator: #1
Pr_sales_23b_2	By how many meticals/kilogram did the price received by you for milk product sales decrease as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Por quantos meticais / quilograma o preço recebido pela venda dos seus produtos lácteos diminuiu como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_23b_1=2 Faça esta pergunta se pr_sales_23b_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		não sabe /recusa-se a responder	
pr_sales_24b	What other challenges have you faced in milk and milk product sales as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? <i>Que outros desafios enfrentou nas vendas de leite e produtos lácteos como resultado da COVID-19 nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de descrever são de curto ou longo prazo?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_sales_20ba=1 <i>Faça esta pergunta se pr_sales_20ba=1</i>	
pr_sales_20aa	Are there any lingering impacts on the volume of milk sold due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Existem ainda alguns impactos persistentes do Ciclone Idai no volume de leite vendido nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	*Select one option <i>selecione uma opção</i> *Enumerator: Explain that they should only think about the impact of Cyclone Idai in the last 12 months and not before that. Please also ask them to not consider impacts due to Cyclone Eloise, COVID-19, or military hostilities. *Inquiridor: <i>Explique que eles devem pensar apenas no impacto do Ciclone IDAI nos últimos 12 meses e não antes disso. Peça também que eles não considerem os impactos devido ao Ciclone Eloise, COVID-19 ou</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		hostilidades militares.	
Pr_sales_20a_1	How was the volume of milk sales impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de leite vendido foi afectado pelo ciclone Idai nos últimos 12 meses? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20aa=1 Faça a pergunta se pr_sales_20aa=1	Indicator: #1
Pr_sales_20a_2	How many liters per month did your sales decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos litros de leite diminuiram por mês, nas suas vendas devido ao ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_20a_1=2 Faça a pergunta se pr_sales_20a_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
Pr_sales_21a_1	How was the price received for your milk impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como alterou o preço recebido pelo leite devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe /recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20aa=1 Faça a pergunta se pr_sales_20aa=1	Indicator: #1
Pr_sales_21a_2	By how many meticals/liter did the price received by you decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos meticais por litro de leite reduziu o preço de venda devido ao Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_21a_1=2 Faça a pergunta se pr_sales_21a_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_sales_22a_1	How was the volume of milk product (e.g. yogurt, cheese, etc.) sales impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de vendas de produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afectado pelo Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_sales_20aa=1 Faça esta pergunta se pr_sales_20aa=1	Indicator: #1
Pr_sales_22a_2	How many kilograms per month did your sales decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos quilogramas por mês as suas vendas diminuíram como resultado da Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_22a_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
pr_sales_23a_1	How was the price received for your milk product (e.g. yogurt, cheese, etc.) sales impacted by Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço recebido pelos seus produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afectado pelo Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20aa=1 Faça a pergunta se pr_sales_20aa=1	Indicator: #1
Pr_sales_23a_2	By how many meticals/kilogram did the price received by you for milk product sales decrease as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Por quantos meticais / quilograma o preço recebido pela venda dos seus produtos lácteos diminuiu como resultado da Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_sales_23a_1=2 *Enter -99 if do not know/refuse to answer Digite -99 se o entrevistado não sabe / recusa-se a responder	
pr_sales_24a	What recent challenges have you faced in milk and milk product sales as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-	*Ask if pr_sales_20aa=1 Faça a pergunta se pr_sales_20aa=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	term or long-term? <i>Que outros desafios enfrentou nas vendas de leite e produtos lácteos como resultado da Ciclone Idai nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Acha que os efeitos que acabou de descrever são de curto ou longo prazo?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
pr_sales_20ca	Have you experienced any impacts on the volume of milk sold due to military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? <i>As hostilidades militares tiveram algum impacto no volume do leite vendido nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	<i>*Select one option selecione uma opção</i> *Enumerator: Please ask the respondent to distinguish between impacts dues to military hostilities and any lingering impacts of Cyclone Idai, Cyclone Eloise, or COVID-19, to the extent possible. <i>*Inquiridor: Peça ao entrevistado para distinguir entre os impactos devido às hostilidades militares e os impactos remanescentes do Ciclone IDAI, Ciclone Eloise ou COVID-19, na medida do possível.</i>	
Pr_sales_20c_1	How was the volume of milk sales impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? <i>Como foi que o volume de leite vendido foi afetado pelas hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i> 1 Increased <i> aumentou</i> 2 Decreased <i> diminuiu</i>	<i>*Select only one option selecione apenas uma opção</i> *Ask if pr_sales_20ca=1 <i>Faça a pergunta se pr_sales_20ca=1</i>	Indicator: #1

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Pr_sales_21c_1	How was the price received for your milk impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Qual foi o impacto das hostilidades militares no preço recebido pelo seu leite nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20ca=1 Faça a pergunta se pr_sales_20ca=1	Indicator: #1
Pr_sales_22c_1	How was the volume of milk product (e.g. yogurt, cheese, etc.) sales impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o volume de vendas de produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afetado pelas hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Selection only one option selecione apenas uma opção *Ask if pr_sales_20ca=1 Faça a pergunta se pr_sales_20ca=1	Indicator: #1
pr_sales_23c_1	How was the price received for your milk product (e.g. yogurt, cheese, etc.) sales impacted by military hostilities in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que o preço recebido pela venda dos seus produtos lácteos (por exemplo, iogurte, queijo, etc.) foi afetado pelas hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Increased aumentou 2 Decreased diminuiu 3 Stayed the same permaneceu na mesma -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção *Ask if pr_sales_20ca=1 Faça a pergunta se pr_sales_20ca=1	Indicator: #1
pr_sales_24c	What other challenges have you faced in milk and milk product sales as a result of military hostilities in the last 12 months (February 1, 2020 – January 31, 2021)? Do you think the effects that you just described are short-term or long-term? Que outros desafios	*Ask if pr_sales_20ca=1 Faça a pergunta se pr_sales_20ca=1	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	enfrentou nas vendas de leite e produtos lácteos como resultado das hostilidades militares nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021? Pensa que os efeitos que acabou de descrever são de curto ou longo prazo? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		

SECTION 3: MILK QUALITY TESTING

[Transition]: Enumerator: Now let's talk about milk quality checks and milk testing on incoming milk *Inquiridor: Agora vamos falar sobre o controle de qualidade e da testagem do leite recebido dos fornecedores*

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP
Pr_qual_1	Does your business do any quality testing on incoming milk? <i>Faz algum teste de qualidade do leite recebido dos fornecedores?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select only one option <i>selecione apenas uma opção</i> *If pr_qual_1=-99, go to pr_qual_5 <i>Se pr_qual_1=-99, salte para pr_qual_5</i>	Indicators: #25, #26
Pr_qual_1_1	Why do you or do you not do any milk quality testing? <i>Porquê faz ou não faz algum teste de qualidade do leite recebido dos fornecedores?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_qual_2	What do you test for? <i>Que testes faz?</i> 1 Water adulteration <i>Adulteração com água</i> 2 Bacteria <i>Bactérias</i> 3 Butter and fat content <i>Teor de gordura</i> 4 Antibiotic residue <i>Resíduo de antibiótico</i> 5 pH testing <i>Teste de pH</i> 6 Testing for mastitis <i>Teste de mastitis</i> 7 Testing for freshness of milk <i>Frescura do leite</i> 8 Other, specify <i>Outro, especifique</i> -99 Do not know/refuse to answer <i>Não sabe / recusa-se a responder</i>	*Select all that apply <i>Selecione todas as opções que se aplicam</i> *Ask if pr_qual_1=1 <i>Faça esta pergunta se pr_qual_1=1</i> *Prompt with responses <i>sugira as respostas</i>	Indicators: #25, #26
Pr_qual_3	Do you test all deliveries, do random testing, or test on an ad hoc basis? <i>Faz teste em todas as entregas, faz testes aleatórios ou faz teste quando for necessário?</i> 1 Test all deliveries <i>Teste em todas as entregas</i> 2 Random check <i>verificação aleatória</i> 3 Ad-hoc/judgement basis <i>Quando necessário / na base de julgamento</i>	*Select only one option <i>selecione apenas uma opção</i> *Ask if pr_qual_1=1 <i>Faça esta pergunta se pr_qual_1=1</i>	Indicators: #25, #26

	-99 Do not know/refuse to answer Não sabe /recusa-se a responder		
Pr_qual_4	What instruments did your business use for testing milk during the collection process in the last 12 months (February 1, 2020 – January 31, 2021)? Que instrumentos usou para testar o leite durante o processo de recolha nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 0 No instruments Nenhum instrumento 1 Taste, smell, visual observation Sabor, cheiro, observação visual 2 Milk density (use of lactometer) Densidade do leite (uso de lactómetro) 3 Clot-on boiling tests Coágulos no teste de fervura 4 Gerber tests for fat Teste Gerber para gordura 5 pH tests level of acidity (lactic acid in milk) Testes de pH para a acidez (ácido láctico no leite) 6 Temperature Temperatura 7 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if pr_qual_1=1 Faça esta pergunta se pr_qual_1=1 *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “No instruments” or “Do not know” option is chosen, no other option is selected *Assegure que se digitar “Nenhum instrumento” ou “Não sabe” nenhuma outra opção é escolhida	Indicators: #25, #26, #30
Pr_qual_4_1	What instruments did your business use for testing milk during the collection process between July 2019 to February 2020? Que instrumentos usou para testar o leite durante o processo de recolha no período entre Julho 2019 e Fevereiro 2020? 0 No instruments Nenhum instrumento 1 Taste, smell, visual observation Sabor, cheiro, observação visual 2 Milk density (use of lactometer) Densidade do leite (uso de lactómetro) 3 Clot-on boiling tests Coágulos no teste de fervura 4 Gerber tests for fat Teste Gerber para gordura 5 pH tests level of acidity (lactic acid in milk) Testes de pH para a acidez (ácido láctico no leite) 6 Temperature Temperatura 7 Other, specify Outro, especifique	*Ask if pr_qual_1=1 Faça esta pergunta se pr_qual_1=1 *Select all that apply Selecione todas as opções que se aplicam *Ensure that if “No instruments” or “Do not know” option is chosen, no other option is selected *Assegure que se digitar “Nenhum instrumento” ou “Não sabe” nenhuma outra opção é escolhida	

	-99 Do not know/refuse to answer Não sabe / recusa-se a responder		
Pr_qual_5	Has your business rejected any milk on safety and/or quality grounds in the last 12 months (February 1, 2020 – January 31, 2021)? A sua empresa rejeitou algum leite por motivo de segurança e / ou qualidade nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes Sim 2 No Nao -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	Indicators: #21, #25, #26
Pr_qual_6a	On average, what number of liters of incoming milk did your business reject on quality grounds during the last dry season (May through October 2020)? Em média, quantos litros de leite recebido na sua empresa foi rejeitado por motivos de qualidade durante a última época seca (Maio a Outubro de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse *Digite -99 se não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question *Se houver registros sobre a rejeição do leite, peça que lhe mostrem os seus registros e preencha com base nos registros, caso contrário faça a pergunta	
Pr_qual_6	On average, what percentage of incoming milk did your business reject on quality grounds during the last dry season (May through October 2020)? Em média, que percentagem de leite recebido rejeitou por causa da qualidade durante a última época seca (Maio a Outubro de 2020)?	*Ask if pr_qual_5= 1 Faça esta pergunta se pr_qual_5= 1 *Ensure only numbers between 0 and 100 can be entered *assegure que apenas números entre 0 e	Indicators: #25, #26

		100 possam ser inseridos *Enter -99 if do not know/refuse Digite -99 se o entrevistado não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question Se houver registros para isso, peça que mostrem seus registros e preencham os registros, senão faça a pergunta	
Pr_qual_7a	On average, what number of liters of incoming milk did your business reject on quality grounds during the last rainy season (November 2019 through April 2020)? Em média, quantos litros de leite recebido na sua empresa foi rejeitado por motivos de qualidade durante a última época chuvosa (Novembro de 2019 a Abril de 2020)?	*Enter in liters *Insira em litros *Enter -99 if do not know/refuse *Digite -99 se não sabe /recusa-se a responder *If there have records for this, then ask them to show their records and fill out from record, else ask the question *Se houver registros sobre a rejeição do leite, peça que lhe mostrem os seus registros e preencha com base nos registros, caso contrário faça a pergunta	
Pr_qual_7	On average, what percentage of incoming milk did your business reject on quality grounds	*Ask if pr_qual_5=1	

	during the last rainy season (November 2019 through April 2020)? ? Em média, que percentagem de leite recebido rejeitou por causa da qualidade durante a última época chuvosa (Novembro 2019 a Abril 2020)?	Faça esta pergunta se pr_qual_5= 1 *Ensure only numbers between 0 and 100 can be entered *assegure que apenas números entre 0 e 100 possam ser inseridos *Enter -99 if do not know/refuse Digite -99 se não sabe /recusa-se a responder	
Pr_qual_8	Does the business adjust the price paid for milk on the basis of any quality parameters (e.g. milk freshness) O processador ajusta o preço pago pelo leite com base em qualquer parâmetro de qualidade (por exemplo, frescura)? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Pr_qual_9	How is the price adjusted? Como é que o preço é ajustado? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_qual_8=1 Faça esta pergunta se pr_qual_8=1	
Pr_qual10	Did you make any change to your milk-testing procedures based on any training you received? If so, what training? How? Fez alguma modificação nos procedimentos de testagem do leite com base em algum treinamento que recebeu? Se sim, que treinamento? Como? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if pr_train1 = 6 Faça esta pergunta se pr_train1 = 6	

SECTION 4: EQUIPMENT, FINANCE, AND INVESTMENTS

[Transition]: Enumerator: Now, we want to talk about your equipment, financing, and investments **Inquiridor: Agora gostaríamos de falar sobre o seu equipamento, financiamento e investimentos**

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition]: Enumerator: Let's first talk about the equipment you currently own Inquiridor: Vamos falar primeiro acerca do equipamento que possui actualmente			
Pr_equip_1	What types of major equipment and facilities do you have? Que tipos de equipamentos e instalações importantes possui? 1 Bulk milk tank tanque de leite 2 Pasteurizer pasteurizador 3 Chilling system sistema de refrigeração 4 Bulk fridge retails geleiras para retalho 5 Value-adding technology (please specify) Tecnologia para agregar valor (por favor, especifique) -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam *Prompt with options *sugira as opções *Ensure that if "Do not know" option is chosen, no other option is selected *Assegure que se digitar "Não sabe" nenhuma outra opção é escolhida	Indicators: #13, #14, #27
[Enumerator instruction]: For each <<type of major equipment>>, ask the following questions. Ask questions "pr_equip_2 – pr_equip_6" for applicable options selected in "equip_1" Para cada <<tipo de equipamento principal>> faça as perguntas seguintes. Pergunte se tiver sido selecionada a opção no "equip_1"			
Pr_equip_2\$1 Pr_equip_2\$2 Pr_equip_2\$3 Pr_equip_2\$4 Pr_equip_2\$5	How many of <<type of major equipment>> do you own? Quantos << tipo de equipamento principal >> você possui?	*Enter -99 if do not know/refuse to answer Digite - 99 se não sabe / recusa-se a responder	
Pr_equip_3\$1 Pr_equip_3\$2 Pr_equip_3\$3 Pr_equip_3\$4 Pr_equip_3\$5	Is the <<type of major equipment>> currently in working order? O << tipo de equipamento principal >> está actualmente em funcionamento? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Pr_equip_4\$1 Pr_equip_4\$2 Pr_equip_4\$3 Pr_equip_4\$4 Pr_equip_4\$5	What is the total capacity of <<type of major equipment>> in the last 12 months (February 1, 2020 – January 31, 2021)? (in m³) Qual a capacidade total do << tipo de equipamento	*Enter -99 if do not know/refuse to answer Digite - 99 se não sabe /	Indicator: #27

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	principal >> nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? (em m ³)	recusa-se a responder	
Pr_equip_5\$1 Pr_equip_5\$2 Pr_equip_5\$3 Pr_equip_5\$4 Pr_equip_5\$5	In what year was <<type of major equipment>> installed? Em que ano foi o << tipo de equipamento principal >> instalado?	*Enter -99 if do not know/refuse to answer Digite - 99 se não sabe /recusa-se a responder	Indicator: #27
Pr_equip_6	Have you seen any changes in the purchase or improvement of any of the equipment you just talked about since participation in the MERCADO project, if at all? Notou alguma alteração na compra ou melhoramento de algum dos equipamentos referidos desde que começou a participar no projecto MERCADO? Please describe (open-ended) Por favor, descreva (pergunta aberta)		
[Transition]: Enumerator: Now I want to ask you questions about your investments Inquiridor: Agora gostaria de lhe fazer perguntas sobre seus investimentos			
Pr_invest_1	Did your business make any investments in its business in the last 12 months (February 1, 2020 – January 31, 2021)? O seu empreendimento realizou algum investimento no seu negócio nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	Indicator: #31
Pr_invest_2	What investments did the business make? Que investimentos a empresa fez? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*Ask if pr_invest_1=1 Faça esta pergunta se pr_invest_1=1	
Pr_invest_3	In total, how much did your business spend in new investments in the last 12 months (February 1, 2020 – January 31, 2021)? No total, quanto gastou o seu empreendimento em novos investimentos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_invest_1=1 Faça esta pergunta se pr_invest_1=1 *Explain that this could mean expenditure on new machinery, new software, new marketing	Indicator: #31

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
		investments, new vehicles etc. *Explique que isto significa despesas com nova maquinaria, novo software, investimentos em publicidade, novos veículos, etc. *Enter -99 if don't know/refuse Digite -99 se o entrevistado não sabe /recusa-se a responder *If multiple investments were made, enter total amount invested in last 12 months *Se fez multiplos investimentos insira o valor total investido nos últimos 12 meses	
Pr_invest_4	What was the main source of financing for the investments in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi a principal fonte de financiamento para os investimentos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Self-financed Auto-financiado 2 Informal sources(family, neighbours, friends) fontes informais (família, vizinhos, amigos) 3 Formal loans (banks etc.) Empréstimos formais (bancos, etc.) 4 Grant donativos 5 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
pr_invest_4_1	Was this grant from the MERCADO project's Dairy Innovation Fund? O donativo foi do Fundo para a Inovação Leiteira do projecto MERCADO? 1 Yes Sim	*Ask if pr_invest_4 = 4	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option Selecione apenas uma opção	
Pr_invest_5	Does the business have any specific plans to invest in new equipment in the coming year? O processador tem algum plano específico para investir em novos equipamentos no próximo ano? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Pr_invest_5a	Has COVID-19 affected the purchase or improvement of any of the equipment? A COVID-19 afectou a compra ou o melhoramento de algum equipamento? 1 Yes sim 2 No não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
Pr_invest_5b	How has COVID-19 affected the purchase or improvement of any of the equipment? Como é que a COVID-19 afectou a compra ou o melhoramento de algum equipamento? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if Pr_invest_5a=1 Faça esta pergunta se Pr_invest_5a=1	
[Transition]: Enumerator: Great! Now, let's talk about your financing and credit Inquiridor: Ótimo! Agora vamos falar sobre o seu financiamento e crédito			
Pr_credit_1	Did your business request or receive credit for any production costs in the last 12 months (February 1, 2020 – January 31, 2021)? O seu empreendimento solicitou ou recebeu crédito para algum custo de produção nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Yes, applied and received Sim, candidatou-se e recebeu 2 Yes, applied and did not receive Sim, candidatou-se e não recebeu 3 No have not applied Não se candidatou -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option Selecione apenas uma opção *If pr_credit_1 = 1, go to pr_credit_3 Se pr_credit_1 = 1, salte para pr_credit_3 *If pr_credit_1 = 3 OR pr_credit_1 = -99, go to pr_credit_7 Se pr_credit_1 = 3 OU pr_credit_1 = -99, salte para pr_credit_7	Indicator: #33

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_credit_2	Why did your business not receive any loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)?)? Porquê o seu empreendimento não recebeu empréstimos de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 No formal financial institution present Não existe nenhuma instituição financeira formal 2 Lack of collateral Falta de garantia 3 High interest rate alta taxa de juros 4 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if pr_credit_1 = 2 *Select all that apply Selecione todas as opções que se aplicam	
Pr_credit_3	What were the primary purposes for obtaining loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)? Quais foram os principais objectivos para obter empréstimos de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Buying equipment for business compra de equipamentos para o negócio 2 Managing short-term cash shortage Gestão de falta de dinheiro a curto prazo 3 Managing any unplanned shock to business Gestão de qualquer choque não planeado nos negócios 4 Business expansion Expansão de negócios 5 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Ask if pr_credit_1 = 1 Faça esta pergunta se pr_credit_1 = 1 *Select all that apply Selecione todas as opções que se aplicam	
Pr_credit_4	What is the total value of loans from formal sources that your business obtained in the last 12 months (February 1, 2020 – January 31, 2021)? Qual é o valor total dos empréstimos de fontes formais que o seu empreendimento obteve nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Ask if pr_credit_1 = 1 Faça esta pergunta se pr_credit_1 = 1 *Enter in Metical *Insira em Meticais *Enter -99 if do not know/refuse to answer *Digite -99 se o entrevistado não sabe/recusa-se a responder	Indicator: #33

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_credit_5	At what interest rate did you borrow in the last 12 months (February 1, 2020 – January 31, 2021)? Think about only loans from formal sources <i>A que taxa de juro obteve os empréstimos nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? Pense apenas em empréstimos de fontes formais</i>	*Ask if pr_credit_1 = 1 <i>Faça esta pergunta se pr_credit_1 = 1</i> *Enter -99 if do not know/refuse to answer <i>*Digite -99 se não sabe/recusa-se a responder</i> *If interest rates differ across various sources, enter average interest rate <i>*Se teve diferentes taxas de juro de várias fontes, insira a média</i>	
Pr_credit_6	What was the total cost of interest from paying off any business-related loans from formal sources in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Qual foi o custo total dos juros relativos aos empréstimos para os negócios, de fontes formais nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?</i>	*Ask if pr_credit_1 = 1 <i>Faça esta pergunta se pr_credit_1 = 1</i> *Enter in Metical <i>*Insira em Meticais</i> *Enter 0 if this expense was not incurred <i>*Insira 0 se esta despesa não foi feita</i> *Ensure total cost in last 12 months is quoted <i>*Assegure que é mencionado o custo total nos últimos 12 meses</i>	
Pr_credit_6_1	What time was allocated for repayment? <i>Qual foi o período para pagamento?</i> <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>		
Pr_credit_7	Has your business used any other financial products in the last 12 months (February 1, 2020 –	*Select all that apply <i>Selecione</i>	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	January 31, 2021)? O seu empreendimento usou algum outro produto financeiro nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 No não 2 Business insurance Seguro Empresarial 3 Livestock insurance Seguro de gado 4 Mutual funds fundos de garantias 5 Capital gain bonds títulos de capital 6 Other, specify Outros , especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	todas as opções que se aplicam *Prompt with options *Apresente as opções * Ensure that if “No” or “Do not know” options are chosen, no other option is selected *Assegure que se “não” ou “não sabe” forem escolhidos, nenhuma outra opção é selecionada	
Pr_credit_8	What financing challenges, if any, does the business face? How does this affect the business’ ability to make a profit? Que desafios de financiamento, se existem, o processador enfrenta? Como é que esses desafios afectam a capacidade de o processador gerar lucros? Please describe (open-ended) Por favor, descreva (pergunta aberta)		
Pr_credit_9	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address financing challenges? What support provided by MERCADO, if any, has been successful? Como o negócio tentou enfrentar esses desafios? O que funcionou? O que não resultou? O projecto MERCADO lhe ajudou, de alguma forma, a enfrentar os desafios do financiamento? Que apoio dado pelo projecto MERCADO, se algum, tem tido sucesso? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*If no challenges, skip question *Se não existiram desafios, salte a questão	
Pr_credit_10	What does the business think will be necessary to tackle these financing challenges? O que o processador acha que será necessário para enfrentar esses desafios de financiamento? Please describe (open-ended) Por favor, descreva (pergunta aberta)	*If no challenges, skip question *Se não existiram desafios, salte a questão	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_credit_10a	Has COVID-19 led to financing challenges? A COVID-19 levou a desafios de financiamento? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option Selecione apenas uma opção	
P_credit_10b	How has COVID-19 affected what the business thinks will be necessary to tackle financing challenges? Como a COVID-19 afectou o que o processador acha que seria necessario para resolver os desafios de financiamento? <i>Please describe (open-ended) Por favor, descreva (pergunta aberta)</i>	*Ask if Pr_credit_10a =1 Faça esta pergunta se Pr_credit_10a =1	

SECTION 5: STAFFING

[Transition]: Enumerator: Thank you! Now we want to talk to you about your staffing.

Inquiridor: Muito obrigado! Agora gostaria de lhe perguntar acerca do seu pessoal

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Pr_labor	Which of the following types of employees did your business employ in the last 12 months (February 1, 2020 – January 31, 2021)? Quais dos seguintes tipos de empregados o seu empreendimento empregou nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)? 1 Full time permanent - Male Tempo inteiro permanente - Masculino 2 Full-time permanent - Female Tempo inteiro permanente - feminino 3 Part Time Permanent - Male Regime parcial permanente - masculino 4 Part time permanent - Female Regime parcial permanente - feminino 5 Full-time seasonal - Male Tempo inteiro sazonal - masculino 6 Full-time seasonal - Female Tempo inteiro sazonal - feminino 7 Part-time seasonal - Male Regime parcial sazonal - masculino 8 Part-time seasonal - Female Regime parcial sazonal - feminino 9 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select all that apply Selecione todas as opções que se aplicam * Ensure that if “Do not know” option is chosen, no other option is selected *Assegure que se “não sabe” for escolhido, nenhuma outra opção é selecionada	
Pr_labor1	Which of the following types of employees did your business employ from July 2019 to February 2020? Quais dos seguintes tipos de empregados o seu empreendimento empregou de Julho 2019 a Fevereiro 2020)? 1 Full time permanent - Male Tempo inteiro permanente - Masculino 2 Full-time permanent - Female Tempo inteiro permanente - feminino 3 Part Time Permanent - Male Regime parcial permanente - masculino 4 Part time permanent - Female Regime parcial permanente - feminino 5 Full-time seasonal - Male Tempo inteiro sazonal - masculino	*Select all that apply Selecione todas as opções que se aplicam	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	6 Full-time seasonal - Female Tempo inteiro sazonal - feminino 7 Part-time seasonal - Male Regime parcial sazonal - masculino 8 Part-time seasonal - Female Regime parcial sazonal - feminino 9 Other, specify Outro, especifique -99 Do not know/refuse to answer Não sabe / recusa-se a responder		
[Enumerator Instructions]: For each <<type of employee>> please answer the following questions. Ask only for applicable options selected in “pr_labor” Para cada tipo de empregado, por favor responda as seguintes questões. Pergunte apenas para as opções aplicáveis selecionadas no “pr-labor”			
pr_labor0\$1 pr_labor0\$2 pr_labor0\$3 pr_labor0\$4 pr_labor0\$5 pr_labor0\$6 pr_labor0\$7 pr_labor0\$8 pr_labor0\$9	Does the record book have information on the <<type of employee>> O livro de registros tem informação sobre o tipo de empregado? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
pr_labor1\$1 pr_labor1\$2 pr_labor1\$3 pr_labor1\$4 pr_labor1\$5 pr_labor1\$6 pr_labor1\$7 pr_labor1\$8 pr_labor1\$9	How many of the following <<types of employees>> did your business have in the last 12 months (February 1, 2020 – January 31, 2021)? Quantos dos seguintes << tipos de empregados >> o seu empreendimento teve nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite - 99 se não conhece o número mas foram empregados no negócio de processamento	
pr_labor1_1\$1 pr_labor1_1\$2 pr_labor1_1\$3 pr_labor1_1\$4 pr_labor1_1\$5 pr_labor1_1\$6 pr_labor1_1\$7 pr_labor1_1\$8 pr_labor1_1\$9	How many new employees of the following <<types of employees>> did your business hire in the last 12 months (February 1, 2020 – January 31, 2021) as a result of participation in the MERCADO project? Quantos novos empregados dos seguintes << tipos de empregados >> o seu empreendimento contratou nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021) como resultado da sua participação no Projecto MERCADO?	*Enter -99 if number unknown but were employed at the business *Digite - 99 se não conhece o número mas foram empregados no negócio de processamento	
pr_labor1a_1\$1	How many new employees of the following <<types of employees>> did your business hire from July	*Enter -99 if number unknown	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_labor1a_1\$ 2 pr_labor1a_1\$ 3 pr_labor1a_1\$ 4 pr_labor1a_1\$ 5 pr_labor1a_1\$ 6 pr_labor1a_1\$ 7 pr_labor1a_1\$ 8 pr_labor1a_1\$ 9	2019 to February 2020 as a result of participation in the MERCADO project?)? Quantos novos dos seguintes << tipos de empregados>> o seu empreendimento contratou entre Julho 2019 e Fevereiro de 2020, como resultado da sua participação no projecto MERCADO?	but were employed at the business *Digite -99 se não conhece o número mas foram empregados no negócio de processamento	
pr_labor2\$1 pr_labor2\$2 pr_labor2\$3 pr_labor2\$4 pr_labor2\$5 pr_labor2\$6 pr_labor2\$7 pr_labor2\$8 pr_labor2\$9	On average, how many months in the year did your business hire <<types of employees>> in the last 12 months (February 1, 2020 – January 31, 2021)? Em média, quantos meses no ano o seu empreendimento contratou << tipos de empregados>> nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados no negócio de processamento	
pr_labor3\$1 pr_labor3\$2 pr_labor3\$3 pr_labor3\$4 pr_labor3\$5 pr_labor3\$6 pr_labor3\$7 pr_labor3\$8 pr_labor3\$9	On average, how many hours in a week did <<types of employees>> work in the last 12 months (February 1, 2020 – January 31, 2021)? Em média, quantas horas por semana os << tipos de empregados>> trabalharam nos últimos 12 meses (1 de Fevereiro 2020 a 31 de Janeiro 2021)?	*Enter -99 if number unknown but were employed at the business *Digite -99 se não conhece o número mas foram empregados no negócio de processamento	
pr_labor4\$1 pr_labor4\$2 pr_labor4\$3 pr_labor4\$4 pr_labor4\$5 pr_labor4\$6	What frequency of payment did you pay each <<type of employee>>? Qual foi a frequência de pagamento feitos para cada << tipos de empregados>>? 1 Hourly Por hora 2 Daily Por dia	*Select only one option selecione apenas uma opção	

VARIABLE		ENUMERATOR INSTRUCTIONS	PMP INDICATOR
pr_labor4\$7 pr_labor4\$8 pr_labor4\$9	3 Weekly Por semana 4 Monthly Por mês 5 Yearly Por ano		
pr_labor5\$1 pr_labor5\$2 pr_labor5\$3 pr_labor5\$4 pr_labor5\$5 pr_labor5\$6 pr_labor5\$7 pr_labor5\$8 pr_labor5\$9	How much did you pay on average to each <<type of employee>> including benefits, in that type of payment? Think about the average wages paid only in the last 12 months. Please try to estimate if you do not know precise wages. Quanto em média pagou a cada << tipos de empregados>>, incluindo regalias inerentes à cada tipo de pagamento? Pense sobre a média do salário pago apenas nos últimos 12 meses. Por favor, tente estimar se não conhece os salários exatos.	*Enter -99 if wages unknown* Digite -99 se desconhece os salários *If different wages paid, calculate and enter average amount *Se pagou diferentes salários, calcule e insira a média *Enter in Metical *Insira em Meticais	
pr_labor_6	Has COVID-19 affected the number of employees your business hired in the last 12 months? O número de empregados que o seu negócio de processamento contratou, foi afectada pelo nos últimos 12 meses? 1 Yes Sim 2 No Não -99 Do not know/refuse to answer Não sabe / recusa-se a responder	*Select only one option selecione apenas uma opção	
pr_labor_6	How has COVID-19 affected the number of employees your business hired in the last 12 months? Como é que a COVID-19 afectou o número de trabalhadores contratados para o seu negócio de processamento nos últimos 12 meses? <i>Please describe (open-ended) Por favor descreva (pergunta aberta)</i>	*Ask if pr_labor_6 = 1 Faça esta pergunta se pr_labor_6 = 1	

SECTION 6: ADDITIONAL OPEN-ENDED QUESTIONS **QUESTÕES ABERTAS ADICIONAIS**

1. What support from MERCADO has been most helpful to your business? Please explain. Were activities and resources provided in a timely manner? **Que apoio do projecto MERCADO tem sido mais útil para o seu negócio? Por favor explique. Foram as actividades e os recursos providenciados atempadamente?**
2. What support from MERCADO has not been helpful? What needs does your business have that are still unmet? What additional support would be helpful for your business? **Que apoio do projecto MERCADO não tem sido útil? Que necessidades do seu negócio estão ainda por alcançar? Que apoios adicionais seriam úteis para o seu negócio?**
3. Looking forward, what would you like to do with your processing business? Will you continue working on your processing business or will you leave it? Are you thinking of expanding? If so, how do you plan to grow your processing business? What influences these different considerations? What kind of improvements or additional supports are needed? **Olhando para o futuro, o que gostaria de fazer com o seu negócio de processamento? Vai continuar com o negócio de processamento ou vai desistir? Está pensando em expandir? Se sim, como planeia desenvolver o seu negócio de processamento? O que influencia estas diferentes considerações? Que tipo de melhoramentos ou apoios adicionais são necessários?**
4. Will your processing business activities be sustainable beyond the end of the MERCADO project? Please explain. If MERCADO continued for another 12 months, how would that affect your business? **O seu negócio de processamento será sustentável depois do fim do projecto MERCADO? Por favor explique. Se o MERCADO continuasse por mais 12 meses, como afectaria o seu negócio?**
5. Are there any challenges specifically faced by women in participating in your business that are not faced by men? Are there any kinds of support provided to overcome these challenges that you know of? How do you think MERCADO could have addressed these challenges? **Existem alguns desafios enfrentados especificamente por mulheres na participação no seu negócio que não afetam os homens? Tem conhecimento se foi providenciado algum tipo de apoio para ultrapassar estes desafios? Como julga que o projecto MERCADO poderia ter contemplado estes desafios?**
6. What effects, if any, has Cyclone Eloise had on your business? **Que efeitos, se houveram, o Ciclone Eloise causou na sua empresa?**
7. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today? **Algum assunto que não tenha sido perguntado e que gostaria de partilhar comigo ou tem algumas ideias adicionais sobre o que abordamos hoje?**

MERCADO FINAL EVALUATION: BREEDER SEMI-STRUCTURED SURVEY

ADDENDUM TO FARMER SURVEY FOR CLIFTON MEADOWS

ADENDA AS ENTREVISTAS DOS CRIADORES PARA CLIFTON MEADOWS

SECTION 1: PROCUREMENT, SALES, AND FUTURE PLANS AQUISIÇÕES, VENDAS E PLANOS FUTUROS

[Transition] Enumerator: Thank you! Now we want to talk to you about your procurement and sales, specific to breeding activities

Inquiridor: Obrigado! Agora queremos falar consigo acerca do processo de aquisição e das vendas específicas à actividade de criação de reprodutores

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Transition] Enumerator: Now we want to talk about your breeding of dairy cows. Inquiridor: Agora queremos falar acerca da reprodução das vacas leiteiras.			
Br_proc_1	Do you use artificial insemination for breeding? <i>Usa inseminação artificial na reprodução?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	*Select only one option *Selecione apenas uma opção *If br_proc_1 = -99, go to br_proc_2b	
Br_proc_2	Why do you not use artificial insemination for breeding? <i>Please describe (open ended)</i> <i>Porquê não usa inseminação artificial na reprodução?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*Ask if br_proc_1 = 2 Faça esta pergunta se a br_proc_1 = 2	
Br_proc_2a	Why do you use artificial insemination for breeding? <i>Please describe (open ended)</i> <i>Porquê usa inseminação artificial na reprodução?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*Ask if br_proc_1 = 1 Faça esta pergunta se a br_proc_1 = 1	
Br_proc_2b	Do you use crossbreeding? <i>Faz cruzamento de raças?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	*Select only one option *Selecione apenas uma opção	
Br_proc_2c	Why do you use crossbreeding? Which crossbreeds? <i>Please describe (open ended)</i> <i>Porquê faz cruzamentos? Que raças usa?</i>	*Ask if br_proc_2b = 1 Faça esta pergunta se a br_proc_2b = 1	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_3	What challenges, if any, does the firm face in obtaining genetics and breeding stock? <i>Please describe (open ended)</i> Que desafios, se existem, a empresa enfrenta para obter material genético e animais reprodutores? <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_4	How has the firm tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address these challenges? <i>Please describe (open ended)</i> Como a empresa tentou resolver estes desafios? O que funcionou e o que não resultou? Teve alguma ajuda do projecto MERCADO para resolver estes desafios? <i>Por favor, dê detalhes (pergunta aberta)</i>	*If no challenges, skip question *Se não teve desafios, salte esta pergunta	
Br_proc_5	What does the firm think will be necessary to successfully tackle challenges related to obtaining genetics and breeding stock? <i>Please describe (open ended) Na sua opinião, o que seria necessário para a empresa enfrentar com sucesso os desafios relacionados com a obtenção de material genético e animais reprodutores?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*If no challenges, skip question *Se não teve desafios, salte esta pergunta	
Br_proc_6	What challenges, if any, does the firm face in getting the heifers and cows pregnant? <i>Please describe (open ended)</i> Que desafios, se existem, a empresa enfrenta para ter as novilhas e vacas prenhas? <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_7	How has the firm tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address these challenges? <i>Please describe (open ended)</i> Como a empresa tentou resolver estes desafios? O que funcionou e o que não resultou? Teve alguma ajuda do projecto MERCADO para resolver estes desafios? <i>Por favor, dê detalhes (pergunta aberta)</i>	*If no challenges, skip question *Se não teve desafios, salte esta pergunta	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Br_proc_8	What does the firm think will be necessary to successfully tackle challenges related to breeding/production of dairy cows? <i>Please describe (open ended) Na sua opinião, o que seria necessário para a empresa enfrentar com sucesso os desafios relacionados com a reprodução/produção de vacas leiteiras? Por favor, dê detalhes (pergunta aberta)</i>	*If no challenges, skip question *Se não teve desafios, salte esta pergunta	
Br_proc_9	Has success in breeding your dairy heifers/cows changed as a result of your engagement with the MERCADO project, if at all? Os resultados da reprodução das suas novilhas/vacas alterou com o seu envolvimento com o projecto MERCADO ? 4 Increased Aumentou 5 Decreased Diminuiu 6 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *If br_proc_9 = -99, go to br_proc_11	
Br_proc_10	Why do you think breeding/production of dairy cows has increased/decreased because of the MERCADO project? <i>Please describe (open ended) Porquê a reprodução das vacas leiteiras aumentou/diminuiu por causa do projecto MERCADO? Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_11	Has your ease of obtaining genetics and/or breeding stock changed as a result of your engagement with the MERCADO project, if at all? A facilidade na obtenção do material genético ou animais reprodutores alterou como resultado da sua participação no projecto MERCADO? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *If br_procure_11 = -99, go to br_procure_13	
Br_proc_12	Why do you think obtaining genetics has become easier/harder because of the MERCADO project? <i>Please describe (open ended)</i>		

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	Porquê pensa que a obtenção do material genético tornou-se fácil/difícil por causa do projecto MERCADO? <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_13ba	Have you experienced any impacts on your breeding business due to COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021)? <i>O seu negócio de reprodução foi afectado pela Covid-19 nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	*Explain: Please try to focus on only impacts due to COVID-19 in the last 12 months and not due to low intensity civil war or Cyclone Idai. <i>*Explique: Por favor, tente focar apenas no impacto devido à Covid-19 nos últimos 12 meses e não nos efeitos das hostilidades militares ou do ciclone Idai</i>	
Br_proc_13b	Has your ease of obtaining genetics and breeding stock been affected by COVID-19 within the last 12 months (February 1, 2020 – January 31, 2021), if at all? <i>A facilidade na obtenção do material genético e dos animais reprodutores foi afectada pela Covid-19 nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Ficou na mesma</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	*Select one option <i>*Selecione uma opção</i> *Ask if br_proc_13ba = 1 Faça esta pergunta se a br_proc_13ba = 1	
Br_proc_14b	How has the production of dairy cows been affected by COVID-19 within the last 12 months (February 1, 2020 – January 31, 2021), if at all? <i>Como é que a produção de vacas leiteiras foi afectada pela Covid-19 nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Ficou na mesma</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	<i>*Selecione uma opção</i> *Ask if br_proc_13ba = 1 Faça esta pergunta se a br_proc_13ba = 1	
Br_proc_15b	What other challenges have you faced in procurement of genetics and breeding stock and production of dairy cows in the last 12 months (February 1, 2020 – January 31, 2021)	*Ask if br_proc_13ba = 1 Faça esta pergunta se a br_proc_13ba = 1	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	as a result of COVID-19? Do you think the effects that you just described are short-term or long-term? <i>Please describe (open-ended)</i> Que outros desafios enfrentou na aquisição de material genético animais reprodutores e produção de vacas leiteiras nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021) devido à Covid-19? Na sua opinião, os efeitos descritos são de curto ou longo-prazo? <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_proc_13aa	Are there any lingering impacts on your breeding business due to Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Existem no seu negócio de reprodução algum impacto prolongado devido ao Ciclone Idai nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i>	*Explain: Impacts can include effects on obtaining genetics or breeding stock; or breeding/production of cows <i>*Explique: O impacto pode incluir efeitos na obtenção de material genético ou animais reprodutores ou reprodução/produção de vacas</i> *Explain: Please try to focus on only lingering impacts of Cyclone Idai in the past 12 months and do not include any impacts before that. Please also do not include any impacts due to COVID-19. <i>*Explique: Por favor tente focar apenas no impacto prolongado do Ciclone Idai nos últimos 12 meses e não no impacto anterior a este período. Por favor, também não inclua o impacto da Covid-19.</i>	
Br_proc_13a	Has your ease of obtaining genetics and breeding stock faced lingering impacts from Cyclone Idai within the last 12 months (February 1, 2020 – January 31, 2021), if at all? <i>A sua facilidade de obtenção de material genético e animais reprodutores foi afectada pelo impacto prolongado do Ciclone Idai nos</i>	*Select one option <i>*Selecione uma opção</i> *Ask if br_proc_13aa = 1 <i>Faça esta pergunta se a br_proc_13aa = 1</i>	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder		
Br_proc_14a	Has the breeding/production of dairy cows faced lingering impacts from Cyclone Idai within the last 12 months (February 1, 2020 – January 31, 2021), if at all? A reprodução/produção de vacas leiteiras foi afectada pelo impacto prolongado do Ciclone Idai nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 4 Breeding has increased Reprodução aumentou 5 Breeding has decreased Reprodução diminuiu 6 Breeding has stayed the same Reprodução ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Selecione uma opção *Ask if br_proc_13aa = 1 Faça esta pergunta se a br_proc_13aa = 1	
Br_proc_15a	What other challenges have you faced in procurement of genetics and breeding stock and production of dairy cows in the last 12 months (February 1, 2020 – January 31, 2021) as a result of the lingering impacts of Cyclone Idai? Do you think the effects that you just described are short-term or long-term? <i>Please describe (open-ended)</i> Que outros desafios enfrentou na aquisição de material genético e animais reprodutores e produção de vacas leiteiras nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021) devido ao impacto prolongado do Ciclone Idai? Na sua opinião, os efeitos descritos são de curto ou longo-prazo? Por favor, dê detalhes (pergunta aberta)	*Ask if br_proc_13aa = 1 Faça esta pergunta se a br_proc_13aa = 1	
Br_proc_13ca	Have you experienced any impacts on your breeding business due to low intensity civil war in the last 12 months (February 1, 2020 – January 31, 2021)? O seu negócio de reprodução foi afectado pelas hostilidades militares nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?	*Explain: Please try to focus on only impacts due to low intensity civil war and not due to COVID-19 or Cyclone Idai *Explique: Por favor tente focar apenas no impacto das hostilidades	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	1 Yes Sim 2 No Não	militares e não da Covid-19 ou Ciclone Idai.	
Br_proc_13c	Has your ease of obtaining genetics and breeding stock been affected by low intensity civil war within the last 12 months (February 1, 2020 – January 31, 2021), if at all? A sua facilidade na obtenção de material genético e animais reprodutores foi afectada pelas hostilidades militares nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *Ask if br_proc_13ca = 1 Faça esta pergunta se a br_proc_13ca = 1	
Br_proc_14c	How has the production of dairy cows been affected by low intensity civil war within the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que a produção de vacas leiteiras foi afectada pelas hostilidades militares nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *Ask if br_proc_13ca = 1 Faça esta pergunta se a br_proc_13ca = 1	
Br_proc_15c	What other challenges have you faced in procurement of genetics and breeding stock and production of dairy cows in the last 12 months (February 1, 2020 – January 31, 2021) as a result of low intensity civil war? Do you think the effects that you just described are short-term or long-term? <i>Please describe (open-ended)</i> Que outros desafios enfrentou na aquisição de material genético e animais reprodutores e produção de vacas leiteiras nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021) por causa das hostilidades militares? Na sua opinião, os efeitos descritos são de curto ou longo-prazo? Por favor, dê detalhes (pergunta aberta)	*Ask if br_proc_13ca = 1 Faça esta pergunta se a br_proc_13ca = 1	
[Transition]: Enumerator: Great! Now, let's talk about your sales of heifers or cows			

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
[Enumerator Instruction]: Enumerator: For questions br_sales_1 – br_sales_15, fill from record book; else ask respondent and then fill Inquiridor: Ótimo! Agora vamos falar acerca das suas vendas de novilhas ou vacas (Instrução para o inquiridor): Inquiridor: Nas questões br_1-br_sales15, preencha com base nos livros de registos; ou com base nas respostas do entrevistado.			
Br_sales_1	How many unbred heifers did you sell, in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas novilhas não cobertas (vazias) vendeu nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?	*Enter number *Insira o número *Enter 0 if no sales *Digite 0 sem vendas *Enter -99 if do not know/refuse to answer *Digite 99 Não sabe/recusa a responder	
Br_sales_2	What price did you receive for unbred heifers, on average in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o preço médio praticado por cada novilha não coberta, nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?	*Enter in Metical *Insira em Meticais *Ask if br_sales_1>0 Faça esta pergunta se a br_sales_1>0 *Enter -99 if do not know/refuse to answer *Digite 99 Se não sabe/recusa a responder	
Br_sales_3	Who are your main buyers for unbred heifers? <i>Please describe (open ended)</i> Quem são os seus principais compradores de novilhas não cobertas? <i>Por favor, detalhe(pergunta aberta)</i>	*Ask if br_sales_1>0 Faça esta pergunta se a br_sales_1>0	
Br_sales_4	How many in-calf heifers did you sell in the last 12 months (February 1, 2020 – January 31, 2021)? Quantas novilhas prenhas vendeu nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?	*Enter number *Insira o número *Enter 0 if no sales *Digite 0 sem vendas *Enter -99 if do not know/refuse to answer *Digite 99 Não sabe/recusa a responder	
Br_sales_5	What price did you receive for in-calf heifers, on average in the last 12 months (February 1, 2020 – January 31, 2021)? Qual foi o preço médio praticado por cada novilha prena nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?	*Enter in Metical *Insira em Meticais *Ask if br_sales_4>0 Faça esta pergunta se a br_sales_4>0 *Enter -99 if do not know/refuse to answer *Enter - 99 If não sabe/recusa a responder	
Br_sales_6	Who are your main buyers for in-calf heifers?	*Ask if br_sales_4>0	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	<i>Please describe (open ended)</i> Quem são os seus principais compradores de novilhas prenhas? <i>Por favor, dê detalhes (pergunta aberta)</i>	Faça esta pergunta se a br_sales_4>0	
Br_sales_7	In the last 12 months (February 1, 2020 – January 31, 2021), what were your sales of cows? <i>Quantas vacas vendeu nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i>	*Enter number *Insira o número *Enter 0 if no sales *Digite 0 sem vendas *Enter -99 if do not know/refuse to answer *Digite 99 Não sabe/recusa a responder	
Br_sales_8	What price did you receive for cows, on average in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Qual foi o preço médio praticado por cada vaca nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i>	*Insirir em Meticais *Ask if br_sales_7>0 *Digite - 99 se não sabe/recusa a responder	
Br_sales_9	Who are your main buyers for cows? <i>Please describe (open ended) Quem são os seus principais compradores de vacas?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*Ask if br_sales_7>0 Faça esta pergunta se a br_sales_7>0	
Br_sales_10	Does the business have any agreement with buyers of heifers/cows in the last 12 months (February 1, 2020 – January 31, 2021)? <i>A empresa teve algum acordo/contracto com os compradores de novilhas/vacas nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i> 1 Yes <i>Sim</i> 2 No <i>Não</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	*Select only one option *Selecione apenas uma opção	Indicator: #23
Br_sales_11	How many agreements did you have with buyers of heifers/cows in the last 12 months (February 1, 2020 – January 31, 2021)? <i>Quantos acordos/contractos teve com os compradores de novilhas/vacas nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)?</i>	*Ask if br_sales_10 = 1 *Digite -99 se não sabe/recusa a responder	Indicator: #23
Br_sales_12	Can you describe these agreements? <i>Please describe (open-ended) Pode descrever estes acordos/contratos?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*Ask if br_sales_10=1 Faça esta pergunta se a br_sales_10=1	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Br_sales_13	How are cows/heifers transported to your buyers? <i>Como são transportadas as novilhas/vacas para os seus compradores?</i> 4 Buyer comes to our doorstep <i>Comprador vem à nossa porta</i> 5 Business travels to buyer <i>Empresa faz a entrega ao comprador</i> 6 Other, specify <i>Outros, especifique</i> -99 Do not know/refuse to answer <i>Não sabe/recusa a responder</i>	*Select all that apply <i>*Selecione todos que se aplicam</i> *Ensure that if “-99” is chosen, no other option is chosen <i>*Assegure que, se for escolhido 99 nenhum outra opção pode ser escolhida</i>	
Br_sales_14	What challenges, if any, does the business face in sales of cows/heifers? <i>Please describe (open-ended)</i> <i>Que desafios, se existem, a empresa enfrenta na venda de vacas/novilhas?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_sales_15	How has the business tried to address these challenges? What has worked, what has not? Has the MERCADO project helped you in any way to address any sales and marketing challenges? <i>Please describe (open-ended)</i> <i>Como a empresa tentou resolver estes desafios? O que funcionou e o que não resultou? Teve alguma ajuda do projecto MERCADO para resolver alguns desafios de marketing e vendas?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*If no challenge, skip question <i>*Se não teve desafios, salte esta pergunta</i>	
Br_sales_16	What does the business think will be necessary to successfully tackle challenges related to sales of cows/heifers? <i>Please describe (open-ended) Na sua opinião, o que seria necessário para a empresa enfrentar com sucesso os desafios relacionados com a venda de vacas/novilhas?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>	*If no challenge, skip question <i>*Se não teve desafios, salte esta pergunta</i>	
Br_sales_17	How have sales of cows/heifers changed as a result of engagement with the MERCADO project, if at all? <i>Como é que as vendas de vacas/novilhas alteraram como resultado do envolvimento da empresa com o projecto Mercado?</i> 1 Increased <i>Aumentou</i> 2 Decreased <i>Diminuiu</i> 3 Stayed the same <i>Ficou na mesma</i>	*Select one option <i>*Selecione uma opção</i> *If br_sales_17 = -99, go to br_sales_21 Se br_sales_17 = -99, salte para br_sales_21	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	-99 Do not know/refuse to answer Não sabe/recusa a responder		
Br_sales_18	Why do you think sales of cows/heifers changed because of the MERCADO project? <i>Please describe (open ended) Na sua opinião, porquê a venda de vacas/novilhas alterou por causa do projecto MERCADO?</i> <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_sales_19	Were there changes in demand by breed/crossbreed for cows/heifers? <i>Please describe (open ended)</i> Houve mudanças na procura de raças puras/cruzas para vacas/novilhas? <i>Por favor, dê detalhes (pergunta aberta)</i>		
Br_sales_19b	How have sales of cows/heifers changed as a result of COVID-19 in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que a venda de vacas/novilhas alterou como resultado da Covid-19 nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts due to COVID-19 and lingering impacts of Cyclone Idai, to the extent possible *Inquiridor: Por favor, peça ao entrevistado para, na medida do possível, distinguir entre o impacto devido à Covid-19 e o impacto prolongado do Ciclone Idai.	
Br_sales_20b	How did COVID-19 affect your business's sales of cows/heifers? <i>Please describe (open ended)</i> Como é que a Covid-19 afectou o seu negócio de venda de vacas/novilhas? <i>Por favor, dê detalhes (pergunta aberta)</i>	*Ask if Br_sales_19b = 1 or 2 Faça esta pergunta se a Br_sales_19b = 1 or 2	
Br_sales_19a	How have sales of cows/heifers changed as a result of Cyclone Idai in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que a venda de vacas/novilhas alterou como resultado do Ciclone Idai nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma	*Select one option *Selecione uma opção *Enumerator: Explain that they should only think about the impact of the cyclone in the last 12 months) and not before that *Inquiridor: Explique que eles devem apenas se concentrar no impacto do	

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
	-99 Do not know/refuse to answer Não sabe/recusa a responder	cyclone Idai nos últimos 12 meses e não antes deste período	
Br_sales_20a	How did Cyclone Idai affect your business's sales of cows/heifers in the last 12 months? <i>Please describe (open ended)</i> Como é que o Ciclone Idai afectou o seu negócio de venda de vacas/novilhas nos últimos 12 meses? Por favor, dê detalhes (pergunta aberta)	*Ask if Br_sales_19a = 1 or 2 Faça esta pergunta se a Br_sales_19a = 1 or 2 *Enumerator: Explain that they should only think about the impact of the cyclone in the last 12 months) and not before that *Inquiridor: Explique que eles devem apenas se concentrar no impacto do ciclone Idai nos últimos 12 meses e não antes deste período	
Br_sales_19c	How have sales of cows/heifers changed as a result of low intensity civil war in the last 12 months (February 1, 2020 – January 31, 2021), if at all? Como é que a venda de vacas/novilhas alterou como resultado das hostilidades militares nos últimos 12 meses (Fevereiro 1, 2020 – Janeiro 31, 2021)? 1 Increased Aumentou 2 Decreased Diminuiu 3 Stayed the same Ficou na mesma -99 Do not know/refuse to answer Não sabe/recusa a responder	*Select one option *Selecione uma opção *Enumerator: Please ask the respondent to distinguish between impacts due to low intensity civil war and any lingering impacts of Cyclone Idai or COVID-19, to the extent possible *Inquiridor: Por favor, peça ao entrevistado para, na medida do possível, distinguir entre o impacto devido às hostilidades militares e algum impacto prolongado do Ciclone Idai ou Covid-19.	
Br_sales_20c	How did low intensity civil war affect your business's sales of cows/heifers? <i>Please describe (open ended)</i> Como é que as hostilidades militares afectaram o seu negócio de venda de vacas/novilhas? Por favor, dê detalhes (pergunta aberta)	*Ask if Br_sales_19c = 1 or 2 Faça esta pergunta se a Br_sales_19c = 1 or 2	
[Transition]: Enumerator: Now I want to ask about your plans for your breeding herd			

VARIABLE	QUESTIONS	ENUMERATOR INSTRUCTIONS	PMP INDICATOR
Inquiridor: Agora, gostaria de lhe perguntar acerca dos seus planos para a sua manada de reprodutores			
Br_sust_1	How much of your herd do you expect to sell in the next 12 months? Quantas novilhas/vacas da sua manada espera vender nos próximos 12 meses?	*Enter total number of cattle. *Insira o número total da manada *Enter -99 if do not know/refuse to answer *Enter -99 Se não sabe/recusa a responder	
Br_sust_2	How large of a herd do you want to keep for production in the next 12 months? Enter total number of cattle. Qual é o tamanho da manada que pretende manter para reprodutores nos próximos 12 meses?	*Enter total number of cattle. *Insira o número total da manada *Enter -99 if do not know/refuse to answer *Enter -99 Se não sabe/recusa a responder	
Br_sust_3	How do you plan to grow your breeding business? <i>Please describe (open ended)</i> Como planeia desenvolver o seu negócio de reprodutores? Por favor, dê detalhes (pergunta aberta)		
Br_sust_4	Are you planning to keep breeding in the future? <i>Please describe (open ended)</i> Está planeando manter a produção de reprodutores no futuro? Por favor, dê detalhes (pergunta aberta)		
Br_sust_5	From your perspective, will your breeding activities be sustainable beyond the end of the MERCADO project? Please explain. What are the biggest challenges to achieve sustainable increases in sales of cows/heifers? <i>Please describe (open ended)</i> Na sua perspectiva, será sustentável a sua actividade de reprodutores depois do fim do projecto MERCADO? Por favor explique. Quais são os maiores desafios para alcançar um aumento sustentável na venda de vacas/novilhas? Por favor, dê detalhes (pergunta aberta)		

SECTION 2: ADDITIONAL OPEN-ENDED QUESTIONS **QUESTÕES ABERTAS ADICIONAIS**

1. What support from MERCADO has been most helpful to your business? Please explain. **Que apoio do projecto MERCADO foi o mais útil para o seu negócio? Por favor explique.**
2. What support from MERCADO has not been helpful? What needs does your business have that are still unmet? What additional support would be helpful for your business? **Que apoio do projecto MERCADO não foi útil? Que necessidades do seu negócio estão ainda por alcançar? Que apoios adicionais seriam úteis para o seu negócio?**
3. Are there any challenges specifically faced by women in participating in your business that are not faced by men? Are there any kinds of support provided to overcome these challenges that you know of? How do you think MERCADO could have addressed these challenges? **Existem alguns desafios enfrentados especificamente por mulheres na participação no seu negócio que não são afectam os homens? Tem conhecimento se foi providenciado algum tipo de apoio para ultrapassar estes desafios? Como é que julga que o projecto MERCADO poderia ter abordado estes desafios?**
4. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today? **Algum assunto que não tenha sido abordado e que gostaria de partilhar comigo ou tem algumas ideias adicionais sobre o que abordamos hoje?**

MERCADO FINAL EVALUATION QUALITATIVE DATA COLLECTION TOOLS

AVALIAÇÃO FINAL DE MERCADO, INSTRUMENTO DE RECOLHA DE DADOS QUALITATIVOS

Dairy Farmers Focus Group Discussion Guide – Guião de discussão de Grupos Focais de Produtores de Leite

Data (Dia/Mês/Ano):

Nome do entrevistador/Facilitador:

Secretário/Anotador:

Localização:

Número de Participantes (F):

Número de Participantes (M):

Hora de Inicio:

Hora do término :

INTRODUCTION

INTRODUÇÃO

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique. Our discussion today will focus on the effect the MERCADO project has had on your farm management practices and productivity, as well as on any successes and challenges you've faced. This will help provide the research team with greater detail about the survey questions that you answered earlier.

The discussion will be approximately 90 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this discussion. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

If I have your permission, I would like to record our discussion today, for the purpose of taking notes later. This recording can only be accessed by our research team, and will not be shared with anyone else.

Does anyone have any questions for me?

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).

Muito obrigado por poderem participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores do projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam numa forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique. A nossa discussão de hoje irá focar-se no efeito que o projecto MERCADO tem tido nas vossas práticas de gestão das farmas e produtividade, assim como nos sucessos e desafios que têm enfrentado. Isto ajudará a fornecer, à equipa de pesquisa, mais detalhes sobre as questões do inquérito que responderam anteriormente.

A conversa terá a duração aproximada de 90 minutos. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os vossos nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de participar ou não nesta discussão. Se, a qualquer momento após o início da nossa conversa , desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Se eu tiver a vossa permissão, gostaria de gravar a nossa discussão de hoje para poder tomar notas mais tarde. Esta gravação só pode ser acedida pela nossa equipa de pesquisa e não será partilhada com mais ninguém.

Alguém tem alguma pergunta para mim?

Se surgirem outras perguntas depois deste encontro, podem contactar a qualquer altura os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar convosco os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participants had any questions? ☐ Yes ☐ No

Perguntou se os participantes tinham alguma questão? ☐ Sim ☐ Não

b) Did participants agree to participate? ☐ Yes ☐ No → STOP

Os participantes concordaram em participar? ☐ Sim ☐ Não → Pare

c) Did ALL participants consent to be recorded? ☐ Yes ☐ No → DO NOT START TAPE RECORDER

TODOS os participantes concordaram que a conversa fosse gravada? ☐ Sim ☐ Não → Não ligue o Gravador.

1. To begin, would each of you please introduce yourself, and tell me a little bit about yourself as a farmer and dairy farmer—what you farm, when and how you began dairy farming, how many cows you have.

Para começar, cada um de vocês poderia, por favor, apresentar-se e contar-me um pouco sobre a sua actividade como agricultor e produtor de leite - o que produz, quando e como começou a produção de leite, quantas vacas tem?

2. I would like for you to describe the activities that you participated in as part of the MERCADO project – both the training and support that you’ve received, and the resources that you’ve received. First, I’d like to talk about training.

Gostaria que descrevesse as actividades em que participou como beneficiário do projecto MERCADO - treinamento e o apoio e os recursos que recebeu. Em primeiro lugar, gostaria de falar sobre o treinamento.

- a. What kind of training or help did you receive? (*Probe for farm management training, animal husbandry training, animal feeding and grazing, etc.*)

Que tipo de treinamento ou ajuda recebeu? (*Procure saber se foram treinados em gestão da farma, criação de gado, alimentação e pastoreio de animais, etc.*)

- b. Who provided it, and when? In your opinion, are these trainings carried out in a timely manner?

Quem deu o treinamento e quando? Na sua opinião, estes treinamentos foram realizados em tempo útil?

- c. What did you like about this? What have you learned? Have you made any changes as a result of this training? What did you not like about your training?

O que gostou sobre o treinamento? O que é que aprendeu? Fez alguma modificação como resultado deste treinamento? O que é que não gostou no seu treinamento?

- d. What are specific results that you have seen as a result of this training? (*Probe for increased production, etc.*) Were there any negative results?

Quais são os resultados específicos que viu como resultado deste treinamento? (Procure saber sobre aumento da produção, etc.) Houve resultados negativos?

- e. Are there any areas where you need more support?
Existem algumas áreas onde necessita de mais apoio?
- f. (For women farmer groups: Was there any training on strategies for women-owned farmers to succeed?)
(Para grupos de mulheres produtoras: Houve algum treinamento em estratégias para as farmas cujos proprietários são mulheres serem bem sucedidas ?)

3. Now, I'd like to talk about resources. Agora, gostaria de falar sobre recursos

- a. What kind of resources did you receive? *(Probe for receipt of heifers, Dairy Herd Fund (DHF), Dairy Innovation Fund (DIF), etc.)*
Que tipo de recursos recebeu? (Procure saber sobre a recepção de novilhas, Fundo de Repovoamento de Gado Leiteiro(DHF), Fundo de Inovação Leiteira (DIF), etc.)
 - b. Who provided it, and when? In your opinion, are these activities carried out in a timely manner?
Quem forneceu estes recursos e quando? Na sua opinião, estas actividades são realizadas em tempo útil?
 - c. What did you like about these resources? What did you not like? Do you have any feedback on the grant award process?
O que lhe agradou nestes recursos? O que é que não gostou? Tem algum comentário sobre o processo de atribuição de subsídios?
 - d. What are specific results that you have seen as a result of this resource? Are there any negative results?
Que resultados específicos notou como resultado deste recurso? Existem alguns resultados negativos?
 - e. Are there any additional resources that you need?
Existem alguns recursos adicionais que necessita?
4. Have you changed any of your farming practices because of the project training? If so, which ones? *Probe for housing, feeding, water, animal health, etc. If not: Why didn't you?*
O (a) Senhor (a) mudou alguma das suas práticas de produção, por causa do treinamento que recebeu do projecto? Se sim, quais? Procure saber sobre alojamento, alimentação, água, saúde animal, etc.. Se não: Porquê não o fez?
5. Has your participation in the MERCADO project had any effect, positive or negative, on your dairy practices and productivity that you did not mention already? If yes, how? *Probe for feeding practices, practices for ensuring higher quality milk, increased milk production/lactation days, herd health, breeding, milking practices, etc. as well as the specific input/service suppliers.*

A sua participação no projecto MERCADO teve algum impacto positivo ou negativo nas suas práticas de criação de gado leiteiro e produtividade que ainda não mencionou? Se sim, como? *Procure saber sobre as práticas de alimentação, práticas para assegurar melhor qualidade do leite, aumento da produção de leite/dias de lactação, saúde do rebanho, reprodução, práticas de ordenha/mungição, etc., assim como os fornecedores de insumos/serviços específicos.*

6. Has your participation in the MERCADO project changed your business, financial, or marketing practices that you did not mention already? If yes, how? *Probe for participation in cooperatives, selling practices, post-harvest handling, farm management and record keeping, access to financing, etc. as well as the specific input/service suppliers.*

A sua participação no projecto MERCADO mudou as suas práticas de negócio, financeiras ou de marketing que ainda não mencionou? Se sim, como? *Procure saber sobre a participação em cooperativas, práticas de venda de leite, tratamento pós-colheita, gestão de farma e registos, acesso a financiamento, etc., bem como os fornecedores de insumos/serviços específicos.*

7. From your perspective, which activities and processes will be sustainable beyond the end of the MERCADO project and which will not be sustainable? Please explain.

Na sua perspectiva, que actividades e processos serão sustentáveis após o fim do projecto MERCADO e quais não serão sustentáveis? Explique, por favor.

- a. What are the biggest challenges to achieving sustainable marketing and increases in sales and quality? *Probe: What affects their ability to make a profit?*

Quais são os maiores desafios para alcançar a sustentabilidade no marketing e aumento de da qualidade e vendas do leite? Procure saber sobre: o que afecta a capacidade de gerarem lucro?

8. *(If not mentioned earlier)* Has Cyclone Idai had any effect on your dairy farming activities in the last 12 months? *Probe for input supply, sales, and distribution, and if the effects (such as herd reduction) are short- or long-term.*

(Se não foi mencionado anteriormente) O Ciclone Idai teve algum impacto nas suas actividades de produção de leite nos últimos 12 meses? Procure saber sobre o fornecimento de insumos, vendas e distribuição, e se o impacto (tais como redução da manada) é de curto ou longo prazo.

9. *(If not mentioned earlier)* Has COVID-19 had any effect on your dairy farming activities in the last 12 months?

(Se não foi mencionado anteriormente) A COVID-19 teve algum impacto nas suas actividades de produção de leite nos últimos 12 meses?

10. *(If not mentioned earlier)* Has low intensity civil war had any effect on your dairy farming activities in the last 12 months?

(Se não foi mencionado anteriormente) As hostilidades militares tiveram algum impacto nas suas actividades de produção de leite nos últimos 12 meses?

11. *(If not mentioned earlier)* Has Cyclone Eloise had any effect on your dairy farming activities?

(Se não mencionado anteriormente) O Ciclone Eloise teve algum efeito nas suas atividades de produção de leite?

12. From your perspective, did the overall MERCADO project adequately address the needs of dairy farmers like you? In your opinion, what other activities could the project do with you to have a greater impact?

Na sua perspectiva, o projecto MERCADO, de uma forma geral, respondeu adequadamente às necessidades dos produtores de leite como vocês? Na sua opinião, que outras actividades o projecto poderia realizar convosco para que tenha um maior impacto?

13. Are there any challenges specifically faced by women dairy farmers that are not faced by men farmers? Please explain. Were there any kinds of support provided from the MERCADO project to overcome these challenges that you know of?

Existem alguns desafios enfrentados especificamente pelas produtoras de leite que não são enfrentados pelos produtores? Explique, por favor. Tem conhecimento de algum tipo de apoio fornecido pelo projecto MERCADO para ultrapassar estes desafios?

14. Looking forward, what would you like to do with your dairy farm? Will you continue working on your dairy farm or will you leave it? Are any of you thinking of expanding? What influences these different considerations? What kind of improvements or additional supports are needed?

Olhando para o futuro, o que gostaria de fazer com a sua exploração leiteira? Vai continuar a trabalhar na sua exploração leiteira ou vai desistir? Quem de vocês está a pensar em expandir? O que influencia estas diferentes considerações? Que tipo de melhoramentos ou apoios adicionais são necessários?

15. If MERCADO continued for another 12 months, how would that affect you?

Se MERCADO continuasse por mais 12 meses, como isso o afectaria?

16. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?

Há alguma coisa que eu não tenha perguntado que gostaria de partilhar comigo, ou têm alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e seus comentários.

Community Livestock Workers Interview Guide – Guião de Entrevista aos Promotores

Data (Dia/Mês/Ano):

Nome do entrevistador ou facilitador:

Secretário/Anotador:

Nome:

Cooperativa:

Género:

Hora de início:

Hora do término :

INTRODUCTION INTRODUÇÃO

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will be approximately an hour. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).

Muito obrigado por poderem participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam numa forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique. A nossa entrevista terá a duração aproximada de 1 hora. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido

confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os vossos nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de participar ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não quiser responder.

Se surgirem outras perguntas depois deste encontro, podem a qualquer altura sempre contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar convosco os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipa de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se os participantes tinham alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

Os participantes concordaram em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento aos participantes? ☐ Sim ☐ Não

1. To begin, can you tell me a little bit about your background as a community livestock worker – when did you start? What motivated you to be a CLW?

Para começar, pode falar-me um pouco do seu percurso como promotor - quando começou? O que o motivou a ser um promotor?

a. How did you get involved with the MERCADO project?

Como se envolveu com o projecto MERCADO?

2. I'd like for you to describe the activities that you participate in as part of the MERCADO project. *Probe for health services offered to farmers, trainings, connection to private and/or government vets.* In your opinion, are these activities carried out in a timely manner?

Gostaria que descrevesse as actividades em que participa como parte do projecto MERCADO. Procure saber sobre *serviços de saúde que presta aos produtores, treinamentos, ligação a veterinários privados e/ou do governo.* Na sua opinião, estas actividades são realizadas em tempo útil?

3. What kind of training did you receive?

Que tipo de treinamento recebeu?

a. Who provided it, and when?

Quem deu o treinamento e quando?

b. What did you like about it? What have you learned? Please describe your successes.

O que gostou em relação ao treinamento que teve? O que aprendeu? Por favor descreva os sucessos que teve.

c. Was it sufficient, or are there any areas where you need more support?

O treinamento foi suficiente ou existem algumas áreas onde necessita de mais apoio?

4. Could you describe the types of farmers who seek your services (size of their farms (small: 1-3, medium: 4-19, or large: 20+), gender, etc.)?

Poderia descrever o tipo de produtores que procuram os seus serviços (tamanho das suas explorações leiteiras (pequena: 1-3, média: 4-19, ou grande: 20+), género, etc.)?

a. What are the greatest needs of the farmers seeking your services?

Quais são as maiores necessidades dos produtores que procuram os seus serviços?

b. Are there any challenges specifically faced by women farmers that are not faced by men farmers?

Existem alguns desafios enfrentados especificamente pelas mulheres produtoras que não são enfrentados pelos homens?

c. What challenges do you know of that affects farmers' ability to make a profit?

Que desafios conhece que afetam a capacidade dos produtores de gerarem lucro?

d. Are there any kinds of support provided to overcome these challenges that you know of?

Existe algum tipo de apoio prestado para superar estes desafios que conhece?

e. How do you think MERCADO could have addressed these challenges?

Como pensa que o projecto MERCADO poderia ter respondido a estes desafios?

5. What challenges, if any, did you face in providing services to dairy farmers?

Que desafios, se tiverem existido, enfrentou na prestação de serviços aos produtores de leite?

a. (For female CLWs) Did you face any challenges as a female CLW that were not faced by your male colleagues? How do you think the project could have addressed these challenges?

(Para as Promotoras) Enfrentou algum desafio como promotora que não tenha afectado os seus colegas homens? Como pensa que o projecto poderia ter abordado estes desafios?

b. (For male CLWs) Were there any opportunities for female CLWs?

(Para os Promotores) Houve algumas oportunidades para promotoras?

6. Were there any trainings you did with farmers or services you provided to them which were particularly successful? Please explain.

Houve alguns treinamentos que tenha feito aos produtores ou serviços que lhes tenha prestado, que tenham sido particularmente bem sucedidos ? Explique, por favor.

a. Were there specific types of farmers that were particularly receptive to the trainings? Which ones and trainings?

Havia tipos específicos de produtores que eram particularmente receptivos aos treinamentos? Indique o tipo de produtores e de treinamentos.

- b. What were the most requested trainings or services?

Quais foram os treinamentos e serviços mais solicitados?

7. Were there any trainings you did with farmers or services you provided to them which were not successful?

Houve alguns treinamentos aos produtores ou serviços que lhes tenha prestado que não foram bem sucedidos ?

- a. Which were the least successful?

Quais foram os treinamentos ou serviços menos sucedidos?

- b. What needs do you think are still unmet?

Que necessidades pensa que ainda não foram satisfeitas?

- c. Were there any negative outcomes that were unexpected or surprising to you?

Houve alguns resultados negativos inesperados or surpreendentes para si?

- d. Were there specific types of farmers that were less receptive to the trainings? Which types and trainings? Were there any changes how receptive farmers are to trainings and recommendations over the course of the project?

Houve tipos específicos de produtores que eram menos receptivos aos treinamentos? Que tipo de produtores e de treinamentos? Houve alguma mudança na receptividade dos produtores aos treinamentos e recomendações ao longo do projecto?

- i. If so, what kind of changes have there been? *Probe for fodder practices, milk production anecdotes, cattle death.*

Se sim, que tipo de mudanças houve? *Procure saber sobre e práticas forrageiras, história de produção de leite, mortalidade de gado.*

8. What refresher trainings did you provide?

Que tipo de treinamentos de reciclagem realizou ?

- a. Why were those specific trainings chosen to be refreshers?

Porquê esses treinamentos específicos foram escolhidos para reciclagem?

- b. How did they impact farmers?

Qual foi o impacto que teve nos produtores?

- c. Were they sufficient?

Os treinamentos foram suficientes?

9. What are the impacts of your work as a CLW on farmers? Were there any impacts that were unexpected or surprising to you? *Probe for safety and quality of milk, improved agricultural techniques and post-harvest handling, and use of improved infrastructure for farmers.*

Quais são os impactos do seu trabalho como promotor nos produtores? Houve algum impacto inesperado ou surpreendente para si? *Procure saber sobre a segurança e qualidade do leite, técnicas agrícolas melhoradas e tratamento pós-colheita, e utilização de infraestruturas melhoradas pelos produtores.*

10. From your perspective, do the services you provide adequately address the needs of dairy farmers? In your opinion, is there anything that could be strengthened or done differently?

Do seu ponto de vista, os serviços que presta respondem adequadamente às necessidades dos produtores de leite? Na sua opinião, existe alguma coisa que pode ser melhorada ou feita de forma diferente?

11. Do you plan to continue providing CLW services after the project? Why or why not? If only a portion of the services, please explain.

Tenciona continuar a fornecer o serviço de promotor depois do término do projecto? Porquê ou porquê não? Se apenas tenciona providenciar uma parte dos serviços, por favor explique.

- a. If looking for supplemental or other work, why and what kind of additional work?

Se procura trabalho suplementar ou outro trabalho, diga porquê e que tipo de trabalho adicional?

- b. If funding is the issue, have you looked into or applied for a DIF grant? Why or why not? Are you aware of the grant?

Se o problema é financeiro, já se informou ou solicitou uma subvenção DIF (Fundo de Inovação Leiteira)? Porquê ou porquê não? Sabe da existência da subvenção?

- i. If you have applied, was your application successful? What did you do with the grant?

Se se candidatou, a sua candidatura foi bem-sucedida? O que fez com a subvenção?

12. If MERCADO continued for another 12 months, how would that affect you?

Se o projecto MERCADO continuasse por mais 12 meses, como é que isso o afectaria?

13. From your perspective, would farmers want access to trainings after MERCADO ends? Please explain.

Do seu ponto de vista, será que os produtores estariam interessados em treinamentos após o fim do projecto MERCADO? Explique por favor.

14. Do you expect farmers to continue in the dairy sector after the project ends?

Espera que os produtores continuem no sector leiteiro após o fim do projecto?

15. How do you think farmers could still access continued trainings and CLW services after the MERCADO project ends?

Como pensa que os produtores poderiam ainda continuariam a ter acesso aos treinamentos contínuos e aos serviços dos promotores após o fim do projecto MERCADO?

- a. Are there other organizations providing similar services to farmers?

Existem outras organizações que prestam serviços semelhantes aos produtores?

- b. If so, what types of organizations? What services/trainings do those organizations provide?

Se sim, que tipos de organizações? Que serviços/treinamentos fornecem essas organizações?

- c. Are those services/trainings sufficient? Why or why not?

Esses serviços/treinamentos são suficientes? Porquê ou porquê não?

16. Do you have any feedback on the support you receive from the MERCADO project? What has been particularly helpful? Where can you use more support? (*Probe on communication with the project, getting supplies.*)

Tem algum comentário sobre o apoio que recebe do projecto MERCADO? O que tem sido particularmente útil? Onde pode aplicar mais apoio? (*Procure saber sobre a comunicação com o projecto, obtenção de materiais.*)

17. *(If not mentioned earlier)* Did Cyclone Idai have any impact on your activities as a CLW in the last 12 months? Please explain.
(Se não foi mencionado anteriormente) O Ciclone Idai teve algum impacto nas suas actividades como promotor nos últimos 12 meses? Por favor, explique.
18. *(If not mentioned earlier)* Has COVID-19 impacted your activities as a CLW? Please explain.
(Se não foi mencionado anteriormente) a COVID-19 teve algum impacto nas suas actividades como promotor ? Por favor, explique.
19. *(If not mentioned earlier)* Has low intensity civil war impacted your activities as a CLW? Please explain.
(Se não foi mencionado anteriormente) As hostilidades militares afectaram as suas actividades como promtor ? Por favor, explique.
20. *(If not mentioned earlier)* Has Cyclone Eloise had any impact on your activities as a CLW?
(Se não mencionado anteriormente) O Ciclone Eloise teve algum impacto nas suas actividades como um CLW?
21. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários

Student Intern Interview Guide - Guião de Entrevistas a Estudantes Estagiários

Data (Dia /Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretario/Anotador:

Nome:

Instituição de ensino:

Empresa de Acolhimento para Estágio:

Hora de início:

Hora do término :

INTRODUCTION Introdução

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The discussion will be approximately 30 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).

Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (chamado MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que

possam duma forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 30 minutos. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. O seu nome ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Se surgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou ao participante se tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento ao participante? ☐ Sim ☐ Não

1. To begin, please introduce yourself, and tell me about your training in agriculture (i.e. your area of focus in technical school) and why you chose it?

Para começar, apresente-se e fale-me da sua formação em agricultura (isto é, a sua área de especialização na área da agricultura) e porquê a escolheu?

2. Can you describe the dairy curriculum used in your university/institution?

Pode descrever o currículo sobre a criação de gado leiteiro usado na sua universidade/instituto?

a. What did you like about the dairy curriculum?

O que lhe agradou no currículo sobre a criação de gado leiteiro?

b. What have you learned?

O que aprendeu?

- c. Was it sufficient, or are there any areas where you need more support?
Foi suficiente, ou há algumas áreas em que precisa de mais apoio?
 - d. What did you like least about the curriculum? Why?
Do que gostou menos no currículo sobre a criação de gado leiteiro? Porquê?
 - e. What would you have liked to learn in the curriculum that you didn't?
O que gostaria de ter aprendido no currículo sobre a criação de gado leiteiro que não aprendeu?
3. Can you tell me about the internship you participated in as part of the MERCADO project?
Pode falar-me sobre o estágio em que participou como parte do projecto MERCADO?
- a. When was your internship? How long did it last? In your opinion, was the timeline effective?
Quando foi o seu estágio? Quanto tempo durou? Na sua opinião, a duração do estágio foi eficaz?
 - b. Which business did you work with?
Em que empresa/exploração leiteira estagiou ?
 - c. What did you like about the internship?
O que gostou no estágio?
 - i. What have you learned? Please describe your successes.
O que é que aprendeu? Por favor, descreva os seus sucessos.
 - ii. Do you think it was sufficient to prepare someone for a career in dairy?
Acha que foi suficiente para preparar alguém para uma carreira no sector leiteiro?
 - iii. What did you like least about the internship? Why?
O que menos gostou no estágio? Porquê?
 - d. What would you have liked to have done as part of your internship that you didn't?
O que gostaria de ter feito como parte do seu estágio, mas que não fez?
 - e. Could you please describe how you communicated with the business and Venture37? Was this successful? Why or why not?
Poderia descrever como se comunicou com a empresa/ exploração leiteira e a Land O'Lakes? A comunicação foi bem-sucedido? Porquê ou porquê não?
4. How did your courses in school and the MERCADO internship relate to one another? What were your experiences with each?
Como é que as disciplinas do seu curso na escola e o estágio do MERCADO se relacionam entre si? Quais foram as suas experiências com cada um?
- a. How would you compare the practical experience with classroom learning?
Como compararia a experiência prática com a aprendizagem em sala de aula?
 - b. What could have been done to make this a better learning experience?
O que poderia ter sido feito para fazer desta, uma melhor experiência de aprendizagem?
5. Does your institution have a student farm?
A sua instituição tem uma exploração leiteira para aulas práticas ?
- a. How did that impact your learning?
Qual foi o impacto disso na sua aprendizagem?
6. Are there challenges specifically faced by women in the dairy value chain?
Existem desafios especificamente enfrentados pelas mulheres na cadeia-de-valor do leite?
- a. Are there any challenges specifically faced by women dairy farmers that are not faced by men farmers? Please explain.

- Existem desafios enfrentados especificamente pelas mulheres produtoras de leite que não o são pelos homens produtores? Explique, por favor.
- b. How do you think MERCADO could have addressed these challenges?
Como pensa que o MERCADO poderia ter respondido a estes desafios?
- c. Are there any challenges specifically faced by female students in your area of study that are not faced by male students? Please explain.
Há alguns desafios enfrentados especificamente por estudantes do sexo feminino na sua área de estudo que não sejam enfrentados por estudantes do sexo masculino? Por favor, explique.
- d. How do you think MERCADO could have addressed these challenges?
Como pensa que o MERCADO poderia ter respondido a estes desafios?
7. Do you see dairy as an attractive sector to work in? Why or why not?
Vê o sector leiteiro como um sector atractivo para trabalhar? Porquê ou porquê não?
- a. Has this changed from the beginning of the internship?
Sua visão sobre o sector leiteiro mudou desde o início do estágio?
8. What have you done, or what do you hope to do, with your dairy training upon graduation? What type of work do you plan to do upon graduation? Will it be in the dairy sector? Why or Why not?
O que fez, ou o que espera fazer, com a sua formação em criação de gado leiteiro, após a graduação? Que tipo de trabalho planeia fazer após a graduação? Será no sector leiteiro? Porquê ou porquê não?
- a. Has this changed from the beginning of the internship?
Os seus planos mudaram desde o início do estágio?
9. How do you believe the overall partnership between MERCADO and your university/school has affected you?
Até que ponto acredita que foi afectado pela parceria entre o projecto MERCADO e a sua Universidade/Escola?
- a. Did you work with MERCADO in any capacity besides the internship?
Trabalhou com o projecto MERCADO num outro âmbito para além do estágio?
10. How do you think MERCADO has affected participating farmers?
Na sua opinião, como é que o projecto MERCADO tem afectado os produtores que participam no projecto?
11. *(If not mentioned earlier)* How has Cyclone Idai impacted you in the last 12 months? *(Probe on the student internship, school, host business)*
(Se não foi mencionado anteriormente) Como é que o Ciclone Idai o afectou nos últimos 12 meses?
(Procure saber sobre o estágio de estudante, escola, empresa/exploração leiteira anfitriã)
12. *(If not mentioned earlier)* How has the COVID-19 pandemic impacted you? *(Probe on the student internship, school, host business)*
(Se não foi mencionado anteriormente) Como é que o impacto da pandemia da COVID-19 o afectou?
(Procure saber sobre o estágio do estudante, escola, empresa/exploração leiteira anfitriã)

13. *(If not mentioned earlier)* How has low intensity civil war impacted you? *(Probe on the student internship, school, host business)*
(Se não foi mencionado anteriormente) Como é que o impacto das hostilidades militares o afectou? (Procure saber sobre o estágio do estudante, escola, empresa/exploração leiteira anfitriã)
14. *(If not mentioned earlier)* How has Cyclone Eloise impacted you?
(Se não mencionado anteriormente) Como o Ciclone Eloise afetou você?
15. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que não tenha perguntado, que gostaria de partilhar comigo, ou têm alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e seus comentários.

Lecturer Interview Guide – Guião de Entrevista ao Professor

Data (Dia /Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretario/Anotador:

Nome(s):

Género:

Escola:

Hora de início:

Hora do término:

INTRODUCTION

Introdução

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The discussion will be approximately 30 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).

Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam

duma forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 30 minutos. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Se surgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

1. To begin, please introduce yourself, and tell me about your background as a teacher -- how long have you been a teacher and how long have you been at this school?
Para começar, por favor apresente-se e fale da sua experiência como professor - há quanto tempo é professor e há quanto tempo está nesta escola?
2. I'd like for you to describe the activities that you participated in as part of the MERCADO project (*Probe curriculum training, nutrition training, etc.*) In your opinion, were these activities carried out in a timely or effective manner? Please describe.
Gostaria que descrevesse as actividades em que participou como parte do projecto MERCADO (*Procurar saber sobre o currículo de formação, a formação em nutrição, etc.*) Na sua opinião, estas actividades foram realizadas em tempo útil ou eficaz? Por favor, dê detalhes .
 - i. How were these activities received by your students?
Como é que estas actividades foram recebidas pelos seus estudantes?
3. What changes were made to the curriculum?
Que alterações foram feitas ao currículo?
 - i. Did you find these changes valuable? Please explain.
Acha que estas alterações foram valiosas? Explique, por favor.
 - ii. Did your students find these changes valuable? Please explain.
Os seus estudantes acharam estas alterações valiosas? Por favor, explique.
 - iii. What impact have you seen from these changes?
Que impacto notou decorrente destas mudanças?

4. Were there further changes you would have liked to see in the curriculum? Such as?
Gostaria de ter visto introduzidas outras mudanças no currículo? Dê alguns exemplos ?
5. Will you use the revised curriculum now/in the future?
Vai usar o currículo revisado agora/no futuro?
 - i. Would you use any part of it? If so, which part? Why?
Faria uso de alguma parte do currículo? Se sim, que parte? Porquê?
 - ii. What parts would you not use? Why?
Que partes não usaria? Porquê?
6. Are some other parts challenging to teach? Why?
Há algumas partes do currículo que constituem um desafio para ensinar? Porquê?
 - i. Would you use these parts in the future? Why or why not?
Faria uso destas partes no futuro? Porquê ou porquê não?
 - ii. How would you use these parts in the future?
Como faria uso destas partes no futuro?
7. Can you describe your relationship/interactions with students in relation to MERCADO?
Pode descrever a sua relação/interacção com os estudantes em relação ao projecto MERCADO?
 - i. Did your students submit reports about their internship to you? If so, please describe.
Os seus estudantes submeteram relatórios sobre o seu estágio a si? Se sim, por favor dê detalhes.
8. Could you please describe your partnership with MERCADO? *Probe for successes and challenges, and effectiveness of timeline of activities.*
Poderia descrever a sua parceria com o projecto MERCADO? *Procure saber sobre sucessos e desafios, e a eficácia do cronograma de actividades.*
 - i. Were you able to communicate with Venture37 as needed?
Foi capaz de comunicar com Venture37/Land O' Lakes sempre que precisou ?
 - ii. Has this project impacted you professionally? Please describe.
Este projecto teve impacto na sua carreira profissional? Por favor, dê detalhes
9. Did your institution have a student farm?
A sua instituição tinha uma exploração leiteira para aulas práticas dos estudantes?
 - i. How has this impacted your teaching?
Qual foi o impacto da existência da exploração leiteiras para aulas práticas no seu ensino?
 - ii. How has this impacted your students' learning?
Qual foi o impacto da existência da exploração leiteiras para aulas práticas na aprendizagem dos seus estudantes?
10. *(If not mentioned earlier)* Has COVID-19 impacted your teaching and participation in the project? If so, please describe how.
(Se não foi mencionado anteriormente) A COVID-19 teve algum impacto no seu processo de ensino e sua participação no projecto? Se sim, por favor descreva como.
11. *(If not mentioned earlier)* Has Cyclone Idai impacted your teaching and participation in the project? If so please describe how.

(Se não foi mencionado anteriormente) O Ciclone Ida teve algum impacto no seu processo de ensino e sua participação no projecto? Se sim, por favor descreva de que forma.

12. *(If not mentioned earlier)* Has low intensity civil war impacted your teaching and participation in the project? If so, please describe how.
(Se não foi mencionado anteriormente) As hostilidades militares tiveram algum impacto no seu processo de ensino e sua participação no projecto? Se sim, por favor descreva como.
13. *(If not mentioned earlier)* Has Cyclone Eloise impacted your teaching and participation in the project? If so, please describe how.
(Se não mencionado anteriormente) O Ciclone Eloise teve algum impacto no seu trabalho de ensinar e na sua participação no projeto? Em caso afirmativo, descreva como.
14. Are there any challenges specifically faced by women in the dairy value chain?
Existem desafios especificamente enfrentados pelas mulheres na cadeia-de-valor do leite?
- i. Are there any challenges specifically faced by women dairy farmers that are not faced by men farmers? Please explain.
Há alguns desafios enfrentados especificamente pelas mulheres produtoras de leite que não o são pelos homens produtores? Por favor, explique.
 - ii. How do you think MERCADO could have addressed these challenges?
Como pensa que MERCADO poderia ter respondido a estes desafios?
15. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.

Retailer Interview Guide – Guião de Entrevista ao Retalhista

Data (Dia/Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretario/Anotador:

Nome:

Nome da Organização:

Género:

Hora de início:

Hora de término:

INTRODUCTION **Introdução**

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will take approximately 30 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário). Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam dum formaútil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 30 minutos. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não quiser responder.

Se surgirem outras perguntas depois de este encontro, pode sempre contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se o participante tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento para ao participante? ☐ Sim ☐ Não

1. What is your title? Please describe your retail business (e.g. supermarket/grocery store/street kiosk). How long have you been involved with the MERCADO project and in what capacity?
Qual é o seu título? Por favor, descreva o seu negócio de retalho (por exemplo, supermercado/loja/barraca). Há quanto tempo está envolvido com o projecto MERCADO e como quem?
2. What are the barriers to growth in selling local dairy milk and products in Mozambique? How has MERCADO been attempting to address these barriers? *Probe for successes and challenges.*
Quais são as barreiras para o aumento da venda do leite e produtos lácteos locais em Moçambique? Como é que o projecto MERCADO tem tentado enfrentar estas barreiras? Procure saber quais são os sucessos e desafios.
3. Who do you purchase local milk and other dairy products from? (e.g. cooperatives, processors, farmers, other). Please describe and share why you selected these options.

De quem compra o leite e outros produtos lácteos locais? (por exemplo, cooperativas, processadores, produtores, outros). Por favor, descreva e partilhe as razões que o levaram a seleccionar estas opções.

a. Which dairy products do you purchase and why?

Que produtos lácteos compra e porquê?

b. Please describe your interactions with dairy milk and product suppliers.

Por favor, descreva as suas interações com os fornecedores de leite e produtos lácteos.

4. How did you engage with the MERCADO project? Please describe. *Probe for successes and challenges.*
Como se envolveu com o projecto MERCADO? Por favor, dê detalhes. *Procure saber sobre os sucessos e desafios.*

a. Did the MERCADO project facilitate connections for you with processors or other suppliers of locally-produced dairy products? Please explain. In your opinion, were these activities carried out in a timely manner?

O projecto MERCADO ajudou-lhe no estabelecimento de ligações com processadores ou outros fornecedores de produtos lácteos produzidos localmente? Por favor, explique. Na sua opinião, estas actividades foram realizadas em tempo útil?

b. Have there been changes in your access to local milk and dairy products?

Houve alterações no seu acesso ao leite e produtos lácteos locais?

c. Were you aware of the Dairy Innovation Fund (DIF)? Did you apply for a grant? If so, what did you apply for and what did you receive? In your opinion, were these activities carried out in a timely manner?

Teve conhecimento do Fundo de Inovação Leiteira (DIF)? Candidatou-se a uma subvenção? Se sim, a que se candidatou e o que recebeu? Na sua opinião, estas actividades foram realizadas em tempo útil?

d. Would you have liked to receive any additional support from the MERCADO project?

Gostaria de ter recebido algum apoio adicional do projecto MERCADO?

5. Have you seen changes in **sales** of locally produced milk and dairy products in your retail business? Please describe if increase, decrease, or no change.

Houve alterações nas vendas de leite e produtos lácteos produzidos localmente no seu negócio de retalho? Por favor descreva se houve aumento, diminuição ou nenhuma alteração.

a. Are there differences in sales of local vs. imported dairy products? Please explain.

Existem diferenças nas vendas de produtos lácteos locais em comparação com produtos lácteos importados? Por favor, explique.

6. Have you seen changes in **demand** for locally produced milk and dairy products in your retail business? Please describe if increase, decrease, or no change.

Houve mudanças na **procura** de leite e produtos lácteos produzidos localmente no seu negócio de retalho? Por favor descreva se houve aumento, diminuição, ou nenhuma alteração.

7. Are there any challenges specifically faced by women in the dairy value chain?

Existem desafios enfrentados especificamente pelas mulheres na cadeia-de-valor do leite?

a. How do you think MERCADO could have addressed these challenges?

Como pensa que o projecto MERCADO poderia ter respondido a estes desafios?

8. *(If not mentioned earlier)* What effect did Cyclone Idai have on the dairy industry in Mozambique? What about for your retail business?
(Se não foi mencionado anteriormente) Qual foi o efeito do Ciclone Idai na indústria leiteira em Moçambique? E para o seu negócio de retalho?
9. *(If not mentioned earlier)* What effect did COVID-19 have on the dairy industry in Mozambique? What about for your retail business?
(Se não foi mencionado anteriormente) Qual foi o efeito da COVID-19 na indústria leiteira em Moçambique? E para o seu negócio de retalho?
10. *(If not mentioned earlier)* What effect did low intensity civil war have on the dairy industry in Mozambique? What about for your retail business?
(Se não foi mencionado anteriormente) Qual foi o efeito das hostilidades militares na indústria leiteira em Moçambique? E para o seu negócio de retalho?
11. *(If not mentioned earlier)* What effect did Cyclone Eloise have on the dairy industry in Mozambique? What about for your retail business?
(Se não mencionado anteriormente) Que efeito o Ciclone Eloise teve na indústria leiteira em Moçambique? E no seu negócio de venda?
12. Do you plan to continue selling locally-produced dairy milk and products in your business? Please explain.
Tenciona continuar a vender leite e produtos lácteos produzidos localmente no seu negócio? Por favor, explique.
13. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.

Project Staff/Partners Interview Guide – Guião de Entrevista ao Pessoal/Parceiros do Projecto

Data (Dia/Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretário/Anotador:

Nome: Nome:

Nome da Organização:

Género:

Hora de início:

Hora de término

INTRODUCTION Introdução

Our names are _____ and _____ (*Facilitator and Note Taker*). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will take approximately one hour. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (*Facilitador e secretário*).

Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam

duma forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 1 hora. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não quiser responder.

Sesurgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se o participante tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento ao participante? ☐ Sim ☐ Não

1. What is your title? How long have you been involved with the MERCADO project and in what capacity?
Qual é o seu título? Há quanto tempo está envolvido com o projecto MERCADO e em que capacidade?

2. What are the barriers to growth in the dairy industry in Mozambique? How has MERCADO been attempting to address these barriers?
Quais são as barreiras ao crescimento da indústria leiteira em Moçambique? Como é que o MERCADO tem tentado enfrentar estas barreiras?

3. Can you tell me about the activities that you or your project staff have provided as part of this project? (Probe: **for MERCADO:** Trainings of farmers in animal husbandry/farm management; Capacity building of cooperatives; Capacity building of processors; Grants/co-investment to farmers for heifers/other equipment, etc.; Grants/co-investment to other dairy businesses for equipment, etc.; Nutrition training at schools; Curriculum development for technical schools on dairy; Student Interns; Training of CLWs; etc. **for TILLERS:** Training of farmers in fodder production; Training of artisans in making fodder production tools; training of artisan in business skills, establishment of answer plots; holding of technology expo)

Pode falar-me sobre as actividades que o(a) senhor(a) ou o seu pessoal do projecto têm providenciado como parte deste projecto? (Procure saber sobre : **para o projecto MERCADO:** Treinamento de produtores em criação de gado leiteiro/gestão de explorações leiteiras; Capacitação de cooperativas; Capacitação de processadores; Subvenções/co-investimento a produtores para novilhas/outros equipamentos, etc.; Subvenções/co-investimento a outros empreendimentos leiteiros para equipamento, etc. treinamento em nutrição nas escolas; Desenvolvimento curricular sobre criação de gado leiteiro nas escolas agro-pecuárias ; Estudantes estagiários; Treinamentos de promotores; etc. **para TILLERS:** Treinamento de produtores na produção de forragem; Treinamento de artesãos no fabrico de ferramentas de produção de forragem; Treinamento de artesãos em competências de negócios, estabelecimento de campos de demonstração ; realização de feiras de tecnologia)

- a. Please explain this activity. Did this activity proceed as planned? Was this activity carried out in a timely manner? If not, why not. If so, what led to this?

Por favor, explique esta actividade. Esta actividade foi implementada como planeado? Esta actividade foi realizada em tempo útil? Se não, porquê não. Se sim, o que propiciou a realização da actividade em tempo útil?

- b. How did this activity impact project participants? Did these results occur as planned? Why or why not?

Qual foi o impacto desta actividade nos participantes do projecto? Estes resultados ocorreram como planeado? Porquê ou porquê não?

- c. Did men and women have equal opportunities to participate in project activities? Was there a difference between how this activity affected men and women? What do you think could have been done better by MERCADO to increase the participation of women and improve their results?

Houve igualdade de oportunidades entre homens e mulheres para participar nas actividades do projecto? Havia diferença entre a forma como esta actividade afectou homens e mulheres? O que pensa que poderia ter sido feito melhor pelo projecto MERCADO para aumentar a participação das mulheres e melhorar os seus resultados?

- d. From your perspective, will this activity be sustainable beyond project funding? Please explain. What are the biggest challenges to sustainability? How does the project plan to ensure sustainability of any achievements?

Do seu ponto de vista, esta actividade será sustentável para além do financiamento do projecto? Explique, por favor. Quais são os maiores desafios para a sustentabilidade? Como é que o projecto planeia assegurar a sustentabilidade das realizações?

4. Was the implementation of some activities more successful than others? If so, which ones? Why? A implementação de algumas actividades foi mais bem-sucedida do que outras? Se sim, quais? Porquê?

5. What challenges did you face in project implementation? What about challenges for project participants? What did you do to address these challenges? Were there any challenges that were specific to women participants?

Que desafios enfrentou na implementação do projecto? E os desafios dos participantes do projecto? O que fez para enfrentar estes desafios? Houve alguns desafios específicos para as mulheres participantes?

6. How effective was the monitoring strategy for collecting regular and reliable data on the project? What were the strengths and gaps in the monitoring system? To your knowledge, was monitoring and evaluation data used to make programmatic decisions? If yes, can you give me an example? *Quão eficaz foi a estratégia de monitorização para recolher dados regulares e fiáveis sobre o projecto? Quais eram os pontos fortes e as lacunas do sistema de monitorização? Tanto quanto é do seu conhecimento, os dados de monitorização e avaliação foram utilizados para tomar decisões de programação? Se sim, pode dar um exemplo?*

7. Did expected results occur as planned? To what extent were the objectives and project targets achieved by the end of the project?

Os resultados esperados ocorreram conforme planeado? Em que medida os objectivos e metas do projecto foram alcançados até ao final do projecto?

8. What were examples of successes and challenges for the MERCADO project?

Quais foram os exemplos de sucessos e de desafios para o projecto MERCADO?

- a. How did reduced funding and shortened project lifespan impact the MERCADO project?

Como é que a redução do financiamento e a redução da duração do projecto tiveram impacto no projecto MERCADO?

9. Please tell us about any innovations, lessons learned, and best practices in implementation that you discovered.

Fale-nos sobre as inovações, lições aprendidas e melhores práticas na implementação que tenha descoberto.

10. Are you familiar with the midterm evaluation findings? To what extent did the project implement the midterm evaluation recommendations? What effect did this have on the project's achievements, if any?

Está familiarizado com os resultados da avaliação de meio-termo? Em que medida é que o projecto implementou as recomendações da avaliação meio-termo? Que efeito teve isto nas realizações do projecto, se é que teve algum?

- a. *(If needed, probe: Continue policy work and increase focus on implementation; encourage commercial investments at various levels in the dairy sector; increase production volumes; scale down the dairy demand campaign and continue to expand sales of local milk; improve market access for dairy farmers/address transportation challenges for farmers; facilitate increase in credit access for project beneficiaries; facilitate increase in the prices for milk received by farmers and cooperatives)*

(Se necessário, procure saber: Continuidade do trabalho na área de política e aumento do foco na implementação; encorajamento de investimentos comerciais a vários níveis no sector leiteiro; aumento de volumes de produção; redução das campanhas para aumentar a

demandade leite e continuar a expandir as vendas de leite local; melhorar o acesso ao mercado para os produtores de leite/resolver os desafios de transporte para os produtores; facilitar o aumento do acesso ao crédito para os beneficiários do projecto; facilitar o aumento dos preços do leite recebido pelos produtores e cooperativas)

11. How did the MERCADO project engage the government and the private sector to strengthen and support the dairy industry in Mozambique? *Probe if there is more cooperation and understanding between both actors.*

Como é que o projecto MERCADO envolveu o governo e o sector privado para reforçar e apoiar a indústria leiteira em Moçambique? Procure saber se existe mais cooperação e compreensão entre ambos os actores.

12. What outputs and outcomes are most likely to continue once MERCADO project funding ends? What is the project's exit plan?

Quais são os resultados imediatos e a longo-prazo que são mais prováveis de continuar uma vez terminado o financiamento do projecto MERCADO? Qual é a estratégia de saída do projecto?

13. *(If not mentioned earlier)* We would like to ask about some external factors. First, what effect did Cyclone Idai have on the dairy industry in Mozambique? What about for your planned project activities? Did it influence project implementation in any way?

(Se não foi mencionado anteriormente) Gostaríamos de lhe perguntar sobre alguns factores externos. Primeiro, que impacto teve o Ciclone Idai na indústria leiteira em Moçambique? E para as suas actividades planificadas do projecto? Influenciou de alguma forma a implementação do projecto?

14. *(If not mentioned earlier)* What effect did COVID-19 have on the dairy industry in Mozambique? What about for your planned project activities? Did it influence project implementation in any way?

(Se não foi mencionado anteriormente) Que efeito teve a COVID-19 na indústria leiteira em Moçambique? E para as suas actividades planificadas do projecto? Influenciou de alguma forma a implementação do projecto?

15. *(If not mentioned earlier)* What effect did low intensity civil war have on the dairy industry in Mozambique? What about for your planned project activities? Did it influence project implementation in any way?

(Se não mencionado anteriormente) Que efeitos tiveram as hostilidades militares na indústria leiteira em Moçambique? E para as suas actividades planificadas do projecto? Influenciou de alguma forma a implementação do projecto?

16. *(If not mentioned earlier)* What effect did Cyclone Eloise have on the dairy industry in Mozambique? What about for your planned project activities? Did it influence project implementation in any way?

(Se não mencionado anteriormente) Qual o efeito do Ciclone Eloise na indústria leiteira em Moçambique? E em relação as suas actividades do projeto planeadas? Isso influenciou a implementação do projeto de alguma forma?

17. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?

Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma reflexão adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e seus comentários.

Producer Interview Guide – Guião de Entrevista ao Produtor

Data (Dia/Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretario/ anotador:

Localização:

Número de participantes (F):

Número de participantes (M):

Hora de início:

Hora de término:

INTRODUCTION **Introdução**

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique. Our discussion today will focus on the effect the MERCADO project has had on your farm management practices and productivity, as well as on any successes and challenges you've faced. This will help provide the research team with greater detail about the survey questions that you answered earlier.

The discussion will be approximately 45 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this discussion. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

If I have your permission, I would like to record our discussion today, for the purpose of taking notes later. This recording can only be accessed by our research team, and will not be shared with anyone else.

Does anyone have any questions for me?

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).
Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam numa forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique. A nossa discussão de hoje irá focar-se no efeito que o projecto MERCADO tem tido nas vossas práticas de gestão das farmas e produtividade, assim como nos sucessos e desafios que têm enfrentado. Isto ajudará a fornecer, à equipa de pesquisa, mais detalhes sobre as questões do inquérito que responderam anteriormente.

A conversa terá a duração aproximada de 45 minutos. Por favor, sintá-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Se eu tiver a vossa permissão, gostaria de gravar a nossa discussão de hoje, com o propósito de tomar notas mais tarde. Esta gravação só pode ser acedida pela nossa equipa de pesquisa e não será partilhada com mais ninguém.

Alguém tem alguma pergunta a fazer?

Se surgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar convosco os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participants had any questions? ☐ Yes ☐ No

Perguntou se os participantes tinham alguma questão? ☐ Sim ☐ Não

b) Did participants agree to participate? ☐ Yes ☐ No → STOP

Os participantes concordaram em participar? ☐ Sim ☐ Não → Pare

- c) Did ALL participants consent to be recorded? ☐ Yes ☐ No → DO NOT START TAPE RECORDER

Todos os participantes consentiram em ser gravados? ☐ Sim ☐ Não → Não ligue o Gravador.

1. Please share your role in the MERCADO project and in the dairy value chain (*Probe: role as breeder, farmer, processor*)

Por favor partilhe o seu papel no projecto MERCADO e na cadeia-de-valor do leite (*Procure saber se o entrevistado é: criador de reprodutores, produtor, processador*)

2. I would like for you to describe the activities that you participated in as part of the MERCADO project – both the training and support that you’ve received, and the resources that you’ve received. First, I’d like to talk about training.

Gostaria que descrevesse as actividades do projecto MERCADO em que participou - tanto de treinamento eo apoio que recebeu como dos recursos que recebeu. Em primeiro lugar, gostaria de falar sobre treinamento.

- a. What kind of training or help did you receive?

Que tipo de treinamento ou ajuda recebeu?

- b. Who provided it, and when? In your opinion, were these activities carried out in a timely manner?

Quem deu esse treinamento ou ajuda, e quando? Na sua opinião, estas actividades foram realizadas em tempo útil?

- c. What did you like about this? What did you not like about the training?

O que lhe agradou sobre o que recebeu? O que não lhe agradou no treinamento?

- d. What are specific results that you have seen as a result of this training? (*Probe for increased production, etc.*) Are there any negative results?

Quais são os resultados específicos que tem visto como resultado deste treinamento? (*Procure saber sobre aumento da produção, etc.*). Existem resultados negativos?

- e. Are there any areas where you need more support?

Existem algumas áreas em que necessita de mais apoio?

3. Now, I’d like to talk about resources.

Agora, gostaria de falar sobre recursos.

- a. What kind of resources did you receive?

Que tipo de recursos recebeu?

- b. Who provided it, and when? In your opinion, are these activities carried out in a timely manner?

Quem forneceu os recursos e quando? Na sua opinião, estas actividades foram realizadas em tempo útil?

- c. What did you like about these resources? What did you not like?

O que lhe agradou nestes recursos? O que não lhe agradou?

- d. What are specific results that you have seen as a result of this resource? Are there any negative results?
Quais são os resultados específicos que tem visto como resultado deste recurso? Existem alguns resultados negativos?
 - e. Are there any additional resources that you need?
Há algum recurso adicional de que necessite?
4. Has your participation in the MERCADO project had any effect, positive or negative, on your dairy sector practices and productivity that you did not mention already? If yes, how? Please describe successes and challenges.
A sua participação no projecto MERCADO teve algum impacto positivo ou negativo, nas suas práticas e produtividade no sector leiteiro que ainda não mencionou? Se sim, como? Por favor, descreva os sucessos e desafios.
5. Has your participation in the MERCADO project changed your business, financial, or marketing practices that you did not mention already? If yes, how? Please describe successes and challenges.
A sua participação no projecto MERCADO mudou as suas práticas de negócios, financeiras ou de marketing que ainda não mencionou? Se sim? Descreva por favor os sucessos e os desafios.
6. From your perspective, which activities and processes will be sustainable beyond the end of the MERCADO project and which will not be sustainable? Please explain.
Na sua perspectiva, que actividades e processos serão sustentáveis após o fim do projecto MERCADO e quais não serão sustentáveis? Por favor, explique.
 - a. What are the biggest challenges to achieving sustainable marketing and increases in sales and quality?
Quais são os maiores desafios para alcançar a sustentabilidade no marketing e aumento de qualidade e vendas?
7. *(If not mentioned earlier)* Has Cyclone Idai had any effect on your business activities in the last 12 months? Please explain.
(Se não foi mencionado anteriormente) O Ciclone Idai teve algum efeito nas actividades do seu negócio nos últimos 12 meses? Por favor, explique.
8. *(If not mentioned earlier)* Has COVID-19 had any effect on your business activities in the last 12 months? Please explain.
(Se não foi mencionado anteriormente) A COVID-19 teve algum efeito nas actividades do seu negócio nos últimos 12 meses? Por favor, explique.
9. *(If not mentioned earlier)* Has low intensity civil war had any effect on your business activities in the last 12 months? Please explain.
(Se não foi mencionado anteriormente) As hostilidades militares tiveram algum efeito nas actividades do seu negócio nos últimos 12 meses? Por favor, explique.
10. *(If not mentioned earlier)* Has Cyclone Eloise had any effect on your business activities?
(Se não mencionado anteriormente) O Ciclone Eloise teve algum efeito em suas atividades comerciais?

11. From your perspective, has the overall MERCADO project adequately addressed your needs? In your opinion, what other activities could the project do with you to have a greater impact?

No seu ponto de vista, será que o projecto MERCADO, no geral, respondeu adequadamente às suas necessidades? Na sua opinião, que outras actividades o projecto poderia realizar consigo para ter um maior impacto?

12. Are there any challenges specifically faced by women in the dairy value chain that are not faced by men? Please explain. Are there any kinds of support provided from the MERCADO project to overcome these challenges that you know of?

Existem desafios especificamente enfrentados pelas mulheres na cadeia-de-valor do leite que não são enfrentados pelos homens? Explique, por favor. Sabe se existe algum tipo de apoio providenciado pelo projecto MERCADO para superar estes desafios?

13. Looking forward, what would you like to do with your business? Are any of you thinking of expanding? What influences these different considerations? What kind of improvements or additional supports are needed?

Olhando para o futuro, o que gostaria de fazer com o seu negócio? Existe alguém entre vocês que está a pensar em expandir? O que influência estas diferentes considerações? Que tipo de melhorias ou apoios adicionais são necessários?

14. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?

Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou têm algum pensamento adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.

Government Stakeholders Interview Guide - Guião de Entrevista aos Intervenientes do Governo

Data (Dia /Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretário/Anotador:

Nome:

Organização:

Género:

Hora de início:

Hora de término:

INTRODUCTION Introdução

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will be approximately 30 minutes. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).

Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam

duma forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 30 minutos. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não quiser responder.

Sesurgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se o participante tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento ao participante? ☐ Sim ☐ Não

1. What is your title? How long have you been with [government department/organization]?

Qual é o seu título? Há quanto tempo trabalha com [departamento/organização governamental]?

2. Can you tell me how you have engaged with the MERCADO project since it began in October 2016? How long have you been working with this project?

Pode contar como se envolveu com o projecto MERCADO desde o seu início em Outubro de 2016? Há quanto tempo trabalha com este projecto?

3. Can you describe how the MERCADO project collaborated with your government department/organization? Was this an adequate level of collaboration? Why or why not? How could it have been improved?
Pode descrever como é que o projecto MERCADO colaborou com o seu departamento/organização governamental? O nível de colaboração foi adequado? Porquê ou porquê não? Como é que esta colaboração poderia ter sido melhorado?
4. What are the barriers to growth in the dairy industry in Mozambique? What do you see as the government's role in addressing these barriers and strengthening the dairy sector?
Quais são as barreiras ao crescimento da indústria leiteira em Moçambique? O que vê como papel do governo em resposta a estas barreiras e no reforço do sector leiteiro?
 - a. Have you or other colleagues considered public-private partnerships to address any of these barriers?
O(a) Senhor(a) ou outros colegas consideraram a possibilidade de parcerias entre os sectores público e privado para responder a alguma destas barreiras?
5. What has been done and what are the next steps on approval, roll-out, and implementation of the dairy sector legislation, regulations, and strategy listed below?
O que tem sido feito e quais são os próximos passos na aprovação, difusão e implementação da legislação, regulamentos e estratégia do sector leiteiro abaixo listados?
 - a. Livestock Health Legislation.
Regulamento de Sanidade Animal.
 - b. Regulation on Raw Milk Production, Collection, Transport and Commercialization.
Regulamento de Produção, Recolha, Transporte e Comercialização de Leite Cru
 - c. Livestock Feed Regulation
Regulamento de Rações para Animais.
 - d. National Dairy Strategy Development
Estratégia Nacional de Desenvolvimento do Sector Leiteiro
6. What are the overall challenges you see towards making policy reform or updating regulatory frameworks that support growth and investment in the dairy sector?
Quais são os desafios gerais que vê na reforma das políticas ou na actualização dos quadros regulamentares que apoiam o crescimento e o investimento no sector leiteiro?
7. What activities and policies do you think the government of Mozambique will continue to move forward with after the project ends?
Que actividades e políticas pensa que o governo de Moçambique continuará a dar seguimento após o fim do projecto?
8. Are there any challenges specifically faced by women in the dairy value chain? (*if very general response, probe for specific actors such as farmers, cooperatives, processors, and breeders*)
Existem alguns desafios especificamente enfrentados pelas mulheres na cadeia-de-valor do leite? (*se resposta é muito geral, procure saber sobre actores específicos tais como produtores, cooperativas, processadores e criadores de gado reprodutor*)
 - a. How do you think MERCADO could have addressed these challenges?
Como pensa que o MERCADO poderia ter respondido a estes desafios?

9. If MERCADO continued for another 12 months, how would that affect the dairy sector activities and policies?
Se o projecto MERCADO tivesse continuado por mais 12 meses, como é que isso afectaria as actividades e as políticas do sector leiteiro?
10. In your opinion, is there anything about the project that could have been strengthened or done differently? Do you have any suggestions for improving the project? *Probe for successes and challenges.*
Na sua opinião, há alguma coisa sobre o projecto que poderia ter sido fortalecido ou feito de forma diferente? Tem alguma sugestão para melhorar o projecto? Procure saber sobre sucessos e os desafios.
11. *(If not mentioned earlier)* What have been the effects of Cyclone Idai on the dairy industry in the last 12 months?
(Se não foi mencionado anteriormente) Quais foram os efeitos do Ciclone Idai na indústria leiteira nos últimos 12 meses?
12. *(If not mentioned earlier)* What have been the effects of COVID-19 on the dairy industry in the last 12 months?
(Se não foi mencionado anteriormente) Quais foram os efeitos da COVID-19 na indústria leiteira nos últimos 12 meses?
13. *(If not mentioned earlier)* What have been the effects of low intensity civil war on the dairy industry in the last 12 months?
(Se não foi mencionado anteriormente) Quais foram os efeitos das hostilidades militares na indústria leiteira nos últimos 12 meses?
14. *(If not mentioned earlier)* What have been the effects of Cyclone Eloise on the dairy industry?
(Se não mencionado anteriormente) Quais foram os efeitos do Ciclone Eloise na indústria de leiteira?
15. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou têm alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.

Veterinary Shops Interview Guide - Guião de Entrevista a Lojas Veterinárias

Data (Dia/Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretario/ Digitador:

Nome:

Género:

Hora de início:

Hora de término:

INTRODUCTION Introdução

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will be approximately an hour. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário).
Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam de forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 1 hora. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Sesurgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se o participante tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento ao participante? ☐ Sim ☐ Não

1. What is your title? Please describe your business. How long have you been involved with the MERCADO project and in what capacity?

Qual é o seu título? Por favor, descreva o seu negócio. Há quanto tempo está envolvido com o projecto MERCADO e em que capacidade?

2. Please describe the overall products you carry.

Por favor, descreva os todos produtos que possui.

a. Please describe the dairy-cattle-specific products you carry and the differences between them.

Por favor, descreva os produtos específicos para gado leiteiro que possui e as diferenças entre estes.

- b. What percentage of your total products are agricultural products? Livestock products? What percentage of your livestock products are dairy-cattle-specific products?

Que percentagem do total dos seus produtos são produtos agrícolas? Produtos pecuários?

Que percentagem dos seus produtos pecuários são produtos específicos de gado leiteiro?

3. Please describe your typical customers. *Probe for breakdown of individual farmers, cooperatives, others.*

Por favor, descreva os seus clientes típicos/Habituais. Procure saber sobre a *discriminação de produtores individuais, cooperativas, outros.*

- a. How do you reach your customers?

Como é que alcança os seus clientes?

- b. How do you reach customers for dairy-cattle-specific products?

Como alcança os seus clientes de produtos específicos de gado leiteiro?

- i. Are there differences in how you reach individual farmers compared to cooperatives? Please describe.

Existem diferenças na forma como se alcança os produtores individuais em comparação com as cooperativas? Por favor descreva.

- c. In your experience, what is the most effective way to reach customers for dairy-cattle-specific products? Why?

Na sua experiência, qual é a forma mais eficaz de se alcançar os clientes para produtos específicos de gado leiteiro? Porquê?

4. Do you work with paravets, or others who can recommend your products or administer services using your products? If so, please describe your business relationships with these groups.

Trabalha com promotores ou outros intervenientes que possam recomendar os seus produtos ou prestar serviços utilizando os seus produtos? Se sim, por favor descreva as suas relações de negócio com estes grupos.

5. How did you engage with the MERCADO project? Please describe. *Probe for successes and challenges. Como se envolveu com o projecto MERCADO? Por favor, descreva. Procure saber de sucessos e desafios.*

- a. Did the MERCADO project facilitate connections for you with cooperatives or other customers of dairy products? Please explain. In your opinion, are these activities carried out in a timely manner?

O projecto MERCADO facilitou-lhe as ligações com cooperativas ou outros clientes de produtos lácteos? Por favor, explique. Na sua opinião, estas actividades foram realizadas em tempo útil?

- b. Do you think farmers or cooperatives will continue purchasing products for dairy needs once the MERCADO project ends? Why or why not?

Julga que os produtores ou cooperativas continuarão a comprar produtos para satisfazer as necessidades do seu gado leiteiro quando o projecto MERCADO terminar? Porquê ou porquê não?

- c. Were you aware of the Dairy Innovation Fund (DIF)? If so, did you apply for a grant? If so, what did you apply for and what did you receive? In your opinion, are these activities carried out in a timely manner?

Tinha conhecimento do Fundo de Inovação Leiteira (DIF)? Se sim, candidatou-se a uma subvenção? Se sim, a que se candidatou e o que recebeu? Na sua opinião, estas actividades foram realizadas em tempo útil?

- d. Would you have liked to receive any additional support from the MERCADO project?
Gostaria de ter recebido algum apoio adicional do projecto MERCADO?
6. How do you source your dairy-specific products (e.g. imports)? Please describe the costs for getting dairy-specific products.
Como é que obtém os seus produtos específicos para a criação de gado leiteiro (p. ex. importações)? Por favor descreva os custos para a obtenção de produtos.
- a. What challenges, if any, do you face in sourcing dairy-specific products?
Que desafios, se houver, enfrenta na obtenção de produtos específicos para a criação de gadoleiteiro?
7. Have you seen changes in sales for products for dairy cattle in the last 4 years since the MERCADO project started? Please describe if increase, decrease, or no change.
Tem visto mudanças nas vendas de produtos para o gado leiteiro nos últimos 4 anos desde o início do projecto MERCADO? Por favor, descreva se houve aumento, diminuição, ou nenhuma mudança.
8. What percentage of your total sales are dairy-specific products? Livestock products? Agricultural products?
Que percentagem das suas vendas totais são produtos específicos para a criação de gadoleiteiro? Produtos pecuários? Produtos agrícolas?
9. What challenges, if any, do you face in selling dairy-specific products? *Probe for different types of challenges: marketing, financial, personnel, etc.*
Que desafios, se houver, enfrenta na venda de produtos específicos para o sector leiteiro? *Procure saber sobre diferentes tipos de desafios: marketing, financeiro, pessoal, etc.*
10. What are the barriers to growth in selling dairy-specific products in Mozambique? How has MERCADO been attempting to address these barriers? *Probe for successes and challenges.*
Quais são as barreiras ao crescimento da venda de produtos específicos para o sector leiteiro em Moçambique? Como é que o MERCADO tem tentado ultrapassar estas barreiras? *Procure saber sobre sucessos e desafios.*
11. Are there any challenges specifically faced by women in the dairy value chain?
Existem desafios enfrentados especificamente pelas mulheres na cadeia-de-valor do leite?
- a. How do you think MERCADO could have addressed these challenges?
Como pensa que MERCADO poderia ter respondido a estes desafios?
12. How could your dairy-sector business expand? Please explain.
Como poderia expandir o seu negócio no sector leiteiro? Explique, por favor.
13. *(If not mentioned earlier)* What effect did Cyclone Idai have on your business? What about for your dairy-specific business?
(Se não foi mencionado anteriormente) Que efeito teve o Ciclone Idai no seu negócio? E para o seu negócio específico no sector leiteiro?

14. *(If not mentioned earlier)* What effect did COVID-19 have on your business? What about for your dairy-specific business?
(Se não foi mencionado anteriormente) Que efeito teve a COVID-19 no seu negócio? E para o seu negócio específico no sector leiteiro?
15. *(If not mentioned earlier)* What effect did low intensity civil war have on your business? What about for your dairy-specific business?
(Se não foi mencionado anteriormente) Que efeito tiveram as hostilidades militares no seu negócio? E para o seu negócio específico no sector leiteiro?
16. *(If not mentioned earlier)* What effect did Cyclone Eloise have on your business? What about for your dairy-specific business?
(Se não mencionado anteriormente) Que efeito o Ciclone Eloise teve no seus negócios? E em relação ao negócio específico no sector leiteiro?
17. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.

Feed Suppliers Interview Guide - Guião de Entrevista aos Fornecedores de Rações

Data (Dia/Mês/Ano):

Nome do Entrevistador/Facilitador:

Secretário/Anotador:

Nome:

Género:

Hora de início:

Hora de término:

INTRODUCTION

Introdução

Our names are _____ and _____ (Facilitator and Note Taker). Thank you very much for taking the time to participate in this discussion. We are representing the organization IMPAQ International, a research company based in the United States. We are here as researchers/evaluators for the Mozambique Expansion of Rural Cattle and Dairy Opportunities (called MERCADO) project. Our goal is to capture a wide range of viewpoints that can usefully inform Venture37 (Land O'Lakes) dairy activities in Mozambique.

The interview will be approximately an hour. Please feel free to be open and honest with us while sharing your opinion. Everything you say here today will be kept confidential between us and the evaluation team. We are conducting this discussion as an independent entity and are not associated with any government body. Your names or other identifying information will not be used in any of our reports. You are free to choose whether to take part in this interview. If at any point after we begin you wish to leave, you may do so. If you choose not to take part, you will not be negatively affected in any way. You can also choose to refuse to answer any questions you are uncomfortable with or do not want to answer.

In case of any further questions after you have participated, you can always contact data collection team members like me, or other members of our team. I am happy to share our contact information.

Additionally, IMPAQ International and Incomati are taking significant measures to reduce exposure to COVID-19 for the field team and the respondents; however, as in any community or public setting, an exposure risk remains. It is important that these matters are recognized prior to your participation.

By participating in this interview, you acknowledge the COVID-19 safety protocols and are aware of the risks for collecting data during this pandemic.

Os nossos nomes são: _____ e _____ (Facilitador e secretário). Muito obrigado por poder participar nesta discussão/conversa. Estamos a representar a organização IMPAQ Internacional, uma empresa de pesquisa, sediada nos Estados Unidos. Estamos aqui como pesquisadores/avaliadores para o projecto Expansão do Gado e das Oportunidades Leiteiras em Moçambique (MERCADO). O nosso objectivo é captar uma vasta gama de pontos de vista que possam uma forma útil informar as actividades da Venture37 (Land O'Lakes) no sector leiteiro em Moçambique.

A nossa entrevista terá a duração aproximada de 1 hora. Por favor, sinta-se à vontade e partilhe a sua opinião connosco de forma aberta e honesta. Tudo o que disser aqui hoje será mantido confidencial entre nós e a equipa de avaliação. Estamos a conduzir esta discussão como uma entidade independente e não estamos associados a nenhum órgão do governo. Os seus nomes ou outras informações de identificação não serão utilizados em nenhum dos nossos relatórios. É livre de escolher se participa ou não nesta discussão. Se, a qualquer momento após o início da nossa actividade, desejar sair, poderá fazê-lo. Se optar por não participar, não será de forma alguma afectado negativamente. Pode também optar por recusar-se a responder a qualquer das perguntas se não se sentir confortável ou não querer responder.

Se surgirem outras perguntas depois deste encontro, pode a qualquer altura contactar os membros da equipa de recolha de dados como eu, ou outros membros da nossa equipa. Tenho o prazer de partilhar consigo os nossos contactos.

Além disso, o IMPAQ International e a Incomati estão a tomar medidas significativas para reduzir a exposição ao COVID-19 para a equipe de campo e os entrevistados; no entanto, como em qualquer comunidade ou ambiente público, o risco de exposição permanece. É importante que reconheça estes aspectos antes de sua participação. Ao participar desta entrevista, você reconhece os protocolos de segurança COVID-19 e está ciente dos riscos da recolha de dados durante esta pandemia.

Obtained written informed consent [Read Consent Form] Obteve consentimento informado por escrito [Leia o formulário de consentimento]

a) Did you ask if the participant had any questions? ☐ Yes ☐ No

Perguntou se o participante tinha alguma questão? ☐ Sim ☐ Não

b) Did participant agree to participate? ☐ Yes ☐ No → STOP

O participante concordou em participar? ☐ Sim ☐ Não → Pare

c) Did you give participant copy of consent? ☐ Yes ☐ No

Entregou uma cópia do consentimento ao participante? ☐ Sim ☐ Não

1. What is your title? Please describe your business. How long have you been involved with the MERCADO project and in what capacity?

Qual é o seu título? Por favor, descreva o seu negócio. Há quanto tempo está envolvido com o projecto MERCADO e em que capacidade?

2. Please describe the overall feed products you sell.

Por favor, descreva todas as rações que vende.

a. What feed products do you sell to dairy farmers?

Que rações vende aos produtores de leite?

- b. What feed products do you sell to cooperatives and processors?
Que rações vende às cooperativas e processadores?
 - c. What percentage of your products are sold to dairy farmers, cooperatives and processors?
Que percentagem dos seus produtos são vendidos aos produtores de leite, cooperativas e processadores?
 - d. On average how much feed do you sell to an average dairy farmer per month?
Em média, qual é a quantidade de rações que vende a um produtor de leite médio por mês?
 - e. Where do you sell products? (e.g. in shops? Delivering to customers? Another method?)
Onde vende os seus produtos? (por exemplo, em lojas? Entrega aos clientes? Outro método?)
3. Please describe your typical overall customers.
Por favor, descreva os seus clientes típicos em geral.
- a. Please describe your typical dairy feed customers (e.g. cooperatives, farmers).
Por favor, descreva os seus clientes habituais de rações para o gado leiteiro (por exemplo, cooperativas, produtores).
 - b. What is the typical herd size of dairy farmers who are more likely to purchase feed? (e.g. 1-3 cows (small), 4-10 cows (medium), more than 10 cows (large))
Qual é o tamanho típico do rebanho dos produtores de leite que têm maior probabilidade de comprar ração? (por exemplo, 1-3 vacas (pequeno), 4-10 vacas (médio), mais de 10 vacas (grande)).
4. How do you reach your customers?
Como é que chega aos seus clientes?
- a. How easy is it for dairy farmers to get your products? How do they get it? (e.g. sold directly to farmers, through cooperatives, etc.)
Quão fácil é para os produtores de leite obter os seus produtos? Como é que eles os obtêm? (por exemplo, vendidos directamente aos produtores, através de cooperativas, etc.)
 - b. In your experience is it more effective to interact with individual farmers or cooperatives? Why?
Na sua experiência, é mais eficaz interagir com produtores individuais ou cooperativas? Porquê?
5. How did you engage with the MERCADO project? Please describe. *Probe for successes and challenges.*
Como se envolveu com o projecto MERCADO? Por favor descreva. Procure saber sobre sucessos e desafios.
- a. Did the MERCADO project facilitate connections for you with cooperatives, farmers, or other customers for dairy cattle feed? In your opinion, were these activities carried out in a timely manner?
O projecto MERCADO facilitou-lhe as ligações com cooperativas, produtores, ou outros clientes de rações do gado leiteiro? Na sua opinião, estas actividades foram realizadas em tempo útil?
 - b. Will you continue providing products after the MERCADO project ends?

Irá continuar a fornecer produtos após o fim do projecto MERCADO?

- c. Were you aware of the Dairy Innovation Fund (DIF)? If so, did you apply for a grant? If so, what did you apply for and what did you receive? In your opinion, were these activities carried out in a timely manner?
Tinha conhecimento do Fundo de Inovação Leiteira (DIF)? Se sim, candidatou-se a uma subvenção? Se sim, a que se candidatou e o que recebeu? Na sua opinião, estas actividades foram levadas a cabo em tempo útil?
- d. Would you have liked to receive any additional support from the MERCADO project?
Gostaria de ter recebido algum apoio adicional do projecto MERCADO?
6. How do you source your feed? (e.g. Do you grow the feed? Do you procure the feed from somewhere else?) Have you faced any challenges in growing or procuring feed to sell? Please explain.
Como é que obtém a sua ração? (p. ex. produz a ração? Obtém a ração de outro local?) Enfrentou algum desafio na produção ou na aquisição de ração para vender? Por favor, explique.
7. Have you seen changes in sales of feed for dairy cattle since the MERCADO project started 4 years ago? Please describe if increase, decrease, or no change.
Tem visto mudanças nas vendas de rações para gado leiteiro desde o início do projecto MERCADO, há 4 anos? Por favor, descreva se houve aumento, diminuição ou nenhuma mudança.
- a. Do sales for dairy cattle feed change by season? If yes, how?
As vendas de rações para o gado leiteiro mudam de acordo com a época do ano? Se sim, como?
8. What challenges, if any, do you face in selling feed for dairy cattle? *Probe for different types of challenges: marketing, financial, personnel, etc.*
Que desafios, caso existam, enfrenta na venda de rações para o gado leiteiro? Procure saber sobre os diferentes tipos de desafios: *marketing, financeiro, pessoal, etc.*
- a. Are there challenges specific to selling directly to farmers?
Existem desafios específicos para a venda directa aos produtores?
- b. Are there challenges specific to selling to cooperatives?
Existem desafios específicos para a venda às cooperativas?
- c. Are there barriers to growing your business in Mozambique?
Existem barreiras ao crescimento do seu negócio em Moçambique?
9. Are there any challenges specifically faced by women in the dairy value chain?
Existem desafios especificamente enfrentados pelas mulheres na cadeia-de-valor do leite?
- a. How do you think MERCADO could have addressed these challenges?
Como pensa que MERCADO poderia ter respondido a estes desafios?
10. *(If not mentioned earlier)* What effect did Cyclone Idai have on your business?
(Se não foi mencionado anteriormente) Que efeito teve o Ciclone Idai no seu negócio?
11. *(If not mentioned earlier)* What effect did COVID-19 have on your business?
(Se não foi mencionado anteriormente) Que efeito teve a COVID-19 no seu negócio?

12. *(If not mentioned earlier)* What effect did low intensity civil war have on your business?
(Se não foi mencionado anteriormente) Que efeito tiveram as hostilidades militares no seu negócio?
13. *(If not mentioned earlier)* What effect did Cyclone Eloise have on your business?
(Se não mencionado anteriormente) Que efeito o Ciclone Eloise teve nos seus negócios?
14. Is there anything that I did not ask about that you would like to share with me, or do you have any additional thoughts about what we have discussed today?
Há alguma coisa que eu não tenha perguntado, que gostaria de partilhar comigo, ou tem alguma ideia adicional sobre o que conversamos hoje?

Thank you for your time and comments.

Obrigado pelo seu tempo e pelos seus comentários.