

Quarterly Report #3

Zimbabwe Livestock Development Program

January – March 2016



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FROM THE AMERICAN PEOPLE



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ACRONYMS

ABS-TCM	African Breeders Services Total Cattle Management Ltd.
AI	Artificial Insemination
CBO	Community-based Organization
CIRIS	Client Impact and Results Information System
DLPD	Division of Livestock Production and Development
DVS	Department of Veterinary Services
EMMP	Environmental Mitigation and Monitoring Plan
FAO	Food and Agriculture Organization
FTF	Feed the Future
FY	Fiscal Year
GAPs	Good Agricultural Practice(s)
GAHPs	Good Animal Husbandry Practice(s)
MCC	Milk Collection Center
M&E	Monitoring and Evaluation
MFI	Microfinance Institution
MOU	Memorandum of Understanding
NGO	Nongovernmental Organization
NRM	Natural Resource Management
PERSUAP	Pesticide Evaluation Report and Safer Use Action Plan
PPE	Personal Protective Equipment
RDC	Rural District Council
SNV	Netherlands Development Organization
SSC	Small-Scale Commercial
SUAP	Safe Use Action Plan
USAID	United States Agency for International Development
USG	US Government
WASH	Water, Sanitation, and Hygiene

I. EXECUTIVE SUMMARY

This third quarterly report for the Feed the Future Zimbabwe Livestock Development program, funded by USAID/Zimbabwe under contract AID-613-C-15-00001 and implemented by Fintrac Inc., presents activity achievements, results on performance indicators, and anecdotal information from beneficiaries over the period of January to March 2016.

In these three months, Zimbabwe has received erratic and poorly distributed rains well below normal levels for this time. The drought has affected the quality of rangelands and crops in addition to limiting the supply of drinking water in all program areas, particularly Chipinge and some parts of Shurugwi and Kwekwe districts. As a result, most areas reported cattle deaths.

Despite these challenges, the program expanded its activities to 650 new beneficiary households, continued to service existing beneficiaries, and rolled out climate mitigation strategies in all its geographical focus areas. Program activities concentrated on training and technical assistance to beneficiaries through the centers of excellence; identifying alternative marketing systems for beef farmers in Chipinge and Lupane; and capacity building work with partners. In addition, the program completed and analyzed data from the first round of the annual survey.

Individualized technical assistance from the Feed the Future Zimbabwe Livestock Development program addresses humanitarian and food security needs to not only increase smallholder farmers' incomes, but also generate income for others in the community through employment in the agricultural sector. Program interventions raise production and productivity; add value to products; expand market access; and increase the availability of credit and finance at all levels in the beef and dairy value chains. In addition, participating households receive training on good nutrition and hygiene practices. The program promotes social inclusion of women and youth, and environmental stewardship, across all initiatives.

To commercialize small-scale beef and dairy farmers, maximize outreach, and ensure sustainability, the program carries out interventions in partnership with non-governmental organizations (NGOs), financial organizations, private sector traders, processors, input suppliers, and technical service providers. Thus, in this quarter negotiations continued with identified potential partners for cost-sharing partnerships.

Specifically during the period under review:

- The program conducted and completed the first round of the Fiscal Year (FY) 2016 annual survey of 320 beneficiary households from all the program areas. After data collection and analysis, results have been established for 14 of the 28 program performance indicators.
- A total of 1,596 individual beneficiaries, 48 percent women, have benefited from program interventions since inception in June 2015. Interventions include training and technical assistance in beef and dairy production and linkages with buyers of beef and dairy products, and credit and input suppliers. In addition, farmers have received technical assistance and training on water, sanitation, and hygiene (WASH), nutrition, gender, and environmental issues.
- Capacity building activities continued with Feed the Future Zimbabwe Livestock's sister program, Feed the Future Zimbabwe Crop Development program and the program's implementing organization, LEAD. One-on-one technical assistance was offered on gender, M&E, communication, branding and marking guidelines to program staff as well as continuing the review of LEAD's operating manuals. Capacity Building also expanded this quarter to include work with milk collection centers (MCCs). Capacity needs assessments have been completed for three cooperating milk collection centers (MCCs) and a Memorandum of Understanding (MOU) to begin implementation has been signed with Umzingwane Dairy MCC.

- The program signed an MOU with Econet Wireless to provide technical support in developing Econet's mobile messaging service to disseminate timely short tips on market, technical, and financial information for smallholder beef and dairy farmers.
- A letter of intent was signed with the Netherlands Development Organization (SNV) to jointly explore viable renewable energy technologies (solar or biogas) that can be implemented at farm level and along the milk value chain for pumping, heating, lighting, and refrigeration. Engagement meetings were held to inform the SNV renewable energy technical team on the specific technical needs of the smallholder livestock farmer. SNV team will present the possible interventions in the coming quarter.
- A draft Nutrition and WASH strategy was completed and submitted to USAID/Zimbabwe for review. The strategy will guide implementation of nutrition and hygiene issues.
- The subcontract with African Breeders Services-Total Cattle Management (ABS-TCM) was approved and signed to commence the development of breeding and health protocols for beef and dairy cows.
- Local auctions in addition to direct sales off the rangeland to abattoirs and middlemen, accounted for most of the beef animal sales in program focus areas during the quarter. The foot and mouth disease continued to limit sales of cattle for direct slaughter only, which affected marketing in Chipinge and Shurugwi districts as most of the cattle on offer remained unsold because they did not meet the carcass condition requirements for slaughter.
- Only five farmers from Irisvale (Umzingwane) sold pen-fattened cattle worth \$2,610 during the period. Low beef prices made it unviable to pen fatten during the review period.
- Direct marketing to abattoirs for cattle off the rangeland was successfully piloted with 29 farmers in Chipinge district. A live cattle auction, run by Cattle Company Sales, for 100 smallholder farmer cattle was successfully launched in Lupane district.
- This quarter, smallholder farmers working with the program delivered 94,956 liters of milk valued at \$52,492 to the three partner milk MCCs as well as processors Dendairy and Kershelmar, compared to 83,928 liters worth \$43,494 in the last quarter. Deliveries increased because of improved food availability from the grass flush, more cows coming into production, and new farmers delivering to the MCCs. A total of 42 smallholder beneficiaries delivered milk to the MCCs compared to 33 in the previous quarter. A total of 318 dairy farmers (228 males and 90 females) received training and technical assistance on animal nutrition and health, milk reception and processing, milk handling and quality control, marketing, and good animal husbandry practices (GAHPs). Forty-two percent of the dairy farmers trained were from Gokwe South. The training and technical assistance aims to increase milk yields from the baseline figure of 2.6l liters per day per cow to above 12 liters per day per cow; normalize the lactation periods to about 300 days; and set the calving intervals to between 12 and 13 months.
- A total of 595 beef farmers, 43 percent women, participated in beef training sessions across the nine beef focus areas during the period under review. Popular topics included pen fattening, GAHPs (such as supplementary feeding), and beef marketing.
- Training and technical assistance on fodder production continued on some of the 86 demonstration plots not yet devastated by the drought to showcase good agricultural practices (GAPs) for wider adoption by surrounding farmers. Forages on display included forage sorghum, velvet bean, *moringa*, *leucaena*, and mulberry. However, in all focus areas, low rainfall still severely affected fodder establishment.
- An outbreak of Blackleg disease was reported in Gokwe South and Umzingwane districts. Seven deaths due to this disease were recorded in Ward 19 of Gokwe South. To address this problem, the program collaborated with the Division of Livestock Production and Development

(DLPD) and the Department of Veterinary Services (DVS) in carrying out cattle vaccinations and providing the requisite technical assistance to contain the spread of the disease.

- A total of 42 beneficiary households hosting the program's centers of excellence were assessed for compliance with the Environmental Monitoring and Mitigation Plan (EMMP). The results identified several issues, including: inadequate livestock handling facilities; land degradation; overgrazing; poor grazing management practices; poor and outdated records for dosing and vaccinations; inadequate protection of water sources; poor control of flies; and non-use of trained service providers during chemical applications. Mitigation measures such as construction of drainage ditches to channel water away from water sources, promotion of no-cost fly trap technology, and training of farmers in use of PPE and handling of chemicals were initiated to rectify the observed shortcomings.
- The draft Gender Strategy submitted to USAID/Zimbabwe was approved in time to commemorate International Women's Day in March. The program dedicated March to honor women in livestock production by documenting testimonials from female livestock farmers.
- The program linked Kumboedza Dairy Association, a dairy group of ten farmers in Chipinge (30 percent women), to collectively secure a loan worth \$4,310 from Quest Financial Services. The loan will be used to purchase a diesel chaff cutter to process crop stover to feed their livestock.
- A draft Nutrition and WASH Strategy was submitted for discussion and approval to USAID/Zimbabwe. Activities to promote hygiene included hand washing, construction of toilets, digging of rubbish pits, and water treatment.
- The Feed the Future Zimbabwe Livestock Development program continued to mainstream women and youths in all its activities as well as integrating nutrition and WASH demonstrations into trainings for all beneficiaries. The program deliberately provided gender –appropriate trainings in terms of timing, location, mobilization, focusing on micro enterprise activities that involve women and youths (small stock and gardens) and deliberately targeting women to host the centers of excellence.

Going forward, planned activities include: finalizing the nutrition strategy; finalizing the breeding and health protocols for both beef and dairy; feed formulations for beef and dairy using local resources; providing training and technical assistance to beneficiaries at the program's old and new centers of excellence; implementing the first phase of the artificial insemination (AI) breeding program; and continuing to explore marketing opportunities for beef and dairy farmers.

2. INTRODUCTION

2.1 BACKGROUND

Feed the Future Zimbabwe Livestock Development program began June 23, 2015 and runs through June 22, 2020. The program works to reduce rural poverty and improve household food security among smallholder producers through increased production, productivity, and market linkages in the beef and dairy cattle sectors. Activities to commercialize small-scale beef and dairy farmers on communal and non-contested land include the following:

- Raising efficiencies in beef and dairy production systems
- Facilitating access to inputs, finance, and credit
- Linking producers to local, national, regional, and international buyers
- Training farmers to adopt good agricultural, business, and animal husbandry practices
- Training farmers to adopt good nutrition and hygiene practices
- Strengthening the capacity of local organizations to implement agricultural development programs

The program is building demand for smallholder-produced beef and dairy products by focusing on quality, continuity of supply, and cost-competitiveness. Feed the Future Zimbabwe Livestock Development program also collaborates with the Feed the Future Zimbabwe Crop Development program and other donor programs to provide specialized technical support to produce nutritious crops that sustainably increase the availability of these foods for beneficiary households. Fintrac is implementing Feed the Future Zimbabwe Livestock Development program with subcontractor ABS-TCM in addition to assistance from local private companies, NGOs, the Department of Livestock and Veterinary Services, and other government departments involved in the beef and dairy value chains.

2.2 GOALS & OBJECTIVES

Primarily, Feed the Future Zimbabwe Livestock Development program seeks to reduce poverty and increase food security among 3,000 beef and 2,000 dairy smallholder farmers in Natural Regions III, IV, and V. The program focuses on increasing production, productivity, and market linkages of beef and dairy farmers to improve their food security, incomes, and nutrition status. The program will accomplish this goal through the achievement of three intermediate results:

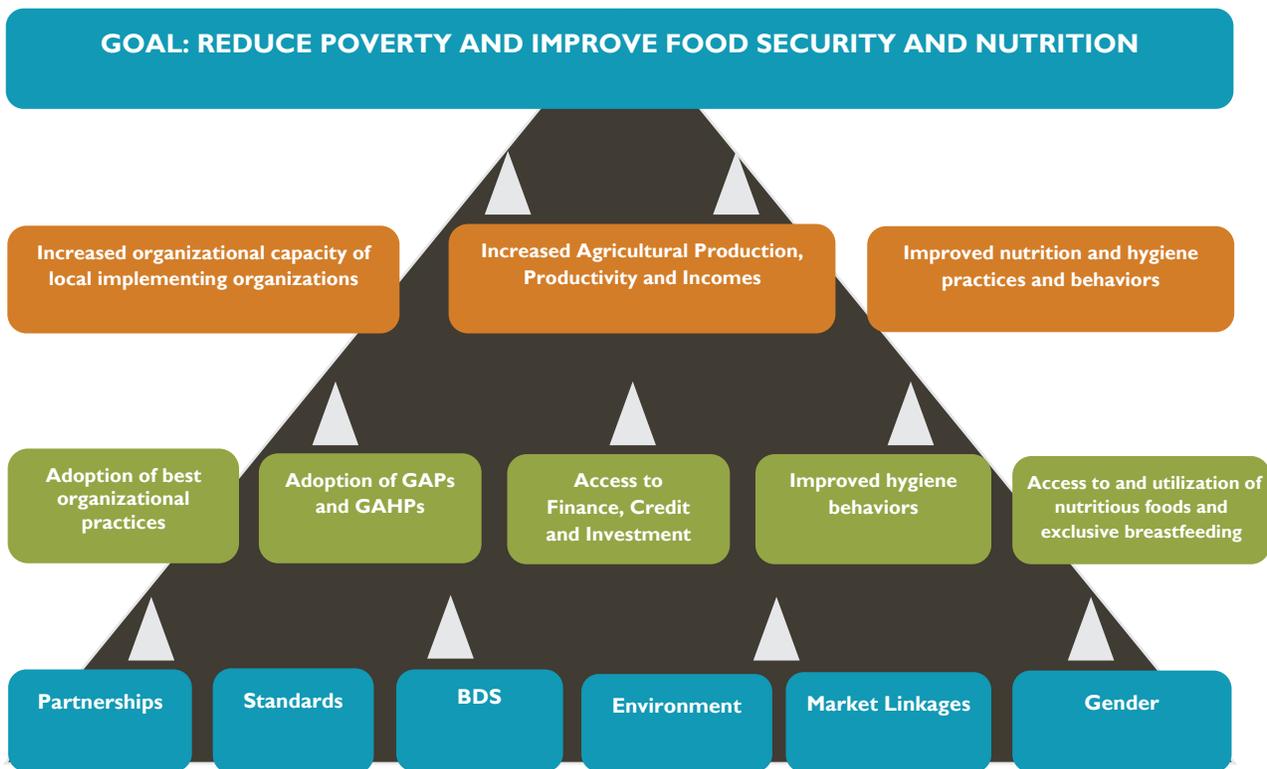
1. **Increased agricultural production and productivity** of targeted beef and dairy smallholder farmers through greater market linkages; access to appropriate credit and finance; adoption of GAPs and technologies; and investment.
2. **Improved hygiene and nutrition-related behaviors** through training on good household nutrition, hygiene, and sanitation practices, and exclusive breastfeeding.
3. **Increased capacity of local organizations** to implement USAID and agricultural development programs via building capacity and transferring skills; sharing best practices; and attracting new investments in private sector organizations. These efforts will entail partnering with the Feed the Future Zimbabwe Crop Development program.

The Feed the Future Zimbabwe Livestock Development program concentrates on profitable beef and dairy production and income generation through appropriate and sustainable interventions that improve the livelihoods of vulnerable livestock owners. These activities will move rural families from subsistence to commercial farming and increase their net worth through investment in cattle and other on-farm productivity-enhancing assets.

2.3 IMPLEMENTATION APPROACH

The results framework below (Figure 1) summarizes the Feed the Future Zimbabwe Livestock Development program's implementation approach. Interventions will sustainably raise production, productivity, and incomes from smallholder beef and dairy systems; improve hygiene practices and behaviors; increase the availability and utilization of nutritious foods; expand market access and availability of credit and finance across value chains; add value to beef and dairy products; and boost agricultural investment as well as adoption of best organizational practices by local implementing organizations.

Figure 1: Results Framework Summary



To maximize outreach and ensure sustainability, the Feed the Future Zimbabwe Livestock Development program is partnering with commercial companies, NGOs, and relevant government departments to carry out interventions. Collaboration with relevant government departments have enabled easy entry into target areas and led to sharing of technical information and training platforms. In addition these departments form part of the program's exit strategy.

Developing commercial partnerships through a national network of agribusinesses strengthens farmers' access to markets with fair prices; provides working capital and finance at realistic rates; supplies inputs efficiently; and provides extension and training to growers as an embedded cost. The partnerships focus on establishing service provision options at market rates. During its first half of the year, the program has been engaged in the following:

- Identifying high-potential and viable beef and dairy agribusiness hubs in targeted regions.
- Ensuring competitiveness of smallholder beef and dairy sectors by improving productivity and efficiency.

- Facilitating and fostering linkages with formal and informal buyers to increase demand for smallholder beef and dairy products. Activities also seek to improve quality, increase quantity, and assure reliability of supply and logistics.
- Creating more sustainable markets and harnessing new private investment in smallholder beef and dairy by supporting innovative business models in the formal and informal sectors.
- Bringing more market players to engage livestock farmers in identified agribusiness hubs.
- Expanding the availability of inputs for beef and dairy farmers throughout identified agribusiness hubs by creating commercial partnerships with input suppliers and introducing low- to no-cost interventions that improve productivity, animal health, and nutrition.
- Increasing access to finance for all value chain actors to facilitate investment.
- Improving overall household health and nutrition through improved dietary diversity (e.g. by incorporating livestock products) and trainings on household nutrition and proper sanitation.
- Building the capacity of local businesses, producer groups, and other community institutions in partnership with the Feed the Future Zimbabwe Crop Development program.
- Providing demand-driven training and technical assistance to address site-specific challenges.
- Identifying opportunities for program beneficiaries to generate high returns with minimal resources.

2.4 TARGET GEOGRAPHIC ZONES

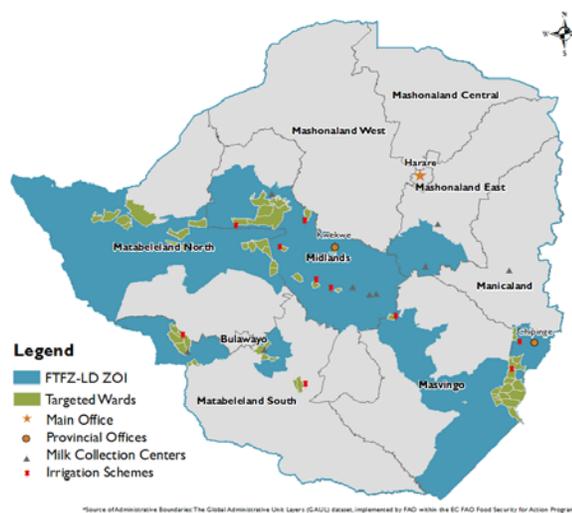
Districts and preliminary wards for beef and dairy interventions were selected based on the number of households engaged in beef and dairy activities; potential for market development through private sector alliances; proximity to development food assistance programs and other donor activities; baseline income and herd size requirements; potential for a high number of female-headed households; and logistical and operational cost.

Program interventions have targeted irrigation schemes, established beef and dairy hubs, and existing MCCs in Natural Regions III, IV, and V. The program will capitalize on the current interactions of farmers, buyers, input suppliers, and service providers around these hubs to strengthen linkages through technical assistance.

During the quarter under review, the team implemented program activities at sites in Hwange, Lupane, Nkayi, (Matabeleland North) Umzingwane, (Matabeleland South) Gokwe South, Kwekwe, Shurugwi, Chirumhanzu (Midlands), and Chipinge (Manicaland) districts and met with farmers, local leadership, other donor programs, and private sector players. Combined with its ongoing economic and market analysis, the team continued to refine its interventions for each target site. Selection of the most promising sites for beef and dairy will continue in the next quarter, and will be guided by the program's overarching commercialization approach:

- Market potential – accessibility, size, growth potential, buyer interest
- Rapid expected returns on labor and capital

Figure 2: Geographic Focus Areas



- Capital requirements and access to credit and finance
- Availability of infrastructure and facilities
- Availability of capable commercial partners
- Overall competitiveness in product cost and quality – including analysis of grower knowledge and climatic and agronomic factors

3. ACTIVITIES

Interventions in the quarter under review included conducting and completing the first round of the annual survey to collect data on performance indicators from 320 sampled households in program areas. Technical assistance and training intensified around the established 86 farmer-run (32 female and 54 male) centers of excellence. These covered trainings on GAHPs, fodder planning, harvesting, and conservation, cattle marketing and grading, cattle breeding, and animal health as a means to increase herd production and productivity. Additionally, marketing assistance, group development, and identification of technical partners continued.

Dry weather conditions and intermittent rains in all program areas characterized the reporting period. Table 3.1 below summarizes the cumulative rainfall in focus areas up to the end of March 2016. The low rainfall in all districts affected fodder establishment, which was the main planned activity for the quarter. Twenty –two identified centers of excellence aborted the process because of inadequate rain. Most of the rainfed fodder crops that were established succumbed to the dry spell, except for velvet beans, which has reasonably recovered. The rains received in late February 2016 and the greater part of March 2016 improved the rangeland condition in all program areas except for Shurugwi and Chipinge, where the drought situation remains dire.

Table 3.1: Total Rainfall and Fodder Demo Plot Status in Program Areas, Oct 2015 - March 2016

Area	Rainfall from Oct to Dec 2015	Rainfall Received by Month (mm)			Cumulative to Date (mm)	Fodder Crop Status	Comment
		Jan.	Feb.	Mar.			
Shurugwi	136	33	110	165	444	Super graze sorghum failed to reach expected potential in wards 12 & 13. Ward 7 replanted and crop is now tasseling. Two beef/dairy demos affected by drought.	Ward 12 harvested 7 tons of silage to date. Ward 13 harvested 3 tons of maize; ensiling in progress, to be finished by end of April
Kwekwe Ward 6	98	17	35	53	203	Sweet sorghum, sunn hemp, and velvet bean crops are ready for harvesting and some have already been harvested.	Fair to good. This quarter began with a dry spell but more rains in February and March improved crops.
Umzingwane	57	48	86	97	288	Velvet beans (Flowering stage) Demo Plots in Irisvale and Claremont did well and expect to be harvested in the next quarter. Sorghum at maturing stage.	Nothing has been harvested as yet. At maturity stage and to make silage in the next quarter.
Gokwe wards 13,15,16, and 19	129	35	58	62	284	All crops, sweet sorghum, sunn hemp, and velvet bean are growing well and	Fair to good. This quarter began with a dry spell but later on more rains in

Table 3.1: Total Rainfall and Fodder Demo Plot Status in Program Areas, Oct 2015 - March 2016

Area	Rainfall from Oct to Dec 2015	Rainfall Received by Month (mm)			Cumulative to Date (mm)	Fodder Crop Status	Comment
		Jan.	Feb.	Mar.			
						nearing harvesting.	February and March improved crops.
Chirumhanzu	122	63	28	168	381	No fodder demos established.	Late entry to the area.
Chibuwe	58	139	17	87	301	Only irrigated fodder crops at Musikavanhu B2 performed in the district. Super graze sorghum and sunn hemp are currently being harvested, dried, and preserved for dry season feeding. Rains received in January were not effective as they fell in two major storms.	Farmers in Musikavanhu B2 have also gathered substantial amounts of maize stover from the irrigation scheme and are preserving it for dry season feeding.
Chisumbanje /Checheche	86	193	26	57	362	All rain fed crops succumbed to drought. Rains received in January were not effective as they fell in two major storms.	No crop residue or grass in areas that rely solely on rain for crop production.
Nkayi	173	62	194	161	590	4 demo plots in Ward 5; 2 plots in Ward 18; 1 plot in Ward 17; 2 plots in Ward 21 and 1 demo plot in Ward 20 are in good to excellent condition. Crops planted are sunn hemp, velvet bean, and super graze sorghum.	Harvesting and baling is already in progress as most have reached peak of vegetative growth.
Lupane	101	101	116	115	433	5 demo plots in Ward 4, 3 plots in Ward 8 and 1 demo in Ward 14 are in good to excellent condition. Crops planted are velvet bean and sorghum.	Harvesting and baling is already in progress as most have reached peak of vegetative growth.
Hwange	N/A	58	127	10	195	2 demo plots in Ward 17 were established. These are also in poor to fair condition because of poor rains and sandy soil.	Although vegetative growth is not very good, enough seed will be harvested for the next season.

Source: Met Department and FTFZ-LD

The following sections describe the Feed the Future Zimbabwe Livestock Development program activities briefly in nine categories that reflect our technical approach and objectives:

- Beneficiaries – number, gender balance, geographical spread
- Sales and incomes – amount of new money earned by beneficiaries
- Productivity – direct interventions in beef and dairy
- Market access – research, analysis, planning, and new business development
- Finance and credit – microcredit support for smallholder beef and dairy farmers
- Nutrition and hygiene activities
- Gender – cross-cutting activities to support the inclusion of women and youth
- Environment
- Organizational capacity development

3.1 BENEFICIARIES & GEOGRAPHICAL COVERAGE

3.1.1 Annual Survey

The program conducted the first phase of its annual survey this quarter to collect data on performance indicators. Altogether, 320 households were selected from a pool of beneficiaries using stratified random sampling with proportionate allocation approach, in which the strata were value chain and geographical location (Table 3.1.1). Data was collected through structured interviews with a near real time mobile data collection system. The Monitoring and Evaluation (M&E) team led program staff to implement the survey in all eight districts where the program is implementing activities and has registered beneficiaries. This first round of the FY2016 annual survey has established results for 14 of 28 performance indicators (see Annex 2 and the Feed the Future Monitoring System reporting template submitted with this report). Complete survey results will be available at the end of FY2016 after taking into account results from the second phase, which will be conducted between July and August 2016.

Table 3.1.1: Geographical Distribution of Households Interviewed, First Round of the FY2016 Annual Survey

	District	Natural Region	Female	Male	Total	% of Total
Communal Beef Farmers	Chipinge	V	55	76	131	
	Gokwe South	III	21	24	45	
	Kwekwe	III	1	9	10	
	Lupane	IV	1	3	4	
	Nkayi	IV	10	12	22	
	Shurugwi	III	16	21	37	
	Umzingwane	IV	1	2	3	
Total			105	147	252	79%
Communal Dairy Farmers	Chipinge	V	1	3	4	
	Chirumanzu	III	2	5	7	
	Gokwe South	III	8	21	29	
	Shurugwi	III	3	0	3	
	Umzingwane	IV	1	2	3	
Total			19	37	56	17%
SSC Dairy Farmers	Chirumanzu	III	2	1	3	
	Gokwe South	III	6	7	13	
	Umzingwane	IV	2	0	2	
		Total	5	7	12	4%

Table 3.1.1: Geographical Distribution of Households Interviewed, First Round of the FY2016 Annual Survey

	District	Natural Region	Female	Male	Total	% of Total
		Grand Total	129	191	320	320

3.1.2 Beneficiaries

A total of 1,400 rural households, or 1,596 individuals, have benefited from program interventions since program inception (Table 3.1.2.1). Of these households, 31 percent (432) are engaged in dairy farming and 10 percent (45) of the dairy households are small-scale commercial (SSC) farmers. In this quarter specifically, 650 households, or 741 farmers, received assistance from the program for the first time, of which 72 percent were communal beef farmers. Program assistance ranged from training and technical assistance in beef and dairy production to linkages with buyers of beef and dairy products, and credit and input suppliers. In addition, farmers received technical assistance and training on WASH, nutrition, gender, business development, and environmental issues.

Table 3.1.2.1: Geographical Distribution of Households, July - December 2015

Value Chain	District	Natural Region	Q1 + Q2 (July - Dec)			Q3 (Jan - Mar)			Cumulative		
			Female	Male	Total	Female	Male	Total	Female	Male	Total
Beef	Chipinge	V	105	134	239	112	84	196	246	189	435
	Chirumhanzu		0	0	0	2	3	5	2	3	5
	Gokwe South	III	71	56	127	2	11	13	58	82	140
	Hwange	IV	2	2	4	2	11	13	4	13	17
	Kwekwe	III	6	15	21	17	11	28	32	17	49
	Lupane	IV	4	15	19	2	1	3	6	16	22
	Nkayi	IV	14	18	32	33	44	77	51	58	109
	Shurugwi	III	11	22	33	69	64	133	91	75	166
Umzingwane	IV	10	15	25	0	0	0	15	10	25	
Sub-total			223	277	500	239	229	468	505	463	968
Communal Dairy	Chipinge	V	4	10	14	2	3	5	6	13	19
	Chirumhanzu	III	16	18	34	29	26	55	45	44	89
	Gokwe South	III	68	76	144	19	48	67	87	124	211
	Kwekwe	III	0	0	0	0	1	1	0	1	1
	Shurugwi	III	2	16	18	9	11	20	11	27	38
	Umzingwane	IV	5	7	12	6	11	17	11	18	29
Sub-total			95	127	222	100	65	165	160	227	387
SSC Dairy	Chirumhanzu	III	0	0	0	1	4	5	1	4	5
	Gokwe South	III	2	18	20	2	5	7	4	23	27
	Nkayi	IV	0	0	0	1	1	2	1	1	2
	Shurugwi	III	0	1	1	1	1	2	1	2	3
	Umzingwane	IV	4	3	7	0	1	1	4	4	8
Sub-total			6	22	28	5	12	17	11	34	45
Grand Total			324	426	750	344	306	650	676	724	1,400

Source: CIRIS

The program has already surpassed its overall FY2016 target of 1,250 beneficiary households by 12 percent mainly due to the beef component (Table 3.1.2.2). The high number of beef farmers is

attributable to the success of the feedlot system and the market linkages established (direct marketing off the rangeland and auctions), especially given the El Niño-induced drought and the ongoing herd realignments for breed improvement. The program has promoted and perfected pen fattening and direct marketing to abattoirs. These activities showcased how to unlock the value of the beef herds. In addition, the program introduced low-cost maintenance feeding, which salvaged hundreds of herds facing poverty deaths. Farmers are now keen on technologies availed by the program as some of the initiatives have helped lessen the severity of the drought on their herds in addition to increasing their incomes.

Table 3.1.2.2: Beneficiary Households Variance

Value Chain	FY16 Target	Achievement to Date	Variance
Beef	750	968	+240 (+29%)
Dairy	500	432	-68 (-14%)
Total	1,250	1,400	+150 (+12%)

Source: CIRIS

The program remains optimistic about achieving its dairy target of 500 households, despite currently being 14 percent below target. The program has earmarked Chirumhanzu as a dairy hub. Further, the program deployed a permanent field extension, behavior change and communications officer to the area in March to spearhead the identification of beneficiaries and provide regular technical assistance and training.

A total of 948 farmers attended training sessions or received one-on-one technical assistance from program field staff during the period under review (Table 3.1.2.3). Women constituted 41 percent. At least 200 farmers trained in the quarter had received assistance from the program in previous quarters. One dairy farmer, Christopher Chinembiri, received a loan with program assistance for fencing off his pasture land. The program linked 1,607 beneficiaries with buyers of beef and dairy produce this quarter.

Table 3.1.2.3: Program Interventions, January - March 2016

Activities	Beef Farmers			Dairy Farmers			Combined Unique Farmers		
	Females	Males	Total	Females	Males	Total	Females	Males	Total
Trainings and TA	295	358	653	95	200	295	390	558	948
Farmers receiving credit	0	0	0	0	1	1	0	1	1
Farmers linked to buyers*	N/A	N/A	1,546	16	45	61			1,607

*Sex disaggregates for beef farmers linked to markets not available

Source: CIRIS & FTZ-LD

3.2 SALES AND INCOME

Meaningful and sustainable commercialization of smallholder farmers occurs when markets are available and farmers can develop the confidence to transact and make profitable sales and incomes. The program has continued to focus on expanding market access for beef and dairy products from smallholder farmers by facilitating value chain relationships between private sector players and farmers. Interventions in this quarter included:

- Facilitating linkages between beef farmers in Gokwe South, Kwekwe, Nkayi, Lupane, and Chipinge with buyers and abattoirs (Montana Carswell Meats, Heads and Hooves, Koala Park, Sabie Meats, and CC Sales). These buyers bought a total of 148 cattle from 106 beneficiaries with a total value of \$59,171 off the veld from the program beneficiaries in Chipinge and Lupane ,

- Exploring possibilities of partnering with small- to medium-sized milk processors to absorb output from Chirumhanzu and Shurugwi. Engagement meetings were held with Competitive Brand Shapers (CBS) a milk processor based in Harare and Adrian Scheepers a large-scale dairy commercial farmer based in Chirumhanzu. The processors (DZL, Dendairy and CBS) are willing to buy milk from the smallholder farmers. However, the low production volumes and lack of cold chains remain the greatest challenge. The program will continue to explore other models, particularly models that bring the processor closer to the farmers.
- Facilitating resumption of cattle auction sales in Lupane district; via a Livestock Indaba, which led to a successful inaugural sale in March 2016 which injected over \$40,000 into the local economy(see text box 3.2.2)
- Initiating assessments and discussions with MCCs to improve viability by building capacity. Shurugwi and Umzingwane MCCs were assessed and recommendations for capacity building were tabled. The MCCs showed their willingness to be trained.

3.2.1 Milk and Dairy Products

Farmers delivered 94,956 liters of milk valued at \$52,492 to three MCCs and two processors (Dendairy and Kershelmar) collaborating with the program, compared to 83,928 liters worth \$43,494 in the previous quarter. A new dairy producer group, Sengwa, in Gokwe district sold 1,975 liters of milk worth \$1,975, mainly from its beef herd, within the local community. The program is encouraging milk production from beef herds to not only meet household nutritional needs, but also provide a potential source of income as surpluses could be sold to the local market (see Text Box 3.2.1).

The improvement in the rangeland cover because of the rains in mid-February and March resulted in an increase in milk production in all focus areas. In Umzingwane, farmers faced a stock of 761 liters of unsold cultured milk at the MCC, and as such, the program facilitated and provided technical assistance and training to the marketing committee. Farmers also learned about alternative marketing options for raw milk such as selling direct to processors in Bulawayo which may be more profitable than processing volumes lower than the breakeven volume of 3,381 liters per month. However, many farmers continue to see the MCC as the end game, and therefore the program is targeting capacity building exercises in budgeting, preparation of records of accounts, cash flow analysis and governance for the MCC to address this issue.

Text Box 3.2.1: Beef-dairy farming to boost milk production for Gokwe MCC

The Sengwa dairy group is comprised of 87 farmers (32 females and 55 males) who are within 5-20 kilometers of the Gokwe MCC. Members learned the potential for milking their beef cows, and are now milking on average 19 beef cows with an average yield of 2 liters per cow per day. Marketing is still in its infancy as most farmers use the milk for home consumption; however, a few are selling milk locally as fresh and sour milk. The program is training farmers on recordkeeping and budgeting and to farm as a family business. These farmers will be linked to more sustainable markets, Gokwe MCC, and/or Dendairy as their volumes increase; moreover, ABS-TCM will aid the program to utilize AI to transform these farmers' herds into quality and viable dairy herds. Experienced dairy farmers who are already seasoned members of the Gokwe MCC have been seconded to the group to provide mentorship.

Table 3.2.1.1: Milk Sales from Focus Areas

	Jul – Sep 2015		Oct – Dec 2015		Jan-Mar 2016		Buyer
	Liters	\$	Liters	\$	Liters	\$	
i) Raw milk delivered							
Gokwe MCC	29,669	\$17,208	30,598	\$16,829	39,399	\$19,700	Local, Dendairy
Sengwa group	-	-	-	-	1,975	\$1,975	Local
Shurugwi MCC	617	\$358	592	\$296	1,285	\$643	Local
Umzingwane	55,552	\$29,540	52,738	\$26,369	52,297	\$30,174	Dendairy

Table 3.2.1.1: Milk Sales from Focus Areas

	Jul – Sep 2015		Oct – Dec 2015		Jan-Mar 2016		Buyer
	Liters	\$	Liters	\$	Liters	\$	
							/Kershelmar/ Umzingwane MCC
Total	85,838	\$47,106	83,928	\$43,494	94,956	\$52,492	
ii) Raw milk sales							
Gokwe MCC	1,680	\$1,616	7,522	\$4,137	15,930	\$9,204	Local , Dendairy
Sengwa group	-	-	-	-	593	\$593	Local (schools and vending)
Shurugwi MCC	617	\$617	-	-	18	\$18	Local
Umzingwane	52,874	\$28,294	50,291	\$30,174	48,164	\$27,677	Local/Kershelmar/ Dendairy
Total	55,171	\$30,527	57,813	\$34,311	64,705	\$37,492	
iii) Sour milk sales							
Gokwe MCC	6,627	\$13,254	5,976.50	\$11,774	6,068	\$9,974	Spar Supermarket, Empress Mine, Nkayi
Sengwa group	-	-	-	-	540	\$1,620	Local
Shurugwi MCC	-	-	592	\$592	-	-	
Umzingwane	2,562	\$1,281	2,447	\$1,224	67	67	Local
Totals	9,189	\$14,535	9,016	\$13,590	6,675	\$11,661	
iv) Cultured milk							
Gokwe MCC	11,571	\$11,571	7,411	\$8,745	5,710	\$5,999	Local, Spar Supermarket, Empress Mine, Nkayi
Sengwa group	-	-	-	-	-	-	
Shurugwi MCC	-	-	-	-	857	\$857	
Umzingwane	-	-	-	-	3,461	\$3,461	Local, Gwanda, Filabusi, and Bulawayo
Totals	11,571	\$11,571	7,411	\$8,745	10,028	\$10,317	
v) Yogurt							
Gokwe MCC	165	\$549	21	\$67	17	\$60	Local, Supermarket, Empress Mine, Nkayi
Totals	165	\$549	21	\$67	17	\$60	
vi) Whey							
Gokwe MCC	10,291	\$2,058	9,668	\$1,934	4,719	\$938	Local, Empress Mine, Nkayi
Totals	10,291	\$2,058	9,668	\$1,934	4,719	\$938	

Source: FTFZ-LD and MCCs

In the non-traditional dairy areas of Chipinge, Nkayi, and Chirumhanzu, milk production was mainly from beef animals for home consumption; farmers sell some surplus raw or sour milk through the informal market or farm gate sales. One farmer from Komayanga in Ward 27 of Nkayi district is milking three beef cows and producing 4 liters per day for sale in the local market and for home consumption. During the quarter under review, the program trained 318 dairy farmers on good feeding practices for the milking cows and other GAHPs (Table 3.3.2.3).

3.2.2 Beef Product Sales

Local auctions and direct sales off the rangeland to abattoirs and middlemen accounted for most of the beef animal sales in program focus areas during the quarter. The foot and mouth disease restrictions limiting sales of cattle for direct slaughter only also affected marketing as most of the livestock on offer

did not meet the carcass condition requirements for slaughter and remained unsold. The program trained 74 beef farmers on marketing, focusing on an improved understanding of market trends and correct determination of the value of animals when selling. These trainings aim to provide farmers with the tools to exercise planned selling when prices are most lucrative to increase income as well as judiciously cull off the unproductive stocks. In preparation for direct marketing, farmers were also taught to grade live animals so that those in poor condition would be retained until there was some improvement in their body condition. The program is training farmers to utilize body condition scoring and grading as a management tool in beef buying and selling.

In Nkayi, 335 cattle were sold through auctions organized by the Rural District Council (RDC) compared to 271 in the previous quarter (Table 3.2.2.1). Gross return per animal declined by 16 percent mainly as a result of generally low beef prices during this period, depressed prices due to panic sales from the ongoing drought, and low-quality cattle given the poor rangeland conditions.

Table 3.2.2.1: Cattle Sales from Auctions in Nkayi, July 2015 - March 2016

Month	Cattle Sold	Farmers	Total Sales (\$)	Gross Return per Animal
July	300	285	\$142,500	\$475
August	217	198	\$104,160	\$480
September	214	200	\$102,292	\$478
Total	731	683	\$348,952	\$477
October	111	96	\$55,241	\$498
November	110	91	\$50,525	\$459
December	50	40	\$22,600	\$452
Total	271	227	\$128,366	\$474
January	38	30	13,640	\$455
February	172	134	66,100	\$384
March	125	110	50,705	\$406
Total	335	274	\$130,445	\$400
Total (Q1 Q2& Q3)	1,337		\$607,763	\$457

Source: Nkayi RDC & Inala Auctions

February recorded a high level of sales as a result of panic selling because at that time rainfall levels were minimal and the rangeland had severely deteriorated. Therefore, farmers embarked on culling and destocking their herds to avoid losses from the ongoing drought.

In Lupane district, farmers continued to shy away from the RDC-organized auctions mainly because of lack of competition as few buyers participated. Moreover, the auctions occur erratically and are thus poorly patronized by buyers who find them unreliable and uncompetitive. As a result, farmers have placed more faith in middlemen than organized council auction sales. To address the issue, the program, in conjunction with the DLPD and Kusile RDC, convened a one-day livestock marketing *indaba* (discussion forum) in February 2016 with all relevant stakeholders (see *Text Box 3.2.2*) to provide a platform for players in the livestock value chain to interact and map a livestock marketing plan for Lupane district. With this forum, the program hoped to regain the farmers' confidence and stimulate participation in formal sales.

Consequently, as a result of this *indaba*, live animal auctions resumed. CC Sales organized the inaugural sale on March 14, 2016, and thereafter sales will be conducted on a monthly basis from the site. Plans are also underway for a similar monthly auction in the foot and mouth red zone (from which cattle may only be moved for direct slaughter) at Tshongokwe sale pens.

Table 3.2.2.2 below shows recorded sales for the district in this quarter. Per the information presented, auction sales seem to have positively influenced the number of animals sold and the gross return per animal.

Table 3.2.2.2: Recorded Cattle Sales in Lupane District, January - March 2016

Month	No. of Cattle Sold	No. of Farmers Selling	Modal Price per Kg Live Weight (\$)	Total Income (\$)
February RDC Auctions	95	80	\$1.05	\$44,870
March RDC Auctions	120	95	\$1.10	\$61,700
March CC Sales Auction	100	77	\$1.15	\$42,700

Source: Kusile RDC, DLPD, DVS, and CC Sales

In Hwange district, livestock auctions have not been held for more than ten years, and hence farmers remain dependent on middlemen who often have no financial capacity to buy large numbers of cattle at competitive prices. Given the disorganization of the markets and their distance from the nearest large market in Bulawayo, formal buyers are hesitant to enter this area. Therefore, the Feed the Future Zimbabwe Livestock Development program has initiated discussions with private players in the livestock industry to persuade the companies to set up an abattoir in Hwange district.

In Chipinge district, public auctions were suspended due to the district's susceptibility to foot and mouth disease. Abattoirs and meat processors use middlemen here as their buying agents for cattle. The middlemen meet all the costs of delivering the cattle to the abattoirs (Sabie Meats, Koala Park, and Montana Carswell Meats) and take this into account when negotiating prices with farmers.

Table 3.2.2.3 shows the recorded cattle sales from the program's operational wards, including those from non-program beneficiaries.

Table: 3.2.2.3: Recorded Cattle Sales in Program Operational Wards, Chipinge District January - March 2016

Ward	Number of Cattle Sold	Average Weight (kg)	Average Value per Animal	Total Value	Comments
3 and 4	30	340	\$220	\$6,600	Different buyers were operating in the area

Text Box 3.2.2: Livestock stakeholder forum creates smallholder marketing opportunity

The Feed the Future Zimbabwe Livestock Development program hosted a one-day livestock *indaba* (discussion forum) in Lupane, Matabeleland North with 48 relevant stakeholders who included input suppliers (Veterinary Distributors, National Foods, and Agricura); abattoirs and meat processors (Grills Abattoirs, Heads and Hooves, butcheries); auctioneers (CC Sales); members of farmers unions; government stakeholders (DLPD, DVS); Lupane State University-Animal Science Department representatives; representatives from microfinance institutions (Quest Financial Services and Inclusive Financial Services); the chief executive of the RDC; councilors from Kusile RDC; the District Administrator; local members of parliament; farmers; and other NGO staff operating in the district. The *indaba* provided a platform for players in the livestock value chain to interact and map a marketing plan for Lupane district to regain the farmers' confidence and stimulate participation in formal sales.

The *indaba* revealed that in 2015 council auctions only accounted for the sale of 238 animals, while 4,605 were sold through informal channels. Seeing opportunity in the Lupane district livestock markets, CC Sales expressed an interest in establishing a sales point, and Kusile RDC responded by allocating them sale pens in a clean zone.

CC Sales conducted its inaugural sale at Mloyeni sale pens in Ward 28. The sale attracted buyers including Mvutcha Abattoirs, Mbokodo Abattoirs, middlemen, and local butcheries. From 117 yarded animals, 100 were sold at an average price of \$427, with the highest sold animal netting \$700. The average price for commercial grade and steers was \$1.15 per kilogram while the manufacturing grade sold for an average of \$0.98 per kilogram. The auction injected \$42,700 into Lupane district. "We are very happy with the success of this sale," said the chief executive officer of Kusile RDC, Christopher Chuma. CC Sales paid a 1.5 percent tax to the RDC. The next sale will occur April 11, 2016.

16 and 20	60	340	\$220	\$13,200	Different buyers were operating in the area
21 and 22	108	260	\$150	\$16,200	Different buyers were operating in the area
24	75	260	\$150	\$11,250	Different buyers were operating in the area
25	43	260	\$200	\$8,600	The Chipinge Livestock Development Trust made a loss when it sold the 43 cattle bought from Ward 25
Total / Average	316	283	\$177	\$55,850	

Source: DLPD & DVS

To improve gross returns for beneficiaries and capitalize on improved cattle body conditions, the program initiated direct marketing of cattle off the rangeland to abattoirs and meat processors in Chiredzi and Masvingo during the quarter under review. This arrangement eliminates the middlemen and their negative impact on income. Even though beef prices slumped after Christmas, farmers were still impressed with the incomes they received as they were almost double those offered by local dealers. The average price paid by middlemen was \$177 per animal (Table 3.2.2.3) compared to \$343 per animal (Table 3.2.2.4) from direct marketing to abattoirs.

Table 3.2.2.4: Direct Cattle Sales to Abattoirs Off the Rangeland, Chipinge District

Ward	Feedlot	Number of Farmers			Number of Cattle	Grades			Value of Sales	Average Value/Animal
		M	F	Total		Man (J)	Econ (X)	Comm (B)		
16	Kondo	11	4	15	21	1	18	2	\$7,664	\$365
22	Manzvire	4	3	7	14	1	12	1	\$3,779	\$270
24	Mabhiza	7	0	7	13	0	9	4	\$5,028	\$387
	Totals	22	7	29	48	2	39	7	\$16,471	\$343

Source: FTFZ-LD

Thinkmore Sithole is one of the 29 farmers who were linked by the program to Koala Park and Montana Carswell Meats in Masvingo. Thinkmore was paid \$2,086 for his four oxen through direct selling to Montana Carswell Meats against the potential of \$1,000 from the local buyers (See Annex 1 page A2).

Initially, farmers feared that they would be swindled since the cattle had to be transported out of the district and payment would only be received after slaughter. However, results obtained from the 48 cattle sold by 29 farmers this quarter have allayed these fears, and more farmers are eager to participate in direct marketing.

In the Midlands, panic selling because of the drought characterized all program areas. Most of the animals sold were in poor body condition (below 3.0) and therefore fetched low prices on the market (Table 3.2.2.5). Furthermore, seasonally low prices for beef markets in the summer have compounded the problem.

Table 3.2.2.5: Recorded Cattle Sales, Midlands

District	Jan.	Feb.	Mar.	Total Cattle Sold	# of Farmers Who Sold	Total Sales Value	Average Prices	Buyers
Kwekwe	10	13	29	52	52	\$13,500	\$260	Montana

								Carswell Meats, middlemen, butcheries, other farmers.
Gokwe South	23	62	73	158	154	\$34,245	\$217	Montana Carswell Meats, middlemen, butcheries, other farmers.
Umzingwane	29	81	64	174	165	\$47,000	\$270	Head & Hooves, Mbokodo, CC Sales Auction
Total	62	156	166	384	371	\$94,745	\$247	

3.3 PRODUCTIVITY

Productivity-enhancing activities focused on training and technical assistance to lead farmers to maintain their established fodder demonstration plots; improved marketing; supplementary feeding and feedlot management; facilitated direct lending from microfinance institutions (MFIs); and GAHPs such as herd health, animal nutrition, herd rationalization, and breeding. Activities occurred at centers of excellence in Lupane, Nkayi, Hwange, Gokwe South, Chirumhanzu, Umzingwane, and Chipinge districts.

The following sections summarize interventions undertaken to increase productivity in the beef and dairy sectors during the quarter.

3.3.1 Beef

Maintenance feeding: Program personnel engaged with relevant stakeholders in meetings, trainings, and strategy sessions to mitigate the effect of the drought on smallholder livestock producers. Several drought mitigation strategies were identified, including: culling non-productive and old cattle; utilizing relief grazing areas; cutting and preserving hay; collecting nutritious tree pods from the rangeland; using survival meal; and conserving and judiciously using crop residues and fodder production.

In Lupane the agreed joint strategy focused on encouraging farmers to destock by culling non-productive animals and those which could easily succumb to drought, such as old cows. Key messages focused on using sales to buy stock feed to supplement the foundation herd and increasing goat ownership since these animals tolerate drought better than cattle. In addition, to engage more buyers, authority was granted to CC Sales to conduct public cattle auctions monthly in the green zone area from March 14 onward. Similar auctions will occur in the red zone starting April 2016.¹

The program also facilitated linkages to livestock buyers and stock feed suppliers. Heads and Hooves agreed to provide stock feed in exchange for the culled livestock. However, farmers seemed reluctant to cull their livestock and preferred other drought mitigation methods, such as relief grazing that occurs mostly in Forestry Commission areas with predatory wild animals.

Taking animals to these alternative grazing areas was also part of the drought mitigation trainings held in Hwange district. The program trained 44 farmers (17 females) on coping strategies. Areas such as Mabale (Ward 17) and Kamativi (Ward 11) have relief grazing areas, but farmers cited water and predatory animals as challenges to this method.

In all program areas, farmers were trained on the use of survival meal and especially to target the productive classes of the herd (breeding females and bulls). Although farmers were made aware that

¹ A live cattle auction has since been scheduled for May 30 2016 at Tshongokwe Cattle sales pens for livestock farmers in the red zone.

failure to sell surplus animals for stock feed can lead to the loss of the entire herd, they remained reluctant to cull some of their animals to purchase this feed. Instead, production of drought-tolerant fodder plants, such as cacti, was better received as an option. A number of farmers mentioned that they had seen animals, especially goats, feeding on cactus but never imagined it could be used for cattle feed.

Pen fattening: Across focus areas, pen fattening activities slowed during the quarter under review as market prices remained low for the activity to be viable. Pen fattening activities will resume in the next quarter as beef prices are expected to start firming up. Instead, the program has been encouraging farmers to cull cows and bulls that have performed badly under pen fattening with sales directly off the rangeland to abattoirs.

In preparation for the feedlot season, which will commence in May, the program engaged farmers in repairing and upgrading pens in all beef focus areas. In Hwange district, the program is introducing pen fattening for the first time among communal farmers. In Ward 4 (Nemananga area), a group of 15 farmers (11 women and 4 men) is constructing feedlot pens to begin pen fattening in July. Construction of the feedlot pens is already about 60 percent complete.

Five farmers in the Irisvale area of Umzingwane pen fed six animals in early January 2016 to take advantage of prices that had held firm after the pre-festive period peaks; they earned a total of \$2,610. The program facilitated credit linkages with Quest Financial Services for a loan of \$525 for feed and veterinary drugs. Further, the program linked farmers to Heads and Hooves for sale of their pen fed animals. With some of the proceeds, the farmers purchased 800 kilograms of survival meal under a subsidized Food and Agriculture Organization scheme in the area. Generally, program beneficiaries have invested their incomes from pen feeding activities to improve their livelihoods in various ways (see *Text Box 3.3.1*).

Beef breeding: The program continues to urge farmers to manage breeding through selecting quality bulls and selling off unproductive beasts, using the income to purchase quality breeding females. During the quarter, the program has been working with farmers disposing of animals through auctions and direct sales off the rangeland to use the income realized for improved breeds.

Working together with ABS-TCM, which came on board during the quarter, the program is developing breeding protocols to ensure that farmers are adhering to four factors that influence the success of any breeding system: cow fertility; semen quality or bull fertility (breeding soundness); inseminator or bull efficiency; and heat detection efficiency.

Text Box 3.3.1: Smallholder farmers fund livestock activities through feedlot income

Beneficiary farmers in the Midlands used feedlot proceeds worth \$16,012 to finance their livelihoods. Of this total value, 60 percent funded livestock-related activities, such as buying replacement heifers, purchasing steers for pen fattening, and procuring stock feed; the remainder 40 percent supported other social activities. Seven members from feedlot groups in wards 2 and 23 in Shurugwi, Midlands invested \$3,650 of their feedlot income in seven good quality heifers. Bernard Machanga from Gwanza feedlot earned \$960 after selling one pen-fed animal and used the income to procure two heifers at \$350 each to increase his herd to four animals. In Ward 7, Rosemary Phebeni earned \$1,073 and used the income to sink a borehole at her homestead after program trainings on the importance of water requirements in cattle management. Phebeni now has a reliable source of water to adequately supply her livestock needs.

At Shurugwi Dairy Cooperative, four members have registered for procurement of dairy heifers using income received from pen fattening activities in the last quarter.

The program is actively promoting financing of livestock-related activities as it realigns herd compositions for increased production, productivity and incomes.

Since farmers' technical capacities and ability to pay can vary, several protocols will be developed with different costs and management strategies to reach the desired pregnancy rates. Some of the strategies include developing local AI competencies, improving cow heat alert systems for timely insemination, and training farmers on reproductive management and GAHPs. The beef breeding protocol aims to increase calving rate to more than 70 percent and produce fast-growing calves that attain body weights for reproduction or selling at relatively young ages (under 30 months).

During the quarter, 88 farmers received training on animal breeding. The trainings were done to take advantage of the beef breeding window (January-March) when the body condition score, among other factors, is ideal for high conception due to the availability of natural grazing, particularly in areas that received late rains. Breeding subjects covered included selection of quality bulls and breeding females; conception rates; reproductive diseases (contagious abortion and *vibriosis*); calving intervals; AI; cow identification for AI using the body condition score; designation of isolation pens for cows being bred; and proper feeding for breeding.

Farmers were advised to stockpile enough feed in the form of hay from fodder production, crop by-products (e.g. cereal stover, groundnut stover, and excess forage harvested from the rangeland such as *Acacia* and *Piliostigma* pods), and cut grass. Fenced off fields after the crop harvesting are being designated as isolation pens for the cows being bred, as crop residues offer additional feed.

In Shurugwi, 10 farmers practiced controlled breeding by servicing their cows and heifers utilizing larger, better bulls selected locally in a bid to infuse better genetics into their herds and improve carcass quality in terms of size.

During a planning session at Chirumhanzu, one farmer agreed to construct breeding pens where his cows and heifers are housed away from roaming bulls so he can better control the breeding of his stock.

Table 3.3.1.1 below shows current average herd composition among targeted Feed the Future Zimbabwe Livestock Development program beneficiaries from the first round of the annual survey conducted during the quarter compared to baseline and desired end target in Year 5.²

Table 3.3.1.1: Progress of Beef herd Composition Among Program Beneficiaries

Herd Composition	Baseline Average	First Round FY2016	Target Year 5*
Breeding Cows	2.0	1.60	4.00
Breeding Heifers	0.70	0.70	1.00
Bulls	0.10	0.20	0.10
Culls	0.00	0.00	1.00
Calves	0.20	0.80	4.00
Steers 1.5 yrs	0.00	0.20	2.00
Heifers 1.5 yrs	0.00	0.20	2.00
Steers 2.5 yrs	0.50	0.20	2.00
Steers 3.5 yrs (oxen)	0.80	0.90	2.00
Total Herd Size	4.30	4.80	18.10

* Target herd composition based on 100 breeding females, for 3.5 years production (80% weaning, 4% bulling, 20% culling, bulling heifers at 2 years, surplus heifers disposed at 1.5 years)

Training: During the quarter, the program trained 495 farmers in various topics on beef production³ compared to 656 farmers in the previous quarter, a 25 percent drop (Table 3.3.1.2).⁴ The drop was mainly due to limited training activities during March as field staff was conducting the first round of the

² Composition calculation based on target in Feed the Future Zimbabwe Livestock Development contract, page 16.

³ This number includes dairy farmers with beef herds who were trained in beef production.

⁴ Only farmers with the program's target number of cattle (10 and below) were recorded. Farmer stock record cards were used to identify farmers qualifying as program beneficiaries.

annual survey. The program recruited a resident field officer for Chirumanzu toward the end of the quarter to help in implementing regular trainings and technical assistance.

Table 3.3.1.2: Unique Beneficiaries Receiving Beef Training by District, FY2016

District	Sept - Dec 2015			Jan - Mar 2016		
	Female	Male	Total	Female	Male	Total
Chipinge	123	158	281	66	115	181
Chirumhanzu	14	15	29	0	1	1
Gokwe South	95	76	171	9	10	19
Hwange	2	2	4	3	14	17
Kwekwe	7	17	24	12	23	35
Lupane	5	17	22	3	2	5
Nkayi	16	21	37	43	38	81
Shurugwi	15	32	47	73	70	143
Umzingwane	17	24	41	6	7	13
Grand Total	294	362	656	215	280	495

GAHPs, fodder production, and cattle and meat grading were among the most popular trainings with farmers during the quarter (Table 3.3.1.3).

Table 3.3.1.3: Beef Training by Subject, FY2016

Training Subject	Sept - Dec 2015			Jan - Mar 2016		
	Female	Male	Total	Female	Male	Total
Animal Breeding	18	30	48	41	47	88
Animal Health	35	56	91	18	31	49
Cattle and Meat Grading	68	60	128	37	81	118
Fodder Production	77	86	163	64	91	155
Husbandry Practices	180	240	420	179	198	377
Marketing	72	111	183	20	54	74
Pen Fattening	240	311	551	20	25	45
Other*				45	36	81

*Other trainings include drought mitigation, agroforestry, handling facilities
Source: CIRIS

GAHPs covered included dipping, castration, branding, ear tagging for identification, and management of livestock. In Nkayi, 33 cattle and 16 goats were castrated during a demonstration in wards 27 and 5.

The program is promoting ear-tagging for ease of identification, recordkeeping, cattle management, and theft prevention. Ear tagging minimizes the number of animals lost and sold as strays by the local authorities. In Chipinge, all farmers who sold their cattle off the rangeland to abattoirs have agreed to use ear tags on their cattle to facilitate carcass identification and cash distribution after slaughter. A total of 57 beef cattle were ear tagged during the quarter. In Umzingwane, two farmers hosting centers of excellence have tagged 20 cattle. In Lupane, five beneficiaries (two males and three females) around one of the centers of excellence in Ward 8 received practical training on ear tagging as a livestock identification method. The host farmer, Arthur Ncube, bought ear tags and allowed members of the group to take turns tagging his eight animals so they can have a better feel for the process.

In preparation for direct marketing, farmers were trained on grading live animals as a way of empowering them to make decisions on which animals to sell, when, and what to keep, as well as how to manage their price expectations from buyers.

The program is training farmers to utilize body condition scoring, animal age, and overall grading as a management tool in beef buying and selling. Petros Kafera, a young beef farmer and cattle trader from

Gokwe South, Midlands, has improved his business' viability and profitability after receiving body condition scoring and cattle grading skills training. Kafera has since sold 40 animals to Montana Carswell Meats in Gokwe. In February 2016, he sold seven animals of commercial grade for \$2,563. Kafera now targets oxen for sale to the abattoir as they are more profitable than cows.

Animal health: In conjunction with ABS-TCM, the program is developing animal health protocols that recognize cattle health (beef and dairy) is constrained by vector-borne diseases, reproductive diseases, and, depending on the area, wildlife/livestock interface diseases. These constraints are compounded by the following factors:

- Inconsistent, irregular dipping at government dip tanks
- Lack of knowledge about important GAHPs
- Unaffordable and poor to no access to animal health services
- Low economies of scale
- Inadequate public sector resources to implement animal health control programs
- Proximity of farmers to wildlife conservancies

The proposed animal health protocol addresses these factors largely through farmer-controlled actions and market-led provision of animal health services and interventions. Appropriate protocols for different focus areas will be developed. The expected outcomes include decreased disease prevalence, reduction of annual mortality to under 5 percent, and improved cattle performance, such as weight gains, bulling, conception, and weaning rates. During the quarter, 49 beneficiaries received training on various subjects covering animal health and disease prevention.

An outbreak of Blackleg disease led to seven recorded cattle deaths in Ward 19 of Gokwe South during the reporting period. This incident spurred the program to collaborate with the DLPD and DVS to provide technical assistance on vaccinations and proper vaccine handling to 10 beneficiary beef farmers, who jointly bought 100 milliliters of the Blackleg vaccine for \$12 to vaccinate their 17 head of cattle.

In Irisvale and Claremont in Umzingwane the program provided technical assistance and linkage to an input supplier for the joint procurement and administration of 150 doses of the 3-in-1 Vaccine (anthrax, botulism, and blackleg) by 10 beneficiary households for their 150 head of cattle.

The Feed the Future Zimbabwe Livestock Development program is further investigating a previously unreported species of blood-sucking cattle fly that is invading lower Chipinge. With assistance from the private sector, the pest was positively identified as a louse fly (*Hippobosca variegata*). These flies irritate cattle as a number of them feed on a single animal at a given time. The fly only leaves its host to lay eggs. The program is still pursuing more information and possible control measures.

Fodder production: In all beef focus areas the program promoted fodder production through demonstration plots on the fields of lead farmers. Fodder crops displayed included velvet bean, sunn hemp, sweet sorghum, cactus, and mulberry tree. Program personnel provide regular training and technical assistance on good agricultural and animal



Photo by Fintrac

One of the thriving fodder demo plots in Ward 5 of Nkayi district.

husbandry practices to lead farmers who own these plots. The intention is to create model beef production centers for learning and replication, and to serve as training centers for aspiring beef farmers from the surrounding community.

Each demonstration plot was designed to produce enough fodder to feed a calculated number of cattle for at least 120 days. Poverty deaths normally occur from September to December in most areas. The size of fodder demonstration plots therefore varied from 0.1-0.5 hectares according to the number of cattle to be fed by the host farmers. The emphasis was on saving productive animals, such as breeding females.

In Nkayi, 10 out of the 15 established demonstration plots have managed to produce a reasonable crop, while the other five plots were written off due to adverse weather conditions. The main fodder crop planted was velvet bean. The 10 successful plots are in wards 5, 17, and 18 where rains were reasonable and farmers had established their crops in December. One such farmer is Cleophas Moyo from ward 17, who established 0.2 hectares of velvet bean and expects to harvest 900 kilograms of velvet bean hay to supplement his herd of 12 cattle during the lean period.

In Lupane, 10 beef lead farmers in wards 4, 8, and 14 successfully established their fodder demonstration plots. The farmers are expecting 4.5-5 tons per hectare of velvet bean hay. Some of the mulberry and cactus nurseries have already been transplanted into the field.

In Hwange, wards 11 and 17 were selected for pilot fodder demonstration plots. Nine farmers (five from ward 11 and four from ward 17) bought velvet bean seed for their fodder demo plots. However, only two farmers in ward 17 managed to plant a combined total of 1 hectare as the rest failed due to inadequate moisture because of the drought. However, even though the potential yield will be down by around 45 percent, it will still produce sufficient seed for next season.

In Chipinge, rainfed fodder crops established on a total of 5 hectares at 10 centers of excellence have all been wiped out by the drought. Farmers had established forage sorghum, velvet bean, and sunn hemp for cattle supplementary feeding, but all crops failed. Therefore, the program has introduced spineless cactus at 10 centers of excellence. Cactus is a desert plant and therefore highly adapted to drought conditions. The performance of this plant at all the centers is quite satisfactory. The cactus has been successfully fed to beef cattle at a demonstration session in ward 16 where it accounted for 10 percent of a ration that included maize stover and molasses.

Nine farmers in Chipinge have planted forage trees such as *leucaena*, *moringa*, and mulberry. During the rainy season, these trees produce substantial amounts of foliage, which can be preserved and fed to cattle during the dry season to boost the nutritional status of rations. Besides being used as cattle fodder, mulberry and *moringa* can improve human dietary diversity.

Farmers are being advised to keep stocks of molasses and urea to use for treatment of poor quality cereal stover and grass hays from the rangeland. In Chipinge, six farmers bought 260 liters of molasses to treat chopped stover to enhance the palatability and digestibility of this cheap supplementary feed.

3.3.2 Dairy

Activities during the quarter under review focused on mobilizing more farmers for dairy production; linking new beneficiaries to sustainable and lucrative dairy markets; linking dairy farmers to input suppliers; providing training and technical assistance to new (182) and continuing (77) dairy producers on GAPs in fodder production; and dispensing GAHPs on practical feeding practices for dairy herds, herd health aspects, and good cattle management practices (dipping, castration, dehorning, vaccinations, dosing, paddocking, recordkeeping, and heifer and calf rearing). Dairy farmers in all focus areas were also trained on milk hygiene. The program discourages the use of live bulls as it encourages inbreeding and poses reproductive disease challenges.

Milk is a perishable product requiring efficient chilling facilities along the whole value chain. The majority of beneficiaries are not on the national electricity grid, so the program engaged SNV Netherlands to explore viable renewable energy solutions for chilling, heating, lighting, and pumping. The meetings informed the SNV renewable energy technical teams on the specific technical needs of the smallholder livestock farmer. The SNV team will present the possible interventions in the coming quarter and any possibilities of collaborations will be pursued.

Fodder production: Adequate feed is essential for milk production and disease prevention in beef and dairy herds, in addition to maintenance of adequate body condition for reproduction. Supplementary feeding allows farmers to fight poverty deaths and maintain animal body conditions at acceptable levels that enhance regular ovulation. Animals with poor body condition scores (below 3.0) are unlikely to come on heat and have longer calving intervals.

Despite the unfavorable weather in most dairy focus areas, farmers did manage to plant some fodder crops. Most of the fodder affected by the December 2015 to January 2016 dry spell recovered thanks to the rains received in late February 2016 that continued for the greater part of March. However, expected yields will be lower than originally anticipated by 25-40 percent. Fodder harvesting and preservation has been delayed by the prevailing drought.

In Gokwe, fodder production of yellow maize, velvet beans, sugar graze sorghum, and sunn hemp among dairy producers performed reasonably well. Hay cutting from the rangeland is in progress. Farmers are also preserving stover from cow pea, groundnut, sorghum, and maize to build their fodder reserves.

In Umzingwane, velvet bean and late-planted sweet sorghum are growing reasonably well. Dairy farmers in this area need to rely mainly on purchased feed to meet their requirements as the rangeland has not fully recovered. Plans are under way to source hay from as far as Shangani in Matabeleland North.

Meanwhile, the program is promoting the planting of highly nutritious fodder trees (mulberry and *leucaena leucocephala*). A total of 13 dairy farmers from Umzingwane, Shurugwi, and Gokwe received training and technical assistance on production of mulberry tree nurseries and have since established 284 mulberry cuttings; 14 *leucaena* plants have been planted to date in Umzingwane at one center of excellence. Additionally, the program is mobilizing farmers to cut available forage from alongside roads and in the rangeland to make hay and to purchase cotton mote and cotton hulls where available.

In Chirumhanzu, the program is working with eight beneficiaries from the old resettlement scheme to establish paddocks by fencing off a portion of their 5 hectare fields currently lying fallow. Six of the beneficiaries already have fenced field perimeters that could be adopted for a mobile dairy system.

GAHPs: In the third quarter, the program focused on technical assistance and training to equip farmers with basic skills in dairy husbandry. The following GAHPs and technologies were promoted through farmer-managed demonstrations:

- *Cattle vaccinations.* Technical training and assistance on Blackleg and vaccine handling was done after an outbreak of Blackleg in ward 16 of Gokwe South. Farmers vaccinated their cattle based on advice from the program. A total of seven dairy farmers jointly bought 100 milliliters of Blackleg vaccine for their herds and vaccinated 15 dairy cattle.
- *Dipping.* Many dairy farmers rely on communal dipping, which is often inadequate as chemicals are in short supply. The program trained farmers on on-farm tick control using knapsack sprayers. All centers of excellence have adopted this practice and farmers learned proper handling, spraying, storage, and disposal of the dipping chemicals.
- *Recordkeeping.* Farmers were trained on production records and daily cash records as tools to track productivity, income, and expenditure and hence profitability.

- *Paddocking.* Dairy farmers have been urged to fence off their land into paddocks so that cows can have adequate and unhindered access to grazing. Cattle prefer grazing in the early morning and evenings when ambient temperatures are low, but current practices, confine them to their pens at those times. Two dairy farmers in Shurugwi have already started work on this concept with star grass and Napier fodder pastures. Four dairy farmers in Gokwe who accessed loans in the previous quarter completed their paddocking. This quarter, 10 smallholder farmers established 28 paddocks on 10.7 hectares of land in Gokwe South and Chirumhanzu. Participating farmers were trained in paddock measurement and design as well as rangeland scoring for reinforcement and pasture planting.
- *Drought mitigation.* The poor rainfall season prompted the program to promote drought mitigation strategies that will ensure survival of farmers' herds and continuity of production. These strategies included harvesting failed maize crops to produce silage that offers a higher nutritional value compared to dry maize stover. Thirteen farmers in Shurugwi and seven in Chirumhanzu have adopted this strategy. Jailon Mudzengi is a farmer from ward 12 in Shurugwi who now has 7 tons of silage from a failed maize crop, which is enough to feed his one beef/dairy cow for 291 days. Farmers were also advised to sell off unproductive cows to buy feed for the rest of the herd. After receiving the training on drought mitigation strategies from the program, Thandiwe Mukundu from Umzingwane Ward 18 sold two of her cows off the rangeland for a total of \$950 and bought three tons of dairy meal for this value.
- *Heifer and calf rearing.* Technical training and assistance was given on calf rearing to both old and new dairy farmers after noting high calf mortality rates. The program designed a low-cost calf pen (2 meters wide by 3 meters long) that was adopted by a first-time dairy farmer from Sengwa Dairy Producer Group and another of Gokwe MCC. Prior to these pens, farmers were using open space tethering with limited grazing and irregular watering.
- *Milk quality and milk handling.* The quality of milk delivered to a processor has a direct relationship with the price that will be paid. Processors in Zimbabwe operate with a milk payment scheme and set price standards based on the quality of milk delivered. Technical training and assistance was given on clean milk production (milk quality) to ensure farmers get the maximum possible price for their milk. In Gokwe, Dendairy rejected 50 liters in December last year for being substandard and program training has now helped to improve milk quality. The MCC's milk is now grading at band A+ from band B. This has led to the processor paying a 15 percent quality premium in this quarter to the MCC, which delivered 14,922 liters of A+ grade fresh milk and was paid a premium quality bonus of \$1,260.97, making their total payment \$9,617.29. In Umzingwane, nine farmers were also trained in milk quality and hygiene. The MCC does not yet have a quality premium scheme but the local processor has reported that the quality of milk now being delivered by farmers has improved, resulting in a longer shelf life of their cultured milk.

Breeding: Dairy breeding protocols have been developed to follow the same breeding principles as for beef cows, and especially emphasizing fertility; semen quality or bull fertility; inseminator or bull efficiency; and heat detection efficiency. The breeding protocols aim to time breeding to ensure that at least two cows are milking per day at any time to produce 12 liters each.

From the baseline results, targeted dairy operating areas have limited dairy breeds. Fewer than 13 percent of the cattle in the herds are pure dairy breeds. The target of three quality dairy cows per beneficiary by 2020 will be achieved by:

- Rationalizing the current dairy herds after selling unproductive cattle, such as bulls, steers, and oxen, and utilizing the sales proceeds to source quality female dairy cows and heifers; this process has started in Irisvale, Shurugwi, and Chirumhanzu.

- Having a high proportion of productive classes of animals in the herd (milking cows, dry cows, and replacement heifers) through natural increases or off-farm purchase of productive females.
- Employing GAHPs that improve weaning and conception rates so as to realize the productive potential of the existing herds. The program is focusing on providing adequate feed for all productive classes of animals to ensure high growth rates and body condition scores.
- Ensuring herd health to reduce calf mortality and reproductive diseases for natural herd growth.
- Adopting artificial insemination or organized bull schemes run by farmers or service providers.

The Feed the Future Zimbabwe Livestock Development program has continued to collaborate with processors, MFIs, and the US African Development Foundation to leverage resources that will assist dairy beneficiaries to access high-quality cows. Encouragingly, the government has created funds under the Dairy Revitalization Committee to work with research stations (Matopos, Henderson, Makoholi, and Grasslands) and avail dairy heifers for purchase.

In preparation for the breeding season in the upcoming quarter the program has:

- Encouraged farmers to cull their bulls to take advantage of the AI services from ABS-TCM. Culling bulls is a rational exercise among the smallholder farmers as they have fewer than 25 cows in their herd.
- Encouraged farmers to set up paddocks as doing so ensures undesirable bulls do not mate with breeding cows. After receiving training on breeding, 10 farmers in Irisvale, Umzingwane have formed two groups and have already identified the area where they intend to construct paddocks for their dairy cattle.
- Trained farmers on AI basics. Mlanjeni Hlanganiso from Gokwe had his two dairy cows artificially inseminated with Jersey semen straws for \$10 by local Gokwe MCC inseminators after attending technical training and receiving assistance on breeding, improved breeds, and heat detection. Hlanganiso is looking forward to two dairy calves in December 2016. Lack of pure breeds had hurt Hlanganiso's dairy production as uncontrolled breeding with local beef bulls were polluting his dairy genetics and leading to genetic regression.
- Assisted farmers in setting breeding goals.

Table 3.3.2.1 below shows the current average dairy herd composition among targeted program beneficiaries from the first round of the annual survey compared to baseline and the desired Year 5 target of a minimum of three milking cows.⁵

Table 3.3.2.1: Progress of Dairy Herd Composition Among Program Beneficiaries

Herd Composition	Baseline Combined	First Round FY16 Combined	Baseline Communal Herd	First Round FY16 Communal	Baseline SSC Dairy Herd	First Round SSC	Target Year 5*
Cows in milk	2.82	3.45	1.70	2.28	5.22	6.58	3.00
Dry cows	0.05	0.07	0	0	0.17	0.25	1.00
Bulls	0.26	0.36	0.04	0.25	0.72	0.67	0.00
Heifers in calf	0	0.00	0	0.00	0	0.00	1.00
Heifers 12 to 27 months	1.43	0.73	0.66	0.56	3.08	1.17	2.00
Heifers 6 to 12 months	0	0.64	0	0.47	0	1.08	2.00
Calves	1.53	1.87	0.90	1.38	2.89	3.17	2.00
Steers 1.5 yrs	0.00	0.38	0.00	0.34	0.00	0.50	1.00

⁵ Contract document page 17: Each beneficiary household to own a minimum of three high quality milking cows with a minimum yield of 12 liters per day for 300-day lactation.

Steers 2.5 yrs	0.45	0.25	0.22	0.22	0.94	0.33	1.00
Steers 3.5 yrs (oxen)	0.92	1.66	0.69	1.50	1.42	2.08	1.00
Total herd size	7.46	9.41	4.21	7.00	14.44	15.83	14.00

* Target herd composition based on 3 milking cows, for 300-day lactation (80% weaning, 0% bulling, 20% culling, bulling heifers at 2 years, surplus heifers steers disposed at 1.5 years. 2 oxen required for draft power)

Over the past six months since baseline, the total dairy herd size has increased by 26 percent from 7.46 to 9.41, which is mainly attributed to a 66 percent increase in the communal dairy herd size as a result of program beneficiaries adopting recommendations to convert some beef animals to dairying. Good beef cows that calved were milked and a proportion of the milk was sold. Milk yield increased from 2.61 to 4.42 liters per cow per day. Despite the increase in the number of cows milked from 1.7 (baseline) to 2.28 (first round of the annual survey), productivity still remains low. Incorporating beef cows in the dairy herd is the program's initial approach toward commercialization and will expand the base on which AI will be introduced. The target is to increase cows in milk, dry cows, heifers in calf and heifers 12 to 27 months (productive class) and keep the number of steers low. However, some farmers bought steers for short-term pen fattening to increase capital available for purchase of dairy stock (see *Text Box 3.3.1*).

Training. A total of 318 dairy farmers (compared to 297 dairy farmers in the previous quarter) received training and technical assistance on animal nutrition and health, milk quality control, marketing, and GAHPs (Table 3.3.2.2 & Table 3.3.2.3). The training and technical assistance aimed to increase milk yields from the baseline of 2.61 liters per day per cow to above 12 liters, lactation periods to about 300 days, and the calving interval to between 12 and 13 months. Of note is the increase in the number of farmers who attended milk quality control trainings, which has improved the quality of milk delivered.

Table 3.3.2.2: Dairy Trainings by District, Jan - Mar 2016

District	Female	Male	Total
Chipinge	4	32	36
Chirumhanzu	18	30	48
Gokwe South	28	104	132
Kwekwe	0	2	2
Nkayi	10	3	13
Shurugwi	18	34	52
Umzingwane	12	23	35
Grand Total	90	228	318

Table 3.3.2.3: Dairy Training by Subject, Jan - Mar 2016

Training Subject	Oct 2015 - Dec 2015			Jan 2016 - Mar 2016		
	Female	Male	Total	Female	Male	Total
Animal Health	0	3	3	6	12	18
Fodder Production	79	130	209	64	176	240
Husbandry Practices	88	93	181	47	140	187
Marketing	0	6	6	26	61	87
Milk Handling and Quality Control	4	18	22	19	55	74

3.3.3 Partnerships

Partnerships with private sector traders, processors, input suppliers, technical service providers, and credit and financial institutions are a key part of the Feed the Future Zimbabwe Livestock Development program's approach to commercialization of small-scale farmers. Engaging commercial companies ensures market-led program interventions and cost-shared alliances with private sector partners to deliver products and services. The strategy is to engage private sector partners and subcontractors to not only purchase product or supply inputs but finance some developmental facets of the value chain (such as supplying marketing information; supplying milking cans on a cost-recovery basis, or setting up joint chilling facilities with producers). Buyers, input suppliers, and finance institutions have in-house expertise in beef and dairy production, quality standards, and market specifications that they can transfer to small-scale producers as part of the partnership. To broaden the milk marketing base for program beneficiaries, two small-scale processors were engaged by the program in efforts to create partnerships. Small-scale processors offer a bridging market for beneficiaries as currently the volumes being produced are still too low to attract some large-scale processors (see *Text Box 3.3.3*).

The program is exploring low-cost ways of availing cold chain facilities at farm level; and cost-effective methods of transporting milk to the nearest processor while maintaining the quality of milk. The program signed a letter of intent with SNV Netherlands to jointly explore viable renewable energy technologies (solar or biogas) that can be implemented at farm level and along the value chain to maintain the cold chain and quality.

To enhance the provision of timely technical and marketing information to its beef and dairy beneficiaries, the program signed an MOU with Econet Wireless to support the development of a mobile platform called EcoFarmer that will provide short message service (SMS) hints and tips for smallholder farmer beneficiaries. The partnership will provide Econet with beef and dairy technical material and information for the development of mobile-based advisories.

Additionally in this quarter, the Feed the Future Zimbabwe Livestock Development program's technical team continued to liaise with most of its partners (see *Annex 3 & 4*) to ensure maximum impact on outcomes.

3.4 NUTRITION AND WASH

One of the milestones achieved this quarter was the completion of a Nutrition and WASH Strategy to guide the implementation of this component.

The current drought has increased the burden of ensuring food security on program beneficiaries and is atypical to a normal season when farmers are able to obtain diverse produce from the summer crops growing in their fields. Food diversity activities focused on raising awareness and sensitizing program beneficiaries on the nutrient content of various foods as well as the different food groups. Beneficiaries

Text Box 3.3.3: New partnerships could strengthen program activities

Competitive Brand Shapers (CBS) is a registered small-scale processor in Harare that specializes in natural sour milk (*Izinkefu*). CBS supplies markets as far as Masvingo and Bulawayo and has expressed the need to expand processed milk sales into these markets. Currently, CBS processes 3,000-4,000 liters of milk per day and plans to open a dairy plant in Gweru this year, which opens the door for linkages to program beneficiaries.

Adriaan Scheepers is a commercial farmer and shareholder at Kershelmar dairies where he delivers at least 6,000 liters of milk daily. The Feed the Future Zimbabwe Livestock Development program team held discussions with him to explore the possibility of working with program beneficiaries as outgrowers. Scheepers' farm is situated in Chirumhanzu district and is central to Lynwood dairy group and wards 23 and 2 in Shurugwi.

can now identify commonly found nutritious foods that can be added to current diets, and are aware of the need for the production of small livestock for animal protein.

Activities focused on improving children's health involved imparting knowledge to farmers on the importance of the frequency of meals, diversity of meals, and use of local nutritious foods, especially in areas with relatively good harvest, such as Gokwe (Midlands) and Nkayi (Matabeleland North). Farmers in Chipinge are already receiving grain and cash from World Vision International and the Department of Social Service for drought relief. The Feed the Future Zimbabwe Livestock Development program is supporting these efforts with technical assistance.

Hygiene promotion activities centered on hand washing, construction of toilets, digging of rubbish pits, and water treatment. Table 3.4.1 and Table 3.4.2 summarize the number of program beneficiaries who received training and technical assistance on WASH, nutrition, and child health in this quarter.

Table 3.4.1: WASH, Nutrition, and Child Health Trainings, Jan - Mar 2016

Training Area	Female	Male	Total
Child Health	37	58	95
Nutrition	138	160	298
WASH	100	170	270

Table 3.4.2: WASH, Nutrition, and Child Health Trainings by District, January - March 2016

District	Child Health	Nutrition	WASH
Chipinge	39	122	76
Chirumhanzu	0	17	0
Gokwe South	15	12	86
Kwekwe	33	18	23
Nkayi	0	35	44
Shurugwi	8	79	26
Umzingwane	0	15	15
Total	95	298	270

3.4.1 Nutrition

A total of 298 beneficiaries received training and technical assistance on nutrition while 95 beneficiaries received child health training during the quarter. Table 3.4.1.1 details the nutrition and child health training and technical assistance offered to beneficiaries in program areas. Across trainings, lessons on basic nutrition covering food groups was the most popular.

Table 3.4.1.1: Nutrition and Child Health Trainings by Subject Area, January - March 2016

Training Area	Training Subject	Chipinge	Chirumhanzu	Gokwe South	Kwekwe	Nkayi	Shurugwi	Umzingwane	Total
Child Health	Breast Feeding	0	0	6	44	0	0	0	50
	Growth Monitoring	37	0	0	0	0	8	0	45
	Infant Feeding	7	0	15	44	0	0	0	66
Nutrition	Basic Nutrition	103	17	9	18	33	70	15	265
	Food Demonstrations	5	0	0	0	0	0	0	5
	Nutrition Counselling	35	0	4	0	13	10	0	62
	Food Preservation/ Value Addition	16	0	6	18	0	0	0	40

Nutrition gardens offer an easy way for farmers to increase diversity of foods consumed, especially in areas where water is readily available. The program is encouraging farmers to diversify the crops they grow in their gardens, taking into consideration GAPs including reuse of household water, mulching, and intercropping in areas where water is scarce. Of the 15 farmers trained on gardening in Umzingwane, three farmers improved existing gardens and three others established new gardens. At these gardens and elsewhere in Zimbabwe, the program is promoting drip irrigation using a water container attached to the pipes. The equipment needed costs less than \$50, and drip irrigation produces better yields because of its high efficiency in water utilization.



Photo by Fintrac
Program farmer Idon Dube uses simple drip irrigation technology in his nutrition garden. When you use a photo remember to attach a signed consent form

Child health nutrition messages were emphasized among mothers with children under 2 years of age and other caregivers. A total of 95 participants were trained and received technical assistance. In Chipinge, the program is reinforcing trainings given to farmers so that they may fully utilize the comprehensive package of food supplements for children being provided by the ENSURE program.

Across most of the program areas, infants and young children typically consume fewer than four meals a day, which is insufficient for their dietary needs. The program does not distribute food, but farmers are being encouraged to provide at least one additional meal for the children, and to include fruit in the diet. The Feed the Future Zimbabwe Livestock Development program is also engaging local agrodealers and traders to improve beneficiary access to a diverse range of foods.

Food demonstrations. Field days and technical trainings showcased locally available foods as well as different ways of conserving nutrients through storage, processing, and preparation. During one session, selected beneficiaries in Gokwe brought different dishes made of locally available fresh and dried vegetables (*nyovhi*, pumpkin leaves, sweet potato leaves, spinach, and okra).

These platforms also introduced new crops, including butternuts, which were promoted during a field day in Kwekwe district's Ngondoma area. The high Vitamin content makes butternut an ideal crop for children, pregnant women, and lactating mothers; the plant's leaves and flowers are also edible. In training sessions in Nkayi, farmers reevaluated their standard menus to incorporate locally available vegetables. Follow-up technical visits and more food demonstrations are lined up for the next quarter.

Small livestock. In the baseline, most households recorded low consumption of plant and animal protein in their diets. As a result, small livestock production is being promoted as a source of household protein. The program is encouraging households to invest proceeds from drought-enforced cattle sales into goats and poultry. Small livestock are more resilient and reproduce faster than



Photo by Fintrac
A beneficiary farmer supplements her indigenous chickens and turkeys with cereal as a way of increasing her flock faster during a technical assistance visit to her home in Ward 12, Shurugwi district.

large livestock, and can be sold to restock cattle. Beneficiary farmers in Ward 12 in Shurugwi are working on increasing their indigenous fowls by supplementing them with small grains, such as sorghum and millets, to improve their fertility. In Chipinge, farmers are being encouraged to use more disease-tolerant indigenous chickens, turkey, and guinea fowl.

Fruit trees: The program is encouraging farmers to plant fruit trees including mulberry, *ziziphus mauritiana* (*masau*), moringa, and baobab around their homesteads or in their gardens and fields. Farmers are being encouraged to plant more fruit trees that are adapted to their environments to complement wild fruits so that all beneficiary households can benefit from fresh produce. Households will be trained in preservation using low-cost methods such as solar drying. Table 3.4.1.2 lists the number of fruit trees planted in this quarter.

Table 3.4.1.2: Estimated Number of Fruit Trees Planted per District

District	Fruit Trees Planted
Chipinge	400
Gokwe South	150
Kwekwe	100
Lupane	370
Nkayi	600
Total	1,620

Source: FTFZ-LD

3.4.2 Sanitation and Hygiene

A total of 270 farmers received awareness trainings on WASH-related aspects during the reporting period (Table 3.4.2). Participatory methods were used to develop lively discussions on safe sources of water, water storage, and basic sanitation. Farmers explored the benefits and dangers associated with each method and devised solutions to ensure clean safe water for drinking and household use.

Table 3.4.2.1: Number of Beneficiaries who Attended WASH Trainings by Subject Area, January - March 2016

Training Area	Training Subject	Chipinge	Chirumhanzu	Gokwe South	Kwekwe	Nkayi	Shurugwi	Umzingwane	Total
WASH	Safe Food Preparation Environment	12	0	0	0	0	0	0	12
	Optimal Hand Washing	45	0	70	27	8	10	15	175
	Human Waste Disposal/Toilets	41	0	32	16	24	10	0	123
	Improving Drinking Water	36	0	3	16	6	9	0	70

The program is encouraging construction of toilets at each homestead for safe disposal of human waste, which protects the health of both household members and their animals. The topic of toilet construction is well received when linked to its negative impact on incomes because of the transmission of beef measles, which can lead to carcass condemnation. The message has been integrated into feedlot trainings and cattle marketing; so far, three feedlot participants have used proceeds to construct toilets (see *Text Box 3.3.1*).

The program encourages farmers hosting centers of excellence to put in place the requisite WASH infrastructures, including toilets. Arthur Ncube is a beef lead farmer hosting a center of excellence in ward 8, Lupane. His homestead had no toilet but since joining the Feed the Future Zimbabwe Livestock Development program, he has now dug a toilet pit and is mobilizing family resources to complete construction. He has also dug a rubbish pit for his use. Another program beneficiary, Angeline Garwe in Chipinge, used part of the proceeds from cattle sales to construct a Blair toilet.

Innovative fly trap technology is another example of an improved sanitation method which was demonstrated during trainings in Gokwe and Chipinge which focused on its construction, use, and positioning. The simple trap uses a 2-liter plastic container which is cut and mounted at a strategic position with decomposing matter inside to attract and trap flies (see *Text Box 3.4.2*).

Additionally, the program is sensitizing farmers on the tippy-tap technology for hand washing that uses a suspended 5-liter container with soapy water activated by a simple foot pedal. Although most farmers know how to wash their hands, the use of soap is not as well acknowledged. Notably, children are learning hygiene in school and often correct parents with the good practices they learn.

Text Box 3.4.2: Farmers adopt fly trap technology for improved hygiene

Unhygienic environmental conditions, poor sanitation, and livestock attract flies that can spread communicable diseases, thus increasing the prevalence of diarrhea. To address this problem, the program is promoting a simple no-cost fly trap using readily available materials. The fly trap is made out from a 2-liter plastic container that is cut and inverted to allow one-way entry of flies that are baited with rotting material. The trap is hung in places frequented by flies, such as toilets, cattle pens, and washing places.



Photo by Fintrac



Photo by Fintrac

Senelisiwe Sibanda using a tippy-tap for hand washing after toilet use

3.5 BUSINESS DEVELOPMENT AND FINANCIAL LINKAGES

Business development and financial linkage services are cross-cutting activities that contribute directly to program results by assisting beneficiaries in identifying permanent opportunities for earning additional income. During the reporting period, activities focused on:

- Leadership skills - training was provided on group formation, governance, conflict resolution, and specific management functions.
- Business skills - trainings included recordkeeping and enterprise performance evaluation skills.
- Facilitating access to credit - farmers were linked to MFIs.

During the quarter, 16 farmer groups received business development training and technical assistance. A total of 13 MCC executive committee members from Gokwe South MCC, Umzingwane MCC, Tongogara MCC (Shurugwi), and Takawira MCC (Chirumhanzu) received training on business systems, leadership skills, and action planning.

To boost the volume of milk delivered to the Gokwe MCC, three new satellite groups (Simukai, Bambanani, and Batanai) were assisted in mobilizing members to form structured groups that feed into the main Gokwe MCC. This was done in response to results of an analysis carried out to assess the viability of the MCC. Historical milk intake records over seven months from June to December 2015 revealed that the volume of milk delivered to the center was insufficient to break even and cover the center's operational costs. Only 16 of the 60 farmer members consistently delivered their break even quota of 174 liters per month over the seven months. The program is now working with farmers to simultaneously increase milk yield at farm level and the number of farmers regularly delivering milk.

The three new dairy producer groups received training and technical assistance on group formation and governance, as well as setting up management structures that include women and youth for gender balance and business sustainability. A clear and enforceable constitution is vital to ensure group cohesion. Two newly formed groups, Kumboedza dairy association (Chipinge) and Gwanza beef group (Shurugwi) were assisted by the program in drafting their constitutions. In addition, Gokwe and Tongogara MCCs were advised to review their constitutions to clarify and enforce a number of clauses.

Marketing skills are crucial for a successful business and at Umzingwane MCC, farmers and the center administrator received training and technical assistance in this area. This intervention helped salvage more than 700 liters of milk about to be discarded after exceeding its sell-by date. With program assistance, linking the MCC to new markets in Gwanda and Filabusi, the center managed to sell 702 liters of milk in four days, up from previous average sales of 104 liters over the same period.

For increased market diversification, the program is identifying and engaging local transporters to improve direct marketing from farm to processor. Morgan Lunga, a local transport operator, was trained on how to calculate and cost his transport business. Lunga had previously abandoned transporting the milk from the MCC to Bulawayo or Gwanda because he had incorrectly assumed he was operating at a loss. The training helped him cost every expense, including depreciation.

Integrated training and technical assistance was also provided in enterprise performance evaluation, recordkeeping, enterprise budgeting, and farm planning. A total of 450 beneficiaries (Table 3.5.1) received farming as a family business skills training during the review period.

Table 3.5.1: Number of Beneficiaries Trained in Business Skills by District, January - March 2016

District	Female	Male	Total
Chipinge	55	86	141
Chirumhanzu	35	32	67
Gokwe South	29	92	121

Table 3.5.1: Number of Beneficiaries Trained in Business Skills by District, January - March 2016

District	Female	Male	Total
Kwekwe	9	12	21
Nkayi	9	11	20
Shurugwi	19	38	57
Umzingwane	7	16	23
Grand Total	163	287	450

Table 3.5.2 shows the breakdown of beneficiaries who received business skills trainings in various subjects, including farmer group organization, group marketing, recordkeeping, and farm planning. The topic of farmer group organization covered issues on group cohesion, formation of constitutions, roles and responsibilities of office bearers, and conflict resolution.

Table 3.5.2: Business Skills Training by Subject, January - March 2016

Subject	Female	Male	Total
Contract Management	25	47	72
Credit Management	8	17	25
Enterprise Budgeting	18	66	84
Farm Planning	73	96	169
Farmer Group Organization	64	150	214
Group Marketing	77	104	181
Recordkeeping	65	111	176

The program assisted five farmers in Irisvale (Umzingwane) in accessing loans totaling \$525 for buying stock feed to pen fatten six animals for 30 days. However, the farmers terminated the fattening exercise after 20 days in reaction to a sharp drop in beef market prices. The group was then linked to Heads and Hooves, a Bulawayo-based abattoir, who offered the best price at the time. As a result, the farmers realized a gross income of \$2,610 from their animals. In addition, market linkages were facilitated for three farmers from Gokwe South, who had used their own resources to pen feed their animals, to Koala Abattoir in Kadoma. The farmers sold five animals for \$2,509, which is double the price offered by the middlemen.

Christopher Chinembiri of Gokwe is one of four dairy farmers who received program assistance to access a total of \$2,000 in loans from Untu Microfinance to erect paddocks for dairy cattle. The loan was secured at 5.5 percent per month with a tenor of six months and an administrative fee of 4.5 percent. Proceeds from milk sales to the MCC will be used to repay the loans.

The program is assisting Kumboedza Dairy Association, a dairy group of ten farmers in Chipinge, to secure a loan worth \$4,310 from Quest Financial Services. The loan will be used to purchase a diesel chaff cutter to process crop stover. The chaff cutter will enable the dairy farmers to process the abundant crop stover, available throughout the year, from the irrigation scheme for their livestock. Chopped stover increases voluntary feed intake by cattle and also makes it easy to mix with molasses. Farmers can sell this molasses stover mix to others outside the irrigation scheme. All of the farmers in the group were trained in negotiating skills, contract management, recordkeeping, dairy farm budgets, market and financial linkages, and constitution formulation.

3.6 LOCAL CAPACITY DEVELOPMENT

The Feed the Future Zimbabwe Livestock Development program's contract includes a component to build the capacity of local organizations to effectively implement USAID-funded agricultural development activities. The program is currently providing capacity building support to LEAD, a Zimbabwean

organization implementing the Feed the Future Zimbabwe Crop Development program. In addition, the program is required to build the capacity of its subcontractors and partners to ensure seamless implementation of the project.

This reporting period, activities included finalizing the capacity building work plan for LEAD, and assessments of the institutional capacities of Umzingwane and Tongogara MCCs, including governance and leadership; operations; financial and human resources management; and program delivery. Full reports of the findings were produced, shared, and discussed with MCC leadership and farmers. The reports highlighted capacity building deficits that will now be addressed in the next phase of drawing up MOUs and work plans with the MCCs.

The following sections summarize the specific capacity building activities carried out for each partner.

LEAD. The program continued in this quarter to review LEAD's operating manuals. A complete review of the human resources and procurement manuals was provided to LEAD for implementation.

The program continued to provide training and one-on-one technical assistance to the Feed the Future Zimbabwe Crop Development program staff on gender, communications, M&E, project branding, and marking guidelines. Technical assistance for the M&E component included drawing up M&E plans; setting indicator targets; outlining M&E approaches; conducting and analyzing baseline surveys; producing data for quarterly reports; and preparing for and conducting data quality assessments. Training was conducted on indicator concepts, survey design (constraints in open data kit system), and analysis.

LEAD and the Feed the Future Zimbabwe Crop Development staff received technical assistance on compliance issues related to the EMMP, the Initial Environmental Examination, Safe Use Action Plan (SUAP) Tracker, and the Pesticide Evaluation Report and Safe Use Action Plan (PERSUAP).

ABS-TCM The subcontract agreement between Fintrac and ABS-TCM was signed this quarter. Capacity building activities for ABS-TCM began with an orientation workshop covering gender, finance, communications, and M&E. ABS-TCM staff were also oriented on how the program integrates gender and youth in its activities.

Technical assistance and training on finance highlighted documentation requirements for invoicing to reduce the lead time of invoices. Special requirements pertaining to USAID were also part of the training with a focus on procurement requirements and value added tax reporting.

Compliance issues related to the Office of Foreign Assets Controls were also shared and highlighted in relation to procurement.

MCCs The program is working with three MCCs that provide a market for beneficiaries' milk. The centers are strategically located to provide bulking up facilities as well as cold chain and value addition options. Farmers own and manage MCCs, some of which have existed for more than 20 years. Although these MCCs are strategically located to serve their clientele, their performance has been poor.

Initial assessments were carried out and finalized for Umzingwane and Tongogara MCCs during the review period. The current capacity for each center was evaluated and possible capacity building needs were identified based on scores achieved.

Umzingwane MCC. The program signed an MOU with Umzingwane Dairy Association to undertake capacity building activities. The MOU was necessary to clearly state expectations and responsibilities of both parties. The program also assisted the MCC to draft a work plan to address shortfalls identified in the capacity assessment. Employees at the MCC were trained in financial reporting, budget preparations, and cash management. Implementation of a code of conduct and drawing up staff contracts were identified as topics that should be addressed immediately.

Tongogara MCC (Shurugwi). The program conducted an assessment of the MCC and discussed findings with the management committee, but a work plan has been delayed because of the lack of

an MOU. Signing the MOU on capacity building is subject to the resolutions of the MCC's annual general meeting scheduled to take place in April.

Gokwe MCC. Gokwe MCC has been in existence since the early 1990s and has more established financial systems. The program organized a visit for Umzingwane and Shurugwi MCC representatives to Gokwe MCC for the representatives to learn from fellow farmers on how to run and manage a dairy association. The visit addressed financial reporting, financial documentation, policies, and procedural issues.

No capacity assessment has been carried out for the Gokwe MCC. A verbal working arrangement is currently in place and the intention is to draw up a formal working agreement in the next quarter.

4. ENVIRONMENT

This section summarizes the Feed the Future Zimbabwe Livestock Development program's environmental mitigation and adaptation interventions, particularly as they relate to climate change. Zimbabwe already experiences the impacts of climate variability and change such as increasing water scarcity, declining agricultural productivity, rise in temperatures, and environmental degradation. Smallholder farmers are particularly vulnerable because of their over dependence on rainfed agriculture and limited adaptive capacity to the variations in climate.

Commercialization is key to adapting to climate change and it underpins all Feed the Future Zimbabwe Livestock Development program activities focused on profitable and sustainable agricultural production. In addition, all interventions incorporate good animal, agricultural, and business practices, which not only are critical to long-term profitability but also have positive environmental outcomes.

All activities must comply with US government and Zimbabwean environmental, agrochemical, and food safety regulations, and are designed to have a positive impact on the environment.

This quarter, program technicians trained 201 farmers, 26 percent women, in personal protective equipment (PPE), safe use and disposal of pesticides, and soil conservation (Table 4.1). Training focused on safe handling and disposal of pesticides and containers; preferential use of PERSUAP-compliant chemicals; and the importance of appropriate PPE when handling chemicals.

Table 4.1: Individual Farmers Trained on Environmental Subjects by District, Jan - Mar 2016

District	Female	Male	Total
Chipinge	21	71	92
Gokwe South	9	37	46
Kwekwe	5	18	23
Shurugwi	13	18	31
Umzingwane	4	5	9
Grand Total	52	149	201

Wearing protective clothing was encouraged for individuals spraying cattle or administering drugs, as was safe keeping of pesticides and drugs, and responsible disposal of packaging. Fifty-seven farmers were trained on the use of PPE, while 131 were trained on safe disposal of chemicals (Table 4.2).

Table 4.2: Environment Training Subjects, Jan - Mar 2016

Training Subject	Female	Male	Total
Personal Protective Equipment	19	38	57
Safe Disposal of Chemicals	32	99	131
Soil Erosion	22	86	108

EMMP: During the reporting period, 42 beneficiary households were assessed for EMMP compliance; these were mainly lead farmers hosting centers of excellence. The topics investigated covered animal husbandry, animal health, and handling facilities.

Table 4.3: Animal Husbandry Activities

Activity	% Baseline Practice-Beef	% Baseline Practice-Dairy
Are the breeds adapted to the area?	100%	100%
Are handling facilities appropriate and /or adequate?	36%	29%
Is soil erosion a problem?	46%	29%

Table 4.3: Animal Husbandry Activities

Activity	% Baseline Practice-Beef	% Baseline Practice-Dairy
Are there signs of land degradation/overgrazing?	68%	47%
Are there signs of deforestation?	56%	35%
Is grazing management being practiced?	26%	20%
Does the farmer have a woodlot/tree planting area?	9%	47%

In all areas, the breeds used for beef and dairy were adapted to the local area, which is critical in preventing animal losses. All households scored poorly for dairy and beef in regard to handling facilities at farm level; for land degradation and overgrazing; and for deforestation and grazing management practices. Only 36 percent of beef farmers and 29 percent of dairy farmers reported having adequate handling facilities. Proper and adequate handling facilities are essential for performing GAHPs such as dehorning, deworming, castration, ear tagging, pest control, AI, and branding. The program is using its centers of excellence to showcase proper low-cost handling facilities with the anticipation that other farmers will adopt these good practices.

The promotion of paddocks and the planting of fodder trees in program areas will help reduce overgrazing and deforestation by introducing grazing management and utilization of planted rather than indigenous trees for poles and firewood. In Gokwe and Chirumhanzu, some farmers have started paddocking their fields.

The Feed the Future Zimbabwe Livestock Development program is promoting the establishment of fruit and forage trees in all focus areas. Forage trees being promoted are mulberry, *leucaena*, *moringa*, and cactus, which are adaptable to a diverse range of soil and climatic conditions. These trees will provide shade and forage; increase oxygen to animals; act as wind breaks; protect the soil from wind and rain drop erosion; and serve as a habitat and shelter for animals and birds. The twigs that remain after feeding the fodder trees to livestock will be used as firewood, hence reducing pressure for this resource on nearby forests. In Chipinge, where the soil is bare and seemingly lifeless, planting drought-tolerant trees may help to regenerate adaptive ecosystems.

Nurseries were established at centers of excellence in all focus areas for transplanting during the beginning of the 2016/2017 rainfall season. For example, 22 farmers in Gokwe South and Kwekwe have so far established 247 mulberry cuttings.

Soil erosion was reported as a problem by 46 percent of households in beef areas and 29 percent of households in dairy areas. Overall, the program trained 108 farmers on erosion control during the review period. Following the good rains received in February, a number of farmers in Gokwe and Kwekwe experienced soil erosion in some waterways and contours; therefore, the program advised them to erect and maintain contour ridges as well as to plant star grass to strengthen the ridges.

Table 4.4: Animal Health Activities

Activity	% Baseline Practice-Beef	% Baseline Practice-Dairy
Farmers using dips/chemical remedies?	100%	94%
Farmers/Institutions using appropriate techniques/equipment?	78%	82%
Farmers/Institutions with PPEs and use it when spraying?	58%	65%
Farmers/Institutions having dosing and vaccination records up to date?	30%	35%
Farmers/Institutions having mastitis treatment records up to date?	N/A	100%
Farmers/Institutions engaging a trained applicator?	5%	20%
Farmers/Institutions with chemicals/spraying equipment locked	67%	56%

Table 4.4: Animal Health Activities

Activity	% Baseline Practice-Beef	% Baseline Practice-Dairy
and in labelled containers?		
Farmers/Institutions disposing chemical containers, injections, plastics correctly	76%	65%
Farmers/Institutions with adequate and potable water available when pesticides are used?	100%	100%
Farmers/Institutions using pesticides that are PERSUAP complaint?	83%	82%

While more than 90 percent of respondents used pesticides, only 58 percent of beef farmers and 65 percent of dairy farmers used protective clothing, and in most cases the protective clothing was not full gear. Affordability and unavailability of protective clothing equipment were cited as the major reasons for the low uptake. The program has liaised with local dealers near program areas to stockpile protective clothing and continues to urge farmers to utilize service providers trained by the program, as well as to pool their resources collectively to acquire more expensive equipment like masks and breathers.

Recordkeeping for deworming and vaccination is low at 30 percent and 35 percent among beef and dairy beneficiaries, respectively. There are still a small proportion of farmers using non-PERSUAP compliant pesticides in both beef and dairy areas and this is being actively discouraged. The program will continue to train farmers on PERSUAP-compliant chemicals and liaise with local agrodealers near program areas to stockpile chemicals recommended by the field team.

Farmers in most program areas still need to master the safe disposal of empty chemical containers and plastics. As part of its training, the program is encouraging farmers to use pit latrines for disposal of chemical residues and containers, and bashing, battering, and burying plastics.

To avoid decanting chemicals into unlabeled containers, farmers buying chemicals in groups have been encouraged to keep them with one trusted farmer and only take the quantity required at a certain time.

Table 4.5: Animal Handling Facilities

Activity	% Baseline Practice-Beef	% Baseline Practice- Dairy
Farmers with handling facilities sited >30m from dwellings	86%	87%
Farmers/Institutions with water runoff from facilities diverted away from dwellings	95%	93%
Farmers/institutes with water source (borehole, well) >30m from livestock facilities	95%	92%
Farmers/Institutions with separate access to water for humans and animals	75%	46%
Farmers/Institutions with area around water source degraded	32%	23%
Farmers/Institutions with running /adequate water in the toilets	79%	100%
Farmers/ using fly traps	5%	7%
Farmers/Institutions with adequate waste handling facilities in place	71%	73%

Fly control is poor in all program areas, and is only practiced in 5 percent of households in beef areas and 7 percent in dairy areas. Most beneficiaries build their holding pens next to the homesteads out of fear that thieves will steal their cattle, and in some cases they build pens less than the recommended 30 meters from their dwelling. This proximity challenges the control of flies. Consequently, the program introduced simple fly traps that can be created from empty 2-liter containers at all centers of excellence.

Farmers have adopted this low-cost technology and installed traps at key points, such as animal handling facilities (overnight pens, milk sheds, and calf pens), household dish washing points, and waste pits.

In addition the program is encouraging farmers to have a minimum of two pens available for rotation in situations where muddy conditions prevail as a result of rain. This rotation prevents foot rot, breaks the fly breeding cycle, and controls odors from non-rotational single pens under muddy conditions.

5. GENDER

Women and youth play an important role in livestock production, and the program seeks to maximize the opportunities available for this group. Despite the persistent drought that has had an adverse effect on agriculture, including livestock production, women farmers in the program continued to invest their time, labor, and expertise. The project has continued to support full gender integration and youth inclusion by operationalizing the Feed the Future Zimbabwe Livestock Development Gender and Youth Strategy 2015-2020, which USAID approved in this quarter. The strategy outlines the following targeted interventions that expand options and create new opportunities to equally generate income for men and women as well as address the challenges faced by women in agriculture:

- Providing gender-appropriate training in terms of timing, location of training, mobilization, and articulation of subject matter involving both men and women.
- Promoting commercial opportunities for women and youth within the beef and dairy sectors.
- Encouraging local businessmen and opinion leaders to deliberately target women and youths within their businesses and farms to demonstrate the benefits of an equal decision making process in livestock management.
- Creating and encouraging microenterprise activities with women and youth groups.
- Improving nutrition for the whole family.
- Deliberately targeting female beneficiaries to host centers of excellence in beef and dairy programs.

The program seeks to assist beef and dairy farmers to improve the quality of their lives and the lives of their families. This is being addressed through a focus on women and youth's practical needs in livestock development, particularly accessing credit, inputs, market information, and technology; increasing awareness on gender and social inclusion; and ensuring the participation of women and youth in decision making roles (see *Text Box 5.1*).

During the quarter, program and partner staff received gender mainstreaming training. Field staff from all program focus areas received a one-day gender training session at Kwekwe and Chipinge offices. ABS-TCM staff members were also trained on topics covering gender mainstreaming, social mobilization, and social inclusion.

In addition, the program developed and distributed among field staff and stakeholders a monthly Gender Worksheet (see *Text Box 5.2*).

Text Box 5.1: Expected gender mainstreaming outputs in livestock production

- Women, men, and youth participating in all levels of decision making
- Women, men, and youth accessing credit, inputs, and market information
- Women, men, and youth accessing new technologies in livestock production

Text Box 5.2: Worksheet for mainstreaming gender

The Feed the Future Zimbabwe Livestock Development program developed a Gender Worksheet tool to ensure gender and youth inclusion and allow beneficiaries to continuously receive gender messages and information. The tool is updated monthly and assists field personnel on how to steer gender focused discussions and mainstream gender in livestock technical activities. This guideline has been well received as it helps field personnel to effectively engage beneficiary farmers, and provides monthly communication and feedback structures to capture gender issues at a district level. Since coming into effect, the following gender messages and topics have been covered:

Gender issues in drought – January 2016

- Findings indicate that women by socialization are most affected by drought
- Drought mitigation strategies, including investment in small livestock, preservation of indigenous vegetables and fruits, and establishment of drought-tolerant fruit and fodder trees

Gender issues in livestock ownership – February 2016

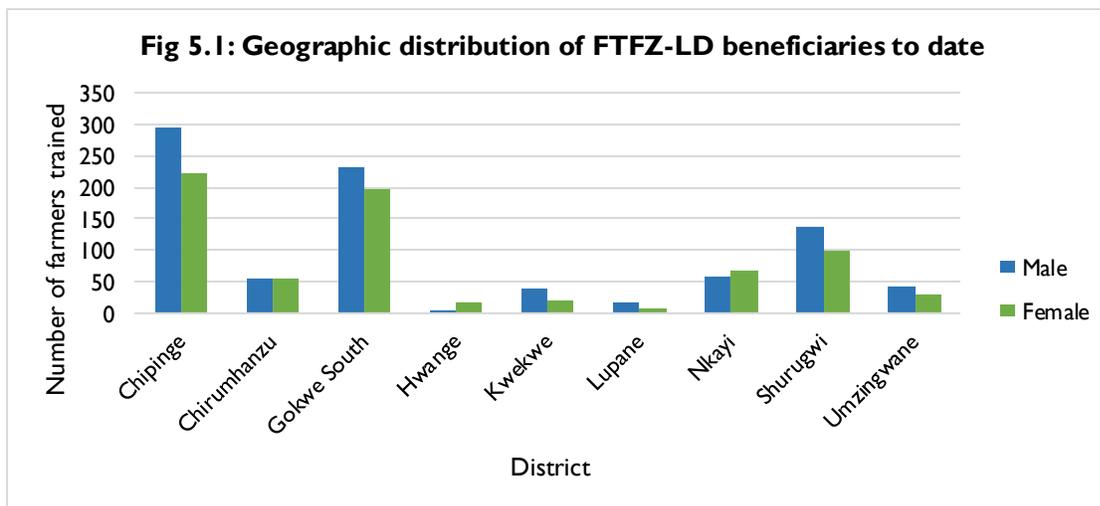
- Although cattle is collectively owned in a family, cultural norms encourage cattle registration under male family members
- Women have a significant say in decisions about the family herd

Celebrating female achievers in livestock production – March 2016

- In commemoration of International Women’s Day, the program dedicated March to honor female achievers in livestock production by documenting testimonials from female livestock farmers.

5.1 MEASURING GENDER IMPACT AND WOMEN’S EMPOWERMENT

Since inception in June 2015, 1,596 smallholder beef and dairy farmers in Zimbabwe received training and technical assistance, and the program has facilitated their access to new technologies, animals, inputs, markets, and credit (see Figure 5.1).



Of this total, women account for 48 percent (771 farmers).⁶ Ongoing staff training and gender awareness sensitization targets to increase beneficiaries to 50 percent women by the end of the

⁶ Equivalent to 676 households, see also Table 3.1.2.1

program. The campaigns aim to change cultural and traditional beliefs regarding women's ownership and control of cattle. During the review period, 948 farmers, 390 of whom were women, benefited from the various program activities.

During the quarter, the program commemorated International Women's Day in March by dedicating the month to documenting and capturing stories of female beneficiaries. Activities included recording conversations and testimonies highlighting the successes of female livestock farmers.

Roseline Chiweshe, wife of Gokwe MCC chairperson Elias Chiweshe, increased her daily milk yields from 35 to 65 liters from 12 animals after receiving technical assistance. "My life is as good as that of any women who are formally employed," she said. Female smallholder farmer Sarafind Nnodha from Shurugwi also shared her positive experience as a result of working with the program. "If God blesses me with a long life, I will continue working with the Feed the Future Zimbabwe Livestock Development program," said Sarafina Nnodha from Shurugwi. "I now have knowledge on the importance of fodder production. We have been taught to grow green and feed green." Since she began working with the program, Nnodha has managed to buy additional cattle and is now setting up her dairy herd.

5.2 LEADERSHIP

The Feed the Future Zimbabwe Livestock Development program aims to strengthen female leadership in the livestock sector to create sustainable networks of female leaders in the sector. This will promote investment and partnerships to make livestock production more profitable and responsive to the needs of viable beef and dairy farmers. As of the end of this quarter, women were occupying 32 percent of leadership positions in community-based organizations working with the program. Female clients are either lead farmers hosting centers of excellence or office bearers within farmer groups (MCCs, pen fattening groups, and producer associations).

5.3 ACCESS TO SKILLS, FINANCE, CREDIT, AND MARKETS

Gender and youth mainstreaming were taken into account during the delivery of technical assistance and training. Tables 5.1 and 5.2 summarize the number of women who participated in technical trainings provided by the program during the third quarter. The trainings aim to provide women and youth with skills to engage and contribute productively to their family livestock businesses.

Table 5.1: Beef Training by Subject, Jan - Mar 2016

Training Subject	Female	Male	Total	% Females
Animal Breeding	41	47	88	47
Animal Health	18	31	49	37
Cattle and Meat Grading	37	81	118	31
Fodder Production	64	91	155	41
Husbandry Practices	179	198	377	47
Marketing	20	54	74	27
Other	45	36	81	56
Pen Fattening	20	25	45	44

Table 5.2 : Dairy Training by Subject, Jan - Mar 2016

Training Subject	Female	Male	Total	% Females
Animal Health	6	12	18	33
Fodder Production	64	176	240	27
Husbandry Practices	47	140	187	25
Marketing	26	61	87	30
Quality Control	19	55	74	26

The Feed the Future Zimbabwe Livestock Development program recognizes that constraints, including domestic and childcare responsibilities, can undermine women's participation in field activities and trainings; therefore, activities involve all family members at appropriate times for women to join.

The program promotes women and youth as livestock producers to widen their economic opportunities through access to business skills training. During the quarter, 36 percent of farmers who participated in these trainings were women. Improving women's access to credit and inputs enables investment in productive assets, which leads to improved household incomes, nutrition, human capital development, and family health.

Three women, who are part of the ten-member Kumboedza Dairy Association in Chipinge, are accessing a loan from Quest Financial Services to purchase a diesel chaff cutter to process crop stover. The chaff cutter will enable the dairy farmers to process crop stover for feeding their dairy animals throughout the year, generate extra income from toll chaff cutting and selling hay bales, and reduce the burden on women in processing the stover.

Of the farmers from Chipinge who piloted direct sales of their cattle to abattoirs, 24 percent were women (Table 3.2.2.4). Direct sales increase farmers' returns as they benefit from economies of scale and the elimination of middlemen.

6. LESSONS LEARNED

Creating opportunities for smallholder farmers to earn extra income motivates them to adopt GAHPs that improve their productivity and market performance. Attendance at trainings and technical assistance sessions has increased in areas where direct marketing of cattle from the rangeland to abattoirs has proved to increase incomes.

Primarily, limited knowledge continues to hinder the performance of the smallholder beef cattle sector. Even among government extension personnel, simple and easy practices to mitigate drought effects on livestock are not well known. Despite the abundance of discussion on the importance of fodder production, little activity occurs on the ground. Instead, *leucaena* trees are mostly grown either for ornamental purposes or for firewood and farmers remain unaware of the tree's value as a fodder crop. The same applies to mulberry where isolated households usually have one tree solely for fruit. Farmers were also unaware of alternatives to marketing through middlemen, but now direct sales to abattoirs is addressing this issue and doubling farmers' incomes.

Capacity building with MCCs this quarter helped identify common weaknesses. In addition to poor MCC governance constraining commercialization, weak or absent marketing strategies should also be resolved. The program will continue to work with MCCs to increase their productivity and management systems by focusing on improving their budgeting skills, trend analysis, operating systems and procedures.

7. CHALLENGES

As lessons were learned, challenges also became apparent that should be addressed:

- Prevailing dry conditions and drought continue to have adverse effects on production and productivity of livestock farmers, especially fodder production. Expected yields from program-established demonstration sites vary from 0 to 55 percent of potential. Actions undertaken as a result include cutting and baling hay from rangeland and pastures; and in areas where the rangeland is poor, measures are being taken to import hay from abundant locations.
- The drought has also affected returns on cattle sold. The most profitable option is normally to sell cattle off the rangeland toward the end of the rainy season when cattle condition should be high because of the abundant feed sources. This season, the rangeland in Chipinge and some parts of Kwekwe and Shurugwi has remained poor due to the drought. The cattle are thus not in their best condition, and with the rainy season tailing off their condition will begin to deteriorate rapidly. Sub-optimal conditions mean sub-optimal returns. The situation is further compounded by an artificial oversupply of cattle because of forced sales as farmers must dispose their animals as the drought worsens.
- Traditional norms continue to constrain the participation of women and youth in commercial livestock production. Cattle registration and ownership remain in the domain of the male head of the household. The program is encouraging the registration of cattle as a family asset and also encouraging parents to pass on to their unmarried adult children dowry cattle, which they can start commercializing under their mentorship.
- Social norms also constrain the full participation of women in training and technical sessions as women often have to leave early to attend to their domestic tasks. In response, the program has designed its training and technical sessions to last no more than two hours.
- Consolidating and marketing surplus milk in Chirumhanzu, Umzingwane, and some parts of Shurugwi remains a major challenge. The program is exploring low-cost ways of availing cold chain facilities at farm level as well as cost-effective methods of transporting the milk to the nearest processor while maintaining the quality of the milk. The program signed a letter of intent with SNV Netherlands to jointly explore viable renewable energy technologies (solar or bio-gas) that can be implemented at farm level and along the value chain to maintain the cold chain and quality. In addition, the program continues to engage processors for possible off take.
- Power struggles in Shurugwi and Umzingwane MCCs have slowed down the pace of capacity building interventions. At Shurugwi dairy cooperative, the process of convening a general meeting has taken longer than expected due to leadership issues and internal conflicts between the management committee and their supervisory board.

8. ACTIVITIES PLANNED FOR NEXT QUARTER

In addition to ongoing technical training and assistance to both beef and dairy farmers, notable planned activities for the coming quarter include:

- Finalization of the breeding and health protocols for both beef and dairy.
- An animal health campaign targeting deworming animals for round worms and liver fluke; and vaccination for Blackleg, anthrax, contagious abortions, lumpy skin disease, and Bovine viral diseases.
- A campaign to control ticks to avoid the spread of tick-borne disease. The Feed the Future Zimbabwe Livestock Development program has been encouraging project participants to either take their cattle to community dip tanks or use knapsack sprayers to dip their cattle.
- Demonstrations on different stock feed preservation techniques and supplementary feeding, such as mixing stover with molasses; harvesting and feeding acacia pods; and using the feed additive Browse Plus to enhance the utilization of poor quality roughages and browses. Urea treatment of stover and utilization of urea-treated stover will be demonstrated during the critical dry season months (October, November, and December) when cattle tend to succumb to poverty deaths.
- Training on feed formulation for dairy cows.
- Continued GAHPs training on castration and dehorning; calf and heifer rearing, and tagging.
- Continued milk quality training for old and first time dairy farmers as it is important for farmers to sell a hygienic product.
- Marketing activities that involve selling off the rangeland directly to abattoirs in most of the beef regions; introducing and expanding the live auction system in Lupane, Hwange, and Nkayi; and possibly resuming pen fattening activities if beef prices firm up.
- Marketing activities for dairy products that involve product handling and storage; and pricing of products and presentation of products to the market.
- Continued business skills training on relevant production records, income, and expenditure.
- Utilization of AI for cattle breeding in beef and dairy herds via a partnership with ABS-TCM.
- Continued identification of lead farmers to create centers of excellence for beef and dairy. Hosts of these centers will receive program assistance to develop into model farmers using their existing resources. Technical assistance will be provided to these farmers through the life of the program, and other beneficiaries will adopt GAHPs from farmer field schools at the centers.
- Finalization of the Nutrition, and WASH Strategy.
- Soliciting for proposal to subcontract dairy partners, nutrition, and institutional capacity building of LEAD's management.

ANNEX I: SNAPSHOTS

Fodder Production Mitigates Effect of Drought on Livestock



Photo by Fintrac Inc.

Above: Smallholder beef farmer Cleophas Moyo and his wife show off their healthy velvet bean crop, ready for harvesting.

Below: Moyo displays velvet bean flowers from his successful crop.



"All the money that I have been using on a yearly basis to buy commercial stock feed I will now invest in livestock to increase my herd, since I now have a cheap reliable source of supplementary feed,"

Cleophas Zololo Moyo,
Smallholder beef farmer

Recent changes in climatic patterns across Zimbabwe have adversely affected agricultural productivity and led to crop failures, depleted rangelands, and increased livestock mortalities. For Nkayi district in Matabeleland North, unevenly distributed rainfall amounted to 417 millimeters and badly affected many crops, thus exposing households to severe hunger.

Given this situation, the Feed the Future Zimbabwe Livestock Development program intervened to safeguard livestock from the detrimental effects of the drought. Through program training, farmers learned how to establish drought-resistant fodder crops that provide a cheap alternative to commercial feeds to supplement livestock during the dry season. As a result of program support, 15 smallholder farmers in Nkayi established an average 0.2 hectares each of fodder crops, including velvet bean, sunn hemp, cacti, and mulberry trees.

Cleophas Zololo Moyo is one such farmer. He joined the program through a feedlot venture last year with a herd of nine cattle. After participating in the trainings, Moyo planted velvet bean, sunn hemp, and a 100 mulberry tree nursery, all of which will be used to feed his current herd of 12 cattle.

In comparison to other field crops that performed poorly, Moyo has already started harvesting herbage from his fodder crops. He expects to yield 600 kilograms of herbage from his plot. Moyo attributes his success to the trainings and technical assistance received from the program on good agricultural practices in fodder production.

"All the money that I have been using on a yearly basis to buy commercial stock feed I will now invest in livestock to increase my herd, since I now have a cheap reliable source of supplementary feed," said Moyo.

Moyo also hosted a well-attended fodder field day showcasing his good fodder crops to other livestock farmers and various stakeholders. The event was attended by 102 people including government representatives, local authority leadership, traditional leaders, non-governmental organization representatives, private sector stakeholders, and farmers. The field day provided a platform for other farmers to learn the importance of fodder production in the face of climate change.

The performance of Moyo's fodder crops has proven to fellow farmers that fodder production is viable in Nkayi.

Direct Marketing Doubles Farmer Income



Photo by Fintrac Inc.

Thinkmore Sithole stands with his newly acquired heifers. The animals were purchased thanks to his increased earnings from the program-facilitated direct marketing initiative.

"I am grateful to the Feed the Future Zimbabwe Livestock Development program for leading me directly to the market. It is now my responsibility to open the eyes of fellow farmers."

Thinkmore Sithole,
Smallholder beef farmer

Middlemen mainly dominate smallholder livestock marketing in Chipinge, Manicaland, and they typically offer paltry prices to desperate smallholder farmers seeking to cull their herds as a result of the El Niño-induced drought. To mitigate this scenario, the Feed the Future Zimbabwe Livestock Development program introduced direct marketing of cattle off the rangeland to destock and maintain manageable herd sizes.

Thinkmore Sithole is one farmer who has benefited from the knowledge acquired through program trainings and the linkage to processors. Previously, he had contemplated selling his four oxen at a mere \$1,000. However, after learning to use replenished rangelands to improve the body condition scores of the animals, he was able to avoid the cost of supplementary feed required for pen fattening.

Sithole and 28 other farmers were then linked by the program to Koala Park and Montana Carswell Meats in Masvingo. As a result of program support, the farmers generated more than \$16,000 in total sales from 48 animals. Of the animals sold, 39 graded out as economy, and the average price paid per animal was \$343. Koala Park paid \$2.30 per kilogram for economy while Montana Carswell Meats paid \$2.10.

Sithole's income from the sale of his four oxen was \$2,086, far greater than the amount offered by local buyers. With the money earned, he invested \$1,000 in five breeding heifers, and used \$500 on home improvement purchases.

Using advice from the Feed the Future Zimbabwe Livestock Development program trainings on supplementary feeding and feed formulations, Sithole also purchased survival meal to maintain his breeding heifers. He plans to incorporate molasses, cacti, and crop residues into his feed formulation, as taught by the program, to ensure good health for his animals.

Sithole now owns two cows, two weaners, and five heifers which will potentially allow him to increase his herd size by six calves annually. Going forward, if 50 percent of the calves born are male, Sithole will be able to sell at least three cattle every year while still growing his herd size and enabling him to operate on a commercial scale to generate greater income.

Drought mitigation strategies such as direct marketing and use of drought-tolerant fodder crops are an important component to achieving the overall goal of increasing incomes and food security for 3,000 beef and 2,000 dairy smallholder farmers by 2020 through low to no-cost interventions.

Nutrition and WASH key to livestock development



Photo by Fintrac Inc.

A thriving mulberry plant at Mubonesi's homestead. The plant is encamped with thorny bushes during its early stages to protect it from livestock.

"This [fly trap] technology protects my family from diseases such as typhoid, cholera, and diarrhea,"

Ledson Mubonesi,
Smallholder beef farmer

A nutrition-sensitive approach to agriculture that considers water, sanitation, and hygiene (WASH) lies at the heart of the Feed the Future Zimbabwe Livestock Development program's strategy to increase the income and food security of 3,000 beef and 2,000 dairy smallholder farmers.

By integrating nutrition and WASH issues with livestock technical trainings, the program seeks to improve the health and hygiene standards of beneficiary farmers in their daily lifestyles and livestock production.

In Chipinge, Manicaland, smallholder beef farmer Ledson Mubonesi started his own garden of nutritious fruits and vegetables to provide micronutrients and fiber for his household and livestock. With training and technical assistance from the program, he has established drought-tolerant cacti, mulberries, pineapples, onions, and leafy vegetables. As a lead farmer, Mubonesi's garden serves as a center of excellence for 15 surrounding farmers in his area.

For his household's protein source, Mubonesi currently rears 38 pigeons, 25 goats, 10 chickens, and four ducks. Having learned about the effects of malnutrition and stunting, Mubonesi began milking his goats to provide his family a source of Vitamin A, calcium, and protein. He also yields 2 liters of milk from his cow for his household's daily consumption.

Additionally, through the WASH trainings, Mubonesi has created three simple environmentally-friendly fly traps using empty 2-liter containers and offals from his small livestock.

"This technology protects my family from diseases such as typhoid, cholera, and diarrhea," he said.

To further integrate improved WASH practices at his homestead, Mubonesi also adopted the tippy-tap hand washing point at his toilet to encourage people to wash their hands after toilet use. The water is mixed with a detergent.

During the quarter, the Feed the Future Zimbabwe Livestock Development program trained 95 farmers on child health, 298 farmers on nutrition, and 270 farmers on water, sanitation, and hygiene across all areas of implementation.

ANNEX 2: ILLUSTRATIVE INDICATORS

Indicator	Indicator Source	Baseline	Disaggregate	FY2016 Target	Quarter 3	Total	Unit	
PROGRAM GOAL: SUSTAINABLY REDUCE POVERTY AND IMPROVE FOOD SECURITY AND NUTRITION FOR RURAL HOUSEHOLDS IN ZIMBABWE								
1	Number of rural households benefiting directly from USG interventions	FTF 4.5.2(13)	0	Total	1,250	672	1,400	Households (New and Continuing)
			0	Beef	750	490	968	
			0	Dairy	500	182	432	
2	Estimated number and percentage of FTF beneficiaries holding 5 hectares or less of arable land or equivalent units of livestock (Smallholders)	FTF (01)	91		90	97	97	Percent
3	Prevalence of poverty: Percent of people living on less than \$1.25/day [†]	LD 10	76	Overall	62	N/A*	N/A*	Percent
			84	Beef	70	N/A*	N/A*	
			60	Dairy	50	N/A*	N/A*	
4	Mean percent shortfall relative to the \$1.25 poverty line	LD 11	45		40	N/A*	N/A*	Percent
IR 1: Increased sustainable agricultural production, productivity, and incomes								
5	Average agricultural income per household	LD 1	237.72	Beef	300	N/A*	N/A*	USD
			415.22	Dairy	650	N/A*	N/A*	
6	Gross margin per animal	FTF 4.5(17)	18.80	Beef	27.00	N/A*	N/A*	USD
			119.49	Dairy	125	N/A*	N/A*	
7	Yield per dairy cow per day	LD 5	2.61		4.30	N/A*	N/A*	Liters/day
Sub-IR 1.1: Increased adoption of GAPS and management practices								
8	Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	FTF 4.5.2(5)	0		715	N/A*	N/A*	Farmers
Sub-IR 1.2: Expanded market access and value chain integration								
9	Percent of beneficiaries selling at least 80 percent of their milk to formal collection centers	LD 6	39		50	37	37	Percent
10	Percent of beneficiaries selling at least one head of beef cattle annually to formal buyers	LD 7	26	Percentage beneficiaries	35	N/A*	N/A*	Percent

Indicator		Indicator Source	Baseline	Disaggregate	FY2016 Target	Quarter 3	Total	Unit
				selling cattle				
			41	Percentage beneficiaries selling cattle to formal markets	50	N/A*	N/A*	
11	Value of incremental sales (collected at farm-level) attributed to Feed the Future implementation	FTF 4.5.2(23)	0.10	Total (Actual Sales)	0.31	N/A*	N/A*	USD Millions
			0.03	Beef Cattle (live) (Actual Sales)	0.03	N/A*	N/A*	
			0.07	Dairy (Actual Sales)	0.28	N/A*	N/A*	
Sub-IR 1.3: Improved NRM								
12	Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	FTF 4.5.2(7)	0	Total	1,440	948	1,596	Unique Individuals
			0	Male	864	558	825	
			0	Female	576	390	771	
Sub-IR 1.4: Increased access to credit and finance								
13	Value of Agricultural and Rural Loans	FTF 4.5.2(29)	0		0.05	0.0005	0.05	USD Millions
14	Number of MSMEs, including farmers, receiving USG assistance to access loans	FTF 4.5.2(30)	0		170	1	195	MSMEs
15	Percent of beneficiaries borrowing at least once to finance purchase of livestock or other capital investment	LD 8	0		0	0.1	0.1	Percent
IR 2: Improved nutrition and hygiene practices and behaviors (Improved nutrition status)								
16	Women's dietary diversity: Mean number of food groups consumed by women of reproductive age	FTF 3.1.9.1(2)	2.5		2.8	N/A*	N/A*	Groups
17	Prevalence of households with moderate or severe hunger	LD12	39.2		39	38	38	Percent
Sub-IR 2.1: Improved utilization of nutritious foods								
18	Percent of households that consistently consume at least 5 of 9 food groups	LD 2	7		12	13	13	Percent
19	Prevalence of children 6-23 months receiving a	LD 14	1		10	4	4	Percent

Indicator	Indicator Source	Baseline	Disaggregate	FY2016 Target	Quarter 3	Total	Unit
	minimum acceptable diet						
20	Number of people trained in child health and nutrition through USG-supported programs	FTF 3.1.9(1)	0		2,125	393	393 Unique Individuals
Sub-IR 2.2: Improved hygiene behaviors							
21	Percent of households that consistently practice at least 4 out of 6 good hygiene practices	LD 3	13		20	32	32 Percent
Sub-IR 2.3: Increased prevalence of exclusive breastfeeding							
22	Prevalence of exclusive breastfeeding of children under six months of age	LD13	72		72	74	74 Percent
IR 3: Increased capacity of local implementing organizations							
Sub-IR 3.1: Increased effectiveness of agricultural programs by local organizations							
23	Number of food security private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and CBOs receiving USG assistance	FTF 4.5.2(11)	0		58	34	34 Organizations/Associations
24	Number of public-private partnerships formed as a result of Feed the Future assistance	FTF 4.5.2(12)	0		15	5	5 PPPs
Sub-IR 3.2: Increased adoption of best organizational practices							
25	Average change in score on organizational assessment scorecard administered pre- and post-assistance	LD 4	0		5	N/A*	N/A* Percent
Sub-IR 3.3: Increased private sector investment in agriculture							
26	Value of new private sector investment in the agriculture sector or food chain leveraged by Feed the Future implementation	FTF 4.5.2(38)	0		20,000	0	500 USD
Additional objectives							
27	GNDR3: Percent of female program beneficiaries in relevant leadership positions	GNDR 3	36		40	32	32 Percent
28	Percent of beneficiaries who have adopted the following business practices	LD 9					Percent
	Develop a budget for each farm enterprise		0		20	21	
	Track income and expenses in a record book		0		20	19	19

Indicator	Indicator Source	Baseline	Disaggregate	FY2016 Target	Quarter 3	Total	Unit
Calculate profit/loss for each major farm enterprise		0		20	15	15	

[†]Figures indicate the proportion of beneficiary households living in poverty based on the beneficiary sample for each year, with the end target in Year 5 being 40 percent for beef and 30 percent for dairy households.

*Indicator is reported on annually

ANNEX 3: LIST OF BUYERS

The companies listed in the table below have all been engaged and have expressed an interest to transact with Feed the Future Zimbabwe Livestock Development program beneficiaries in the target districts.

Company	Products	Contact and Title	Tel No.	Email
Agri Auctions	Beef cattle	Tony Oately	0772316470	ajoately@mweb.co.zw
CC Sales	Beef cattle	Richard Wakefield	0712601061	rich@ccsalesbyo.co.zw
Dendairy	Milk	Denford Matiringe (Bulawayo Milk Depot)	0774306108	dendairy@gmail.com
Kershelmar	Milk	Mr Dhlodhlo (Procurement Manager)	0772252734	keshelmar@kershelmarbyo.co.zw
Koala Park Abattoir Chiredzi	Beef Cattle	Kobus Raath	0773 477751 0784844000	raathkoalapark@gmail.com
Heads and Hooves	Beef cattle	Chris Androliakos	0779748230 0712211856	Chris Androliakos@yahoo.com
Montana Carswell Meats Gokwe & Redcliff	Beef cattle	Arthur Rex	0771247612 059-2855	arthur@mcmeats.co.zw
Montana Carswell Meats Masvingo	Beef cattle	Rod Fenell Graig Green	0773982898 0772816069	
Bulawayo Abattoirs	Beef cattle	SI Brenner	0713433645 263 9 400715/403689	sbrenner@zol.co.zw
Sabie Meats	Beef cattle & stock feed	Neil van der Merwe	0772-214116	neil@sabiemeats.com

ANNEX 4: LIST OF INPUT SUPPLIERS

The companies listed in the table below have all been engaged and have expressed an interest to transact with Feed the Future Zimbabwe Livestock Development beneficiaries in the target districts.

Company	Products	Contact and Title	Tel No.	Email
Sabie Meats	Beef cattle & stock feed	Neil van der Merwe	0772214116	neil@sabiemeats.com
Luipaardsvlei Brahmans	Brahman bulls	Dawie Joubert	0774334554	zfjoub@bsatt.com
Ecomark & Coopers	Veterinary supplies	Dr. Morgan Matingo Dr. Oswin Choga	0772282803 0773724088	morganm@ecomed.co.zw oswinc@ecomed.co.zw
Fivet	Veterinary supplies	Dr. Bruce Fivaz John Magasi (sales)	0772189802 0773582239	bruce@vetprod.com john@vetprod.com
Lamour Dairy Products	Milk, dairy animals	Gareth Barry	0772260799	g.barry@zol.co.zw
Klein Karoo	Maize, pasture, and vegetable seed	Beauty Magiya	0772339326	beuty@seedmarketing.co.zw
Quest Financial Services	Finance	James Msipa	0772573276	jmsipa@quest-fin.com
UNTU Financial Services	Finance	Clive Msipa	0774164390 04332968/308746	clive.msipa@untu-capital.com
Virl Microfinance	Finance	Virginia Sibanda	0774391252	virginia@virlmicrofinance.co.zw
Agrifoods	Stock feeds	Luke Mutemeri	0712 632 333	lukem@agrifoods.co.zw
National Foods	Stock feed	Willard Mukondiwa	0772148713 0733400112	willardmu@natfood.co.zw
Cottco	Cotton Motes	Mr. Mutaauranwa	0773715297	jmutauranwa@cottco.co.zw