

**Land O' Lakes, inc. Zambia
Title II Development Activity Program
TA No. FFP-A-00-04-00001-00**

FY 2004 RESULTS REPORT

Submitted by

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1.0 RESULTS REPORT

1.1 Annual Results

Land O' Lakes, Inc. /Zambia is implementing a PL480 Title II Development Assistance Program (DAP) with the aim of contributing to the reduction of food insecurity among rural communities in Zambia through dairy production and a warehouse receipt component for non-perishable crops. Since the DAP is only in its first year, and full proceeds from monetization were only received during August, 2004, it was not possible to commence full implementation and monitor results. However, during this period, Land O'Lakes, Inc./Zambia was implementing its Zambia Dairy Enterprise Initiative (ZDEI), which laid the technical foundation for the Title II program. A brief review of the results of this program is provided below.

1.1.1 Zambia Dairy Enterprise Initiative

The following results refer to the purposes, objectives and activities of the ZDEI, which closed out in September 2004, after a 3 year period.

The main program objective of the ZDEI was to contribute to USAID's SO1 "*Increased Sustainable Rural Incomes*", by focusing on 3 key technical areas of dairy development:

- **Raw Product Supply Improvement** - Increase smallholder raw milk quality and quantity.
- **Product Development/Improvement and Quality Assurance Systems** - Support for dairy processors to improve their output and quality, including the development of new, higher-value products
- **Industry-Led Promotion and Marketing Campaign** - Promote and support the dairy industry to develop sustainable marketing tools that can be used to capture consumer attention.

Raw Product Supply Improvement

The ZDEI, through the raw product supply improvement component, assisted dairy producers to improve milk yields by improving animal nutrition. Efforts focused on improving forages and storage technologies and expanding the availability of feed and feed supplements in the local markets around milk collection centers (MCCs). Increased smallholder raw milk quality and quantity was the goal around which these efforts were directed. Focus was on increasing the capacities of the MCCs it helped to create to deliver additional services needed by smallholder dairy producers to achieve greater efficiency and market power.

MCCs

The objective of this technical area was to strengthen farm to market infrastructure by clustering producers for the efficient delivery of technical assistance and training so that

these producers could directly participate in the dairy market through the development of collection linkages through a demand driven process. This was intended to improve access to lower cost inputs and improve cost efficiencies through group marketing efforts. Specifically the program was to establish Five (5) milk collection centers including the procurement, storage and distribution of cooling tanks and other equipment through market oriented loans.

Two MCCs are being established. The value of raw milk marketed by MCCs for the period under review was US\$563,842 compared to US\$214,240 the previous year. This value includes the value of raw milk marketed by milk collection centers established the previous year and have continued to receive support under the Title II program. 132,000US\$ worth of dairy equipment has been procured.

Training of Smallholder farmers in Dairy Production

The program also sought to provide training to dairy producer groups and associations in dairy management and business skills; in the operation and business management of MCCs; and in raw milk quality control, testing, and handling.

The target of 200 new farmers trained under the GDA was far exceeded by 248. 93 new farmers were recorded as delivering milk to the ten (10) milk collection centres set up in the last year. The number of new farmers delivering to new centers was not met as collection centers were still being established by the program due to the termination of the ZATAC Limited's contract and late commencement of program activities related to establishment of the 5 new centers set for the program extension.

108 farmers received training in technical production skills while 10 farmers were provided the opportunity to visit Kenya to widen their knowledge of dairy production in the region.

Start up meetings were held with farmers at Nteme, Pelusa, and Pemba. Two of these sites are currently constructing Milk Collection centres and delivering milk to Magoye and Monze respectively.

Land O' lakes, Inc. observes that many constraining factors that affect dairy productivity at Farm level are as a result of limited extension service. Working with the Golden valley Agricultural research Trust, the program has provided an opportunity to overcome this constraint to at least three milk collection centres over the last one year.

Strengthening of Producer groups

Another objective was to develop a mechanism to link groups of small farmers with agribusinesses for technology transfer, delivery of services and quality improvements through price incentives. During the period under review, the total membership base increased by 448, bringing the total membership since inception of the program to 1,234. Of these, 1,127 were active members in that they participated in all programs of MCCs including training sessions and meetings.

Milk sales to MCCs

The participating farmers earned, on average, US\$ 120 more than they earned in the previous year as a result of program activities.

The total milk collected at the MCCs over the year increased by 1,572,212 liters. This does not include milk consumed at the farm level and quantities sold directly without passing through MCCs. Therefore production by farmers is much higher than is being reported.

Increase in overall producer group milk production and profit margins

Year	Total milk produced	Profit margins from milk sales
October 1, 2002 – September 30 2003	1,197,228 Liters	0.07 US\$
October 1, 2003 – September 30 2004	2,769,440 Liters	0.10 US\$
% Increase	56%	30%

Product Development/Improvement and Quality Assurance Systems

The ZDEI provided assistance to Small and Medium Enterprise (SME) processors in quality improvements and new product development. The primary focus was to assist locally-owned processors to improve their output and quality, including the development of new, higher value products. Various levels of assistance were offered in the areas of: product fortification, product design, business and financial planning, and quality control.

During the period of October 2003 to September 2004, Land O' Lakes provided STTA to processors for product development and improvement, packaging improvement, and improvement in general quality and hygiene standards. The two primary interventions during this period involved two technical visits by experts in processing and product development.

Technical advice was provided to seven processors in various aspects related to product development and quality standards. Two beneficiaries of this assistance (Finta Dairies and Dairy King) have since made significant investments to their plant capacities and product development.

Industry-Led Promotion and Marketing Campaign

Increasing per capita milk consumption in Zambia was a paramount objective of the ZDEI. Accomplishing this objective involved Land O'Lakes assistance to facilitate the formation of a dairy promotion association that would take the lead in promoting Zambian dairy products to target consumer groups; including an educational campaign to specific disadvantaged groups that focuses on the nutritional benefits of milk and dairy products.

Promotional & educational campaigns

Land O'Lakes in partnership with the dairy processors' association enlisted the services of promotional and experiential marketing organizations to conduct regional and national promotional activities to promote the nutritional benefits of consuming milk and dairy products. Activities included media promotions, dairy month campaigns, event sponsored activities and sports sponsorships.

Media Campaign

Strategic media promotional campaigns were initiated to create top of mind awareness of the nutritional benefits of consumption. The promotion involved the airing of electronic ads on radio and T.V highlighting specific nutritional benefits of consuming milk and dairy products. Media selection criteria were based on reach, listener frequency and coverage. Target groups were all consumers countrywide. The media promotions were scheduled to run from December 2003 – Mid January 2004 to capture consumers during peak season and influence the buying patterns of the targeted consumers.

These promotional and marketing campaigns resulted in the improvements in output of targeted dairy processors as illustrated in the table below;

Volume sale output from processors

Processor	Products considered	Daily Processing Capacity	Annual % increase
Parmalat	Fresh milk; Long Life milk; Lacto (sour milk); Butter; Cheese	120,000	0.3
Dairy King	Fresh milk; Lacto (sour milk); drinking yoghurt (yoghurt drink)	1000	16.2
Diamondale	Fresh milk; Lacto (sour milk); Flavoured Milk; Cheese; Butter	10,000	27.9
Kaposhi	Various cheese products	5000	8.5

1.2 Monitoring and Evaluation

1.2.1 Title II Development Assistance Program

While the program did not achieve measurable results, it set the stage for implementation by carrying out the following M&E related activities. Several of these activities were set forth as conditions for TA approval.

1. **Baseline Survey:** The Survey was conducted in the areas of program implementation (*Summary provided as Appendix A*). The Survey sought to provide:
 - a precise understanding of the socio-economic status and degree of vulnerability of potential program participants
 - indicate which sectors of the population should be targeted by the DAP program
 - recommend how often indicators should be measured
 - a set of achievable target values for each indicator based on recommended frequency of data collection.(The final Baseline Survey Report will be submitted to the Office of Food for Peace and USAID/Lusaka by November 15, 2004.)
2. **Food Security Indicators:** On recommendation by FFP that the program should measure its impact on food security, particularly food access, of insecure households,¹ a set of food security impact indicators was developed to measure the program's contribution to the reduction of food insecurity among vulnerable populations. (*Appendix B*)
3. **Performance Management Plan:** A PMP was also developed during the year under review to track the progress that the program would be making toward achieving its set objectives (*Appendix C*). This plan contains the indicators that will measure performance at each level of the program's hierarchy of objectives, their data sources, and the quality of data available and responsibilities for collection and analysis of the data. Some of these indicators will be reported on as part of the IPTT, while others will provide data for management purposes only.
4. **Results Framework:** The program's results framework, which, in line with USAID SO5, was addressing economic growth, was reviewed and has been revised to be more in line with USAID/FFP's Strategic Objective (*Included in PMP, Appendix C*).

1.2.1.1 Indicator Performance Tracking Table:

Based on recommendations from FFP, the IPTT was reviewed to ensure that indicators will measure food security impacts, particularly in the arena of food access, as per those listed within FFP's Proposed FY04-08 at the Strategic Objective level. Indicators were revised to ensure that they are more results-oriented and track the program's progress towards addressing the needs of vulnerable populations².

¹ Addendum to DAP, Page 10

² Addendum to DAP, Page 9

LAND O'LAKES, INC / ZAMBIA INDICATOR PERFORMANCE TRACKING TABLE

Indicator ³	Base-line	FY 1 Target	FY 1 Achieved	FY 1 Achieved vs Target	FY 2 Target *	FY 2 Achieved	FY 2 % Achieved vs Target	FY 3 Target *(Mid-term)	FY 3 Achieved	FY 3 % Achieved vs Target	FY 4 Target *	FY 4 Achieved	FY 4 % Achieved vs Target	FY 5 Target *	FY 5 Achieved	FY 5 % Achieved vs Target	LOA Target	LOA Achieved	
Goal (FFP/SO): Food Insecurity Among Vulnerable Populations reduced																			
G1. Number of months of adequate staple provisions	9 4 Months							10 0 Months										10 6 Months	
G2. Percentage Increase in number of households having at least 3 meals a day	63%							73%										83%	
Strategic Objective: Increase incomes for Smallholder Farmers																			
SO1. Increase in average household income from dairy sales	\$680 per annum per farmer							\$748 per farmer per annum										\$816 per farmer per annum	
SO2. Increase in average household income from warehousing system	0							5%										15%	
Intermediate Result 1 : Increased productivity of smallholder Dairy Farmers																			

³ See Performance Management Plan for details of each Indicator

IR1.1 Percentage Increase in average milk produced by smallholder farmers	2750 liters per annum per farmer				20%			30%			40%			50%			50%	
IR1.2 Percent Increase in average yield of dairy cattle (liters per cow per day)	4 liters				6 Liters			8 Liters			10 Liters			12 Liters			12 Liters	
IR1.3 Number of smallholder farmers owning improved dairy cattle	0				250			250			250			250			1000	
IR1.4 Number of smallholder farmers trained	0				450			450			450			450			1800	
Intermediate Result 2: Improved Productivity of the Dairy Industry																		
IR2.1. Increase in value of milk sold by Milk Collection Centers	(000) 778 US\$							(000) 855 US\$						(000) 930 US\$			(000) 930 US\$	
IR2.2 Percentage Increase in volume of milk used by targeted Processors to produce dairy products	(000) 132.5 liters				10%			20%			25%			30%			30%	

IR2 3 Number of smallholder farmers delivering milk to MCCs	600				850				1100				1350				1600			1600	
IR 2.4 Percentage increase in volume of milk sold by farmers receiving technical assistance	2750 liters per farmer per year				20%				30%				40%				50%			50%	
IR 3: Improved storage of Non-perishable Commodities																					
IR3.2 Increase in commodity receipts used as collateral	0								35%											50%	
IR3 1 Increase in quantity of commodities deposited in certified warehouses	(000) 5 Mt				(000) 50 Mt				(000) 100				(000) 150				(000) 200			(000) 200	
IR3 3 Number of Warehouses certified	4				4				6				8				10			(10)	

**2.0 Land O'Lakes, Inc./ Zambia Development Assistance Program
FY 2004 Expenditure Report**

2.1 FY2004 Expenditure Report

Consolidated Line Items

	Monetization Proceeds		Section 202(e)		CS Cost Share / Local Inputs		TOTAL	
	Approved Budget	Actual Expended	Approved Budget	Actual Expended	Approved Budget	Actual Expended	Approved Budget	Actual Expended
FY 2004								
FY 2004 Opening Balance								
Total Income - new funds	1,750,000	2,146,034	934,552	216,299	528,655	0	3,213,207	2,362,333
Total Income - interest (2)	31,703						31,703	0
Total FY 2004 Income	1,781,703	2,146,034	934,552	216,299	528,655	0	3,244,910	2,362,333
Funds Available in FY 2004	1,781,703	2,146,034	934,552	216,299	528,655	0	3,244,910	2,362,333
Expenses								
Salaries & Fringe	151,135	48,586	133,202	49,665			284,337	98,251
Allowances	30,800	0	63,286	5,434			94,086	5,434
Travel	48,132	12,221	5,921	1,157			54,053	13,378
M&E, Baseline, & Gender Studies	0	0	63,865	61,754			63,865	61,754
Mid-term & Impact Evaluations	0	0	0	0			0	0
Dairy Industry Promotion	10,666	0	0	0			10,666	0
Dairy Processing & Product Improvement	16,513	0	0	0			16,513	0
Dairy Livestock Development	22,333	2,914	0	0			22,333	2,914
Training, Certification and Quality Standards	16,513	4,638	0	0			16,513	4,638
Training - Veterinary & Health	46,667	0	0	0			46,667	0
Media and Promotion	140,000	1,138	0	0			140,000	1,138
Procurement - Office and Vehicle	85,800	77,039	0	0			85,800	77,039
Procurement - Equipment, Livestock, & MCCs	190,000	1,046	0	0			190,000	1,046
Office Costs, Supplies, Audit, & Logistics	53,073	36,004	0	0			53,073	36,004
Subagreements - Recipient Agencies	260,000	0	0	0			260,000	0
Subagreements - Matching Grants	212,917	0	0	0			212,917	0
Other Agriculture and Infrastructure (2) (3)	31,703	0	0	0	528,655		560,358	0
Total Direct Costs	1,316,253	183,586	266,274	118,010	528,655	0	2,111,182	301,595
Indirect Costs	0	0	408,953	98,289			408,953	98,289
FY 2004 Total Expenses	1,316,253	183,586	675,227	216,299	528,655	0	2,520,134	399,884
FY 2004 Closing Balance	465,450	1,962,449	259,325	0	0	0	724,776	1,962,449

(1) Sales proceeds received in US Dollars. Zambian Kwacha expenses converted to US Dollars using a monthly average exchange rate.

(2) Detailed budget did not itemize program expenditures for the anticipated Interest Income.

(3) Detailed budget did not itemize cost share / local input matching costs.

LAND O'LAKES ZAMBIA INC.

DEVELOPMENT ASSISTANCE PROGRAM

BASELINE REPORT SUMMARY

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APPENDIX A

1.0 INTRODUCTION AND OBJECTIVES

1.1 Introduction

Land O'Lakes Inc. in Zambia plans to implement a development program from 2004 to 2008. This program consists of 3 components namely dairy industry development, dairy livestock development and commodity storage and marketing. The program is partly an expansion of existing activities of the Dairy Enterprise Initiative in Zambia and will be implemented in 18 Districts and 6 Provinces in Zambia. These Districts and Provinces are indicated in Table 1.

Table 1: Districts and Provinces to participate in the LOL/ Zambia Development Program

Province	Districts
Central	Kabwe, Chibombo, Mumbwa
Eastern	Chipata, Petauke, Katete
Southern	Choma, Kalomo, Mazabuka, Monze, Kazungula
Copperbelt	Luanshya, Kitwe, Chingola
Western	Mongu, Kaoma
Lusaka Province	Kafue, Chongwe

In conformity with stated priority areas for Title II funding (USAID, 2004) a major objective of the program is to improve household food security among vulnerable populations in Zambia. This will be achieved through increased household income which will enable better access to food.

As an input into a Monitoring and Evaluation System for the program, a set of both monitoring indicators for the 3 components of the program and program food security impact indicators were initially developed. Two food security impact indicators were identified, are contained in an earlier paper (Chuzu, 2004, *Appendix B*) and are: a) months of adequate staple provisioning and b) increase in proportion of households eating at least 3 meals a day. Apart from these impact indicators 14 monitoring indicators were identified for the 3 program components. Monitoring indicators are contained in the Indicator Performance Tracking Table, IPTT (*See Results Report 1.2.1.1, p. 7*).

In order to determine the starting level of identified indicators against which progress can be measured in future, a baseline survey was conducted in 12

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Districts and 8 sites in Zambia in September 2004. This report presents a summary of initial findings of the baseline survey. The final baseline survey report will be submitted to USAID/Lusaka and USAID/Food for Peace in Washington, DC by November 15, 2004.

A. 1.2 Objectives of the Survey

The overall objectives of the baseline survey were threefold:

- To strengthen the Land O'Lakes Development Assistance Program Monitoring and Evaluation plan such that it better reflects the program impact on household food security status of program beneficiaries.
- To provide a more precise definition and understanding of the socio-economic status and vulnerability of program participants; and
- To provide a foundation for the design of a reporting system between implementing agencies and LOL/ Zambia and between LOL/Zambia and AID/DCHA/FFP

Specifically, the study aimed at defining the participants to be targeted by the project and to establish baseline values for monitoring indicators and food security impact indicators.

2.0 METHODOLOGY

The overall methodology was two-pronged and consisted of a formal survey and a participatory rural appraisal.

Quantitative data was collected in a formal survey using a questionnaire. Areas of inquiry in the questionnaire generally aimed at establishing the starting position for the identified indicators relating to the three program components as well as that for the two food security impact indicators. They included assessment of food access throughout the year, access to productive resources including land water and labor, income sources, aspects of livestock and dairy production, milk consumption and sales and level of awareness about the crop warehouse system.

Some questions included in the questionnaire were indicative of the fact that food security might not necessarily result in spite of anticipated income increase because of other related reasons. For example, even with income increase, income control by predominantly men could preclude improvement in the quantity and quality of food consumed. Hence the question about who controls income from various livelihood activities in the household is relevant. Another example is that where physical access to food is difficult, increase in incomes could do little to improve food access. Hence the inquiry about whether staple foods are available for purchase throughout the year.

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Alongside administration of a formal questionnaire, a participatory rural appraisal was conducted in each of the surveyed areas. At least one and at most two PRA exercises were conducted in each surveyed district. The PRAs aimed at complementing the survey questionnaire with more qualitative information. A primary aim of the PRA was to identify vulnerable groups within the communities and the reasons for perceived vulnerability in order to inform the process of targeting for program activities.

Methods employed for the PRA were focus group discussions as well as general group discussions. Group discussions including men and women were used to generate community perceptions about an adequate diet, rank wealth in the community and to outline the labor calendar while the food calendar was pursued with women only focus groups. There was a variation in the way that income control issues were discussed. In the first districts, very susceptible data were obtained when discussing with both men and women together. As a result this approach was changed. Different results were obtained when discussing with the two groups separately. Results from separate groups of men and women seemed to be more reliable than those obtained from the combined group.

2.1 Sampling

As shown in table 1, 18 districts in 6 provinces constitute the sampling universe for the baseline survey. Not all of these districts could be covered due to time and money constraints. Two criteria were used to select 12 districts for survey. A primary consideration in selecting districts for survey was that all agro-ecological zones found in the 18 Districts should be represented. For most rural populations, agro-ecology is a major determinant of the pattern of livelihoods, and socio-economic opportunities and constraints. Districts were first classified into the relevant agro-ecological zones.

Secondly, two districts were selected randomly from each province. The reason for including this geographical consideration is that geo-political factors often impact on vulnerability status in various forms. Some provinces may have better infrastructure and health facilities etc., than others, for example. The World Food Program has in the past performed its vulnerability assessment based on district level data. Some variables used to calculate vulnerability scores are percent population underweight, population within 12 km of a road, months of food aid and deviation (from a nine year cereal production average, cereals include maize, millet sorghum, rice and wheat) in per capita cereal production (Caldwell, 1993).

Given the first consideration that all agro-ecological zones in the 18 universe districts needed to be represented, this implies that where a province contained more than one agro-ecological zone, the districts first had to be grouped under

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the various zones and random selection from each zone made. Except for Southern Province each of the other 5 provinces contained at most two agro-ecological zones. In Southern Province Kazungula District was classified separately from other parts of the province because of somewhat different agro-ecology. Table 2 shows the districts selected for the survey and their agro-ecological location.

Table 2: Districts Selected for Survey by Agro-ecological Zone

Province	Selected District	Agro-ecological Zone
Central	Kabwe	Central, Southern and Eastern Plateaus
	Mumbwa	Central, Southern and Eastern Plateaus
Lusaka	Kafue	Luangwa-Zambezi Rift Valley; Central, Southern and Eastern Plateaus
	Chongwe	Luangwa-Zambezi Rift Valley; Central, Southern and Eastern Plateaus
Eastern	Petauke/Chipata	Luangwa-Zambezi Rift Valley; Central, Southern and Eastern Plateaus
	Chipata	Central, Southern and Eastern Plateaus
Copperbelt	Luanshya/ Chingola	Northern High Rainfall Zone
	Chingola	Northern High Rainfall Zone
Western	Kaoma/ Mongu	Western Semi-Arid Plains
	Mongu	Western Semi-Arid Plains
Southern	Monze/ Kalomo	Luangwa-Zambezi Rift Valley; Central, Southern and Eastern Plateaus
Southern	Kazungula	Central, Southern and Eastern Plateaus; Western Semi-Arid Plains

Sample Size

The number of households to be enumerated per district was calculated according to sampling guidelines by Magnani (1997). In the indicator paper (Chuzu, 2004) 2 food security impact indicators were proposed namely the

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number of months of adequate staple provisioning and increase in the proportion of households eating at least 3 meals a day. In both cases, there is progress when the proportion of households exhibiting the desired trait, i.e. consuming at least 3 meals a day or with increased months of adequate food provisioning, increases. The number of months of adequate staple provisioning however can also be measured as a mean across a population or sample. In this case an increase in the mean of months of adequate provisioning would signify progress.

The sampling guide provides 2 formulas with regard to sample size for indicators expressed as means and those expressed as proportions. For the baseline survey, the formula for indicators expressed as proportions was used because data that are required to substitute in the alternative formula were not readily available. The formula to calculate sample size for indicators expressed as proportions is given as:

$$n = D [(Z_{\alpha} + Z_{\beta})^2 * (P_1(1-P_1) + P_2(1-P_2)) / (P_2-P_1)^2]$$

Where:

- n = minimum sample size per survey round or comparison group
- D = design effect, a default value of 2 is assumed
- P₁ = the estimated level of an indicator measured as a proportion at the time of the first survey
- P₂ = expected level at some future date
- Z_α = the Z-score corresponding to the confidence level with which it is desired to be able to conclude that an observed change of size (P₂-P₁) would not have occurred by chance, α is the level of statistical significance
- Z_β = the Z-score corresponding to the degree of confidence with which it is desired to be certain of detecting a change of size (P₂-P₁) if one actually occurred, β is the statistical power

The estimated baseline levels of both impact indicators were unknown prior to the survey and have been assumed as 0.50. The expected level of the indicators 2 years after the onset of the program and at the mid-term evaluation has been estimated at a minimum of 15%. α and β have been set at the minimum recommended levels of 0.95 and 0.80. Accompanying Z-scores for these levels are 1.645 and .840. Substituting these values into the formula, the total number of households to be sampled works out as follows:

$$n = 2 [(1.645 + 0.840)^2 * (0.5(0.5) + (.65) (.35)) / (.65-.50)^2]$$

= 262 (264) households

Adding 10% contingency to this number to compensate for non-responses we get 262 * 1.10 = 288 households. Thus, it was planned to survey 288

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households at each survey site or given the 8 survey sites, a total of 2,304 households. In practice, a total of 2,239 households were interviewed. A breakdown of these households per site is given in table 3.

Table 3: Number of Households Surveyed by Province and Site

Province	Site	No of Households Surveyed
Lusaka	Chongwe	286
Eastern	Chipata/ Petauke	299
Central	Kabwe	286
	Mumbwa	255
Southern	Kalomo/ Monze	287
	Kazungula	241
Western	Kaoma/ Mongu	301
Copperbelt	Luanshya/ Chingola	284
Total		2,239

2.2 Selecting Households for Interview

To select the households for interview, a multi-stage cluster sampling procedure was employed. First, all the wards within an estimate 50 kilometer radius of the district center/s were listed and grouped into four clusters according to whether they were located in the north, south, east or west of the district center. In various meetings prior to the survey, it was agreed that 50 kilometer radius was what could reasonably be expected to be covered by the program by the time of the mid-term review. It is planned to expand further out during the later stages of the program. Urban wards were left out of the listing.

From the listing of wards, one ward was randomly selected for enumeration from each cluster of wards. Thus in those sites with one District, 4 wards were selected for enumeration while 8 wards were selected in 2-District sites.

After listing or obtaining a listing of all villages in the selected wards, 3 villages were randomly selected from each ward, resulting in 12 selected villages per site in one-District sites and 24 villages in 2-District sites. From each of the selected villages, it was planned to interview 24 randomly selected households per village in one-District sites and 12 households per village in 2-District sites. Where available, village household listings were used to effect random household selection. Where no household listings existed, the random walk method was used to select households for interview.

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Enumeration teams consisting 5 enumerators and a supervisor per site left for field work on September 13, 2004. Field work was completed on Sunday 26 September, 2004.

3.0 INITIAL FINDINGS

3.1 Staple Food Adequacy

One impact indicator to measure the Land O'Lakes Development Activity Program contribution to household food security is the number of months a household has (in)adequate staples. A decline in the number of months with inadequate staples would signify progress. First, households were asked the type of staples that they consumed in the past 12 months. Table 4 shows the four most important staples in each site.

Table 4: Most Important Staples Consumed in Past 12 Months by Site

Top 4 Staples	Number of Households Consuming	Proportion in Sub-sample Consuming (%)
<u>Chipata/ Petauke (299)</u>		
Maize	291	97
Sweet potatoes	108	36
Cassava	95	32
Rice	50	17
<u>Chongwe (286)</u>		
Maize	268	94
Sweet potatoes	195	68
Cassava	58	20
Rice	29	10
<u>Mongu/ Kaoma (301)</u>		
Maize	291	97
Cassava	258	86
Rice	134	45
Sweet potatoes	116	39
<u>Kalomo/ Monze (287)</u>		
Maize	248	86

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Top 4 Staples	Number of Households Consuming	Proportion in Sub-sample Consuming (%)
Sweet potatoes	122	43
Sorghum	47	16
Cassava	45	16
<u>Kazungula (241)</u>		
Maize	216	90
Sorghum	95	39
Millet	73	30
Cassava	41	17
<u>Mumbwa (255)</u>		
Maize	242	95
Sweet potatoes	103	40
Cassava	70	27
Sorghum	45	18
<u>Kabwe (286)</u>		
Maize	259	91
Sweet potatoes	158	55
Cassava	91	32
Rice	18	6
<u>Luanshya/Chingola (284)</u>		
Maize	274	96
Cassava	136	48
Sweet potatoes	109	38
Sorghum	26	9

It is evident in table 4 that maize is an important staple in all sites. Except at Monze/Kalomo site where 86 percent of the sub-sample reported having consumed maize in the past 12 months, over 90 percent of the households at other sites had consumed maize. Cassava was important in Mongu/Kaoma site and consumption of the four top staples was more balanced than at other sites where consumption was concentrated on one or two staples. Sorghum was an important staple in Kazungula District and sweet potatoes in Chongwe District.

3.2 Most Important Source of Staple Foods

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The source of most staples consumed was predominantly own production, to varying degrees for different staples. For maize, between 84 and 99 percent of the households in the site sub-samples reported own production as the most important source staples. The proportions were lowest in Kazungula and Kalomo/ Monze Districts where 12 percent each of the households obtained maize from purchases.

In Mongu/ Kaoma Districts where cassava is an important staple, 96 percent of the households sourced it from own production while in Chipata/ Petauke, Kalomo/ Monze, Kazungula and Kabwe Districts between 21 and 34 percent of the households purchased their cassava.

Eighty four percent of those who consume sorghum in Kazungula District produce it. In Kalomo/ Monze Districts 47 percent of those that reported consuming sorghum obtained it as a gift, probably from a relief program.

Sweet potatoes were obtained mostly from own production except in Kazungula District where 48 percent of those consuming them purchased sweet potatoes. In any case sweet potatoes are not an important staple in this District.

3.3 Duration of Staples from Own Production

Households were asked if their own production of various staples lasted up to the next harvest. Table 5 indicates the responses for the four most important staples at each site. Proportions indicated are out of those that reported consuming the particular staple at each site.

Table 5: Proportion (%) of Households with harvests that don't last till next season

	Maize	Sweet Potatoes	Cassava	Rice	Sorghum	Millet
Chipata/ Petauke	74	88	82	96		
Chongwe	60	96	58	100		
Mongu/ Kaoma	83	84	38	90		
Kalomo/ Monze	73	94	79		96	
Kazungula	81		73		88	95
Mumbwa	62	91	82		80	
Kabwe	30	62	45	71		
Luanshya/ Chingola	31	37	20		50	
Sample Total	61	80	50	90	80	80

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Between 30 and 83 percent of those consuming maize in various sites reported running out of maize before the next harvest. The problem was especially serious in Mongu/ Kaoma, Kazungula, Chipata/ Petauke and Monze/ Kalomo Districts where about three quarters and above of all households reportedly normally run out of maize before the next harvest.

It is not surprising that a majority of the households reported running out of sweet potatoes before the next harvest. Sweet potatoes are usually grown on small plots and tend to be seasonal as they are rarely stored.

Apart from maize, cassava is the only other one that was among the four most important staples at all sites. Cassava has the potential to supplement maize when it runs out because it can be stored in the ground and can be harvested when required. In areas where it is preferred, cassava can be used to prepare nshima either by itself or as an additive to maize meal. However, for various households cassava can only mitigate maize shortages if in those households cassava can last up to the next season or if the combination of maize and cassava can tide the household through to the next season. An assessment of quantities required for consumption during the season would be needed to make such a judgment.

The Luanshya/ Chingola site had the lowest proportion of households running out of the four identified main staples as compared to both other sites and the total sample.

When asked about how they filled the staple food gaps from own production, most households (over 50%) at various sites indicated that they purchased food. For Chongwe, Kalomo/Monze, and Kabwe Districts where less than 50 Percent of the households relied on purchases, the most important other ways that households filled food gaps was through barter and gift donation (probably relief).

One way to infer on the changes in household income over time is to study changes in the diet over time. As income rises, households will likely substitute inferior food with other foods. Survey respondents were asked if their households were currently consuming some staples that they did not consume 2 years prior to the study. Additionally, they were asked if they had stopped consuming some staples that they were consuming 2 years prior to the baseline study. Table 6 shows the number and proportion of households reporting on both aspects.

Table 6: Changes in Staple Consumption Over 2 Years

	Households that are consuming new staples	Households that have dropped old staples
--	--	---

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Site	Number	Proportion in sub-sample	Number	Proportion in sub-sample
Chipata/ Petauke	12	4	19	6
Chongwe	9	3	11	4
Mongu/ Kaoma	21	7	25	8
Kalomo/Monze	48	17	53	18
Kazungula	72	30	75	31
Mumbwa	38	15	43	17
Kabwe	12	5	16	6
Luanshya/ Chingola	19	7	25	9

At 3 sites, Kalomo/ Monze, Kazungula and Mumbwa, at least 15 percent of the sub-samples reported consuming new staples they had not been consuming prior to the survey. At Kalomo/ Monze Districts 90 percent of those reporting consumption of new crops had consumed either sorghum or wheat. These staples were most likely accessed as relief food as CARE International was involved in distributing wheat or sorghum for relief. At Kazungula about 80 percent of those that reported consuming new staples in the previous 2 years were consuming rice, cassava, and wheat. Wheat may also have been a relief food while cassava has been recently introduced for cultivation in some parts of the country notably by Program Against Malnutrition (PAM).

Most of those reporting having dropped certain staples in the past 2 years in Kalomo/ Monze had dropped either wheat or sorghum. In Kazungula District, they had dropped cassava, rice or wheat. In Mumbwa District, several crops reportedly had dropped out and none of these crops were predominant. They included rice, cassava, sweet potatoes, wheat and sorghum.

3.5 Perception of an Adequate Diet

During the participatory rural appraisal, communities were asked what they thought constituted an adequate diet. A response that featured prominently is that a household that eats well should have food throughout the year. Further, at all sites communities indicated that an adequate diet consisted of at least 3 meals, a morning meal and 2 main meals, one at or about midday and one in the evening. The contents of the meals varied according to site and what foods were available by site but the main meal consisted of Nshima and relish accompaniment. Nshima was made from whatever staples were local to the area.

PRA findings tally well with survey findings. In a normal period, not a hungry season, all sites except Luanshya/ Chingola reported consuming at least 3 meals

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a day (average=2.88 to 3.80). The Luanshya /Chingola average was 2.45. It is also interesting to note that when the data was disaggregated by gender of head of household, female-headed households reported a higher average number of meals consumed in a normal season than their male counterparts in Chipata/ Petauke, Chongwe, Kazungula and Luanshya/ Chingola sites.

Of the main meals reported at all sites, on average about two (1.91) to three (2.63) meals were considered to be main meals. The highest average of main meals per day and the only average higher than 2.50 was found in Monze/ Kalomo site where on average 3 meals (2.63) were considered as main meals.

3.6 Regularity of Meal Consumption Impact Indicator

Table 7 shows sample and site average totals and main meals per day by month, assuming that an adequate diet consists of 3 meals per day, 2 of them being main meals. Main meals per day are indicated in brackets. According to this definition, Chipata/ Petauke, Mongu/ Kaoma and Luanshya/ Chingola sites fell below the average of 3 total meals in all months. At the other sites, there were between 4 and 6 months where the average was above 3 meals. These respondents tended to consume an average of at least 3 meals per day during months immediately following the harvest, which begins some time in March/ April and continuing on to August September or October. Survey findings corroborate those from the PRA that December, January and February are difficult months as concerns food availability.

APPENDIX A**Table 7: Sample and Site Average Total Number of Meals and Main Meals per Day, by Month**

	Total Sample (N=2239)	Chipata/ Petauke (n=299)	Chongwe (n=286)	Mongu/ Kaoma (n=301)	Kalomo/ Monze (n=287)	Kazungula (n=241)	Mumbwa (n=255)	Kabwe (n=286)	Luanshya/ Chingola (n=284)
2003									
August		2.73 (2.12)	3.10 (2.08)	2.65 (2.32)	2.94 (2.53)	2.50 (1.90)	2.80 (2.01)	3.18 (2.02)	2.38 (1.86)
September		2.65 (2.06)	2.99 (2.07)	2.29 (2.11)	2.82 (2.47)	2.45 (1.87)	2.73 (1.98)	3.15 (2.02)	2.36 (1.85)
October		2.56 (2.03)	2.81 (2.05)	2.05 (1.94)	2.70 (2.40)	2.40 (1.83)	2.65 (1.96)	3.08 (2.00)	2.34 (1.83)
November		2.42 (1.95)	2.48 (1.97)	1.92 (1.78)	2.53 (2.28)	2.28 (1.76)	2.54 (1.89)	2.96 (1.98)	2.13 (1.62)
December		2.29 (1.84)	2.35 (1.90)	1.84 (1.67)	2.39 (2.16)	2.21 (1.70)	2.32 (1.73)	2.85 (1.94)	1.93 (1.47)
2004									
January		1.91 (1.58)	1.88 (1.59)	1.92 (1.71)	2.29 (2.09)	2.23 (1.71)	2.19 (1.63)	2.57 (1.83)	1.86 (1.47)
February		1.74 (1.48)	2.04 (1.60)	2.14 (1.92)	2.43 (2.26)	2.36 (1.79)	2.25 (1.67)	2.62 (1.81)	1.90 (1.56)
March		2.18 (1.70)	3.01 (2.02)	2.43 (2.15)	2.92 (2.53)	2.62 (1.98)	2.86 (2.02)	3.12 (1.99)	2.39 (1.88)
April		2.73 (2.12)	3.19 (2.07)	2.73 (2.38)	3.24 (2.68)	2.71 (2.03)	3.02 (2.11)	3.23 (2.01)	2.47 (1.94)
May		2.84 (2.18)	3.54 (2.15)	2.83 (2.48)	3.36 (2.71)	2.76 (2.07)	3.00 (2.11)	3.26 (2.02)	2.49 (1.95)
June		2.88	3.30	2.83	3.39	2.76	3.01	3.22	2.45

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	Total Sample (N=2239)	Chipata/ Petauke (n=299)	Chongwe (n=286)	Mongu/ Kaoma (n=301)	Kalomo/ Monze (n=287)	Kazungula (n=241)	Mumbwa (n=255)	Kabwe (n=286)	Luanshya/ Chingola (n=284)
		(2.20)	(2.10)	(2.47)	(2.71)	(2.07)	(2.11)	(2.02)	(1.93)
July		2.87 (2.20)	3.29 (2.10)	2.81 (2.46)	3.37 (2.71)	2.74 (2.07)	3.01 (2.12)	3.21 (2.02)	2.45 (1.93)
No of Months with at least 3.00 average		0	6	0	4	0	4	5	0
Proportion (%) h/holds consuming at least 3 meals per day	63	52	74	47	74	57	71	91	37

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3.7 Identification of Food Insecure Target Groups

From the literature certain types of households are known to be particularly vulnerable to food insecurity because of their characteristics. Such households include female-headed households, households with chronically ill members, elderly headed households with productive-age members and households headed by children or youth (C-SAFE, 2003). The reasons for food insecurity in the various cases emanates from a lack of productive resources and or assets (including labor), time constraints because of having to care for the chronically ill, increased dependency ratio as a result of households having to suddenly absorb young orphans or a combination of some of these reasons. These households also featured strongly within the results of the baseline survey as being particularly food insecure.

From the PRA it was found that one common cause of food insecurity among the poorer sections of the community was the inability of these households to break out of the poverty cycle. Most of these households were often preoccupied with how to source food. Even during the farming season and because of lack of food they spent their time looking for piece work on other peoples farms in order to get food. In the meantime, they neglect their own fields such that with poor management they have barely any crop to harvest and are therefore forced to continue offering their labor for petty wages.

In Table 8, households in the sample are characterized according to known food insecure household types. The aim is to examine whether these types of households in the survey sample are worse in terms of food security as compared to the sample averages. In general within all of the sample areas, households containing individuals who were chronically ill, households containing orphans, and households headed by women, were the most food insecure.

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Table 8: Number of Households and Percentages of Households in Food Insecure Groups

Characteristic	Whole Sample	Chipata/ Petauke	Chongwe	Mongu/ Kaoma	Kalomo/ Monze	Kazungula	Mumbwa	Kabwe	Luanshya/ Chingola
Average size of household	6.7	6.2	6.7	7.1	8.1	5.3	6.7	7.0	6.8
Number of households/ (percentage) with chronically ill persons	548 (24)	76 (25)	74 (26)	123 (48)	87 (30)	61 (25)	52 (21)	31 (11)	39 (14)
Number of households/ (percentage) with orphans	925 (41)	93 (31)	140 (49)	178 (60)	128 (45)	99 (41)	106 (43)	80 (28)	101 (36)
Number (percentage) of female-headed households	561 (25)	80 (27)	89 (31)	74 (25)	59 (21)	72 (30)	72 (29)	56 (20)	59 (21)

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4.0 Preliminary Conclusions

Based upon the initial analysis of the results of this survey, utilizing only indicators of food consumption, which are proxies for income, and household access to food, the samples from Mongu/ Kaoma (Western Province), Chipata/ Petauke (Eastern Province), Luanshya/Chingola (Copperbelt Province), Kaloma/ Monze and Kuzungula (Southern Province), appear to indicate the highest degree of food insecurity based on: (a) more than 75% indicate that harvests don't last through the entire year, (b) those sampled currently receive food aid, (c) those sampled report consuming less than three meals per day during all months, or (d) the sample included high percentages of food insecure groups in those areas. Thus, Land O'Lakes Zambia will probably target the associated geographic areas first for interventions. Additional review of the data will confirm this conclusion.

Throughout the program areas, however, Land O'Lakes will focus its efforts upon the identified food insecure target groups: households hosting individuals with chronic illnesses, households containing orphans, and female-headed households. Many food insecure households may not have the resources to devote to purchase and management of dairy cattle and milk production. However, where possible, Land O'Lakes will try to target activities to such households or to community members within the vicinity in the hopes that the presence of livestock and dairy activities in the area will enable others to contribute to those who are unable to support themselves, either through the provision of fresh milk, or through an increased capacity of community members to purchase food.

The data analyzed to date indicates that the baseline value for the **average number of months of adequate food provisioning for the sample surveyed is 9.4 months per year**. In addition, **63% of those sampled throughout the country reported consuming 3 meals per day** (an adequate diet). These are the baseline values for food security indicators for the program.

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**Land O' Lakes, inc. Zambia
Title II Development Activity Program
TA No. FFP-A-00-04-00001-00**

**Food Security Impact Indicators
For Monitoring Performance**

Prepared for Land O'Lakes/ZAMBIA
By
Pia M. Chuzu, PhD
July 2004

APPENDIX B

Introduction

The main purpose of this paper is to suggest some indicators to measure the food security impact of various components of the LOL/Z DAP. These indicators are provisional and may be revised depending on the outcome of discussions with LOL/Z staff and implementing partners, and based on the findings of the planned baseline survey.

Selection of proposed impact indicators was made from food availability and access rather than utilization indicators. Outcomes at the third level of utilization depend on several factors, including health, care and sanitation. The indicators were selected with reference to the stated objectives of the three components of the LOL/Z DAP. These are indicated in table 1. The overall goal of the project is to increase income of smallholder-farmers, dairy processors and rural entrepreneurs.

Indicators in this paper are primarily those that measure impact i.e how the DAP's 3 components might contribute to broad development goals and not those that measure direct output. Impact indicators suggested relate to the program's contribution to household food security. The assumption is that higher income from project activities will result in improved household food security.

Proposed indicators are the same as or variants of indicators that are well documented in the literature and that have been extensively applied in other Title II programs. Indicator selection was based primarily on relevance to the LOL/Z DAP, ease of implementation and cost effectiveness.

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Table 1: Objectives of the 3 Components of the Development Activity Program

Component	Objectives	Goal (Strategic Objective)
Dairy Industry Development	Increased milk sales by smallholder Milk Collection Centers	Increased income of smallholder farmers, dairy processors and rural entrepreneurs
	Increased output of small and medium-scale dairy processors	
Dairy Livestock Development	Increase in milk production by smallholder farmers	
	Increase in milk sales of smallholder farmers	
Storage/ Marketing of Non-Perishable Commodities (NPC's))	Increase number of smallholder farmers using the Warehousing Receipt System	
	Increase in certified storage utilized by smallholder farmers	

IMPACT INDICATORS

1.0 MONTHS OF ADEQUATE STAPLE PROVISIONS

This is a slightly different version of the documented indicator “months of adequate food provisioning”. The focus here is on staples because they form the bulk of the diet in most rural situations. Local perception of hunger in most Zambian households is characterized primarily by the inability to source maize meal, cassava or other staple as may be relevant in the area. In rural areas, months of adequate staple provisions are almost always synonymous with the number of months of adequate produced food as most households rely on food that they produce.

In all agro-ecological zones, there is a period, usually during the months between November and February when households have little food. During these months most households have exhausted their food stocks and they have little income to purchase food. For most households, this lean period occurs even during a normal agricultural season but deprivation tends to be more prolonged and deeper in times of weather adversity. Thus, a shortening of the hunger period or a reduction in the number of months without adequate staples would signify progress.

B. 1.1 Data Requirements and Timing

Data required are the number of months with/out adequate staple provisions. Adequacy relates to frequency of main meals as well as the quantity consumed at each sitting. The determination of number of months with/out adequate staple provisioning can be done any time as it will be based on recall. After the baseline survey, the next data collection could be done at the mid-term and final evaluations, assuming that impact of milk sales income will begin to show by the end of the first year.

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C. 1.2 Data Collection Methodology

A representative sample of households should be surveyed to obtain the status at household level, and to obtain an indication of degree of variability within the community.

D. 1.3. Indicator Quality

The indicator is easy and inexpensive to measure.

E. 1.4 Comparability across Agro-ecological Zones

The hunger season differs by its onset and duration across various agro-ecological zones but comparison of the number of months of relative deprivation is easy. Comparison of severity of deprivation, both across zones and between households in specific zones is not possible using only this indicator. This would require additional information quantities consumed.

2.0 INCREASE IN PROPORTION OF HOUSEHOLDS EATING AT LEAST 3 MEALS A DAY

In Zambia a starting point for a family to consider themselves eating well is that they should be eating at least 3 meals a day as follows: breakfast in the morning and 2 main meals namely lunch consisting of a staple and relish; and dinner consisting of a staple and relish. Beyond this, other things to consider are the amount of food available at each of these sittings and the variety in the relish accompaniments. When food is short, rural families sometimes reduce the number of times food is consumed and/ or the quantity consumed at each sitting. For the purpose of construction of this indicator, 3 meals means 2 main meals and any other meal.

F. 2.1 Data Requirements and Timing

Required data are the change in quantity and frequency of meals in the hungry season as compared to a normal period, by household. In order to properly track progress, data should be collected around more or less the same time during the hungry season at the mid-term evaluation and during the final evaluation. Any obvious deviation of the survey year from the norm should be noted.

G. 2.2 Data Collection Methodology

A survey questionnaire will be administered to a representative sample. The indicator comprises a ratio of the number of households consuming at least three meals divided by the total number of households in the sample.

H. 2.3 Indicator Quality

The indicator is easy to measure and inexpensive to implement.

I. 2.4 Comparability Across Agro-ecological Zones

It is assumed that the thumb rule of at least 3 meals a day is well accepted country-wide as a precursor to food adequacy in a household. Differences with respect to perceptions of adequacy of diet might relate more to food content and quantity in the diet rather than

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the minimum frequency of meals. The validity of this assumption will be checked through focus group discussions, and the assumption will be revised if and where necessary.

3.0 Gender Concerns

While no indicators have been specifically designed to track gender concerns, suggested indicators can easily be adapted to monitor progress by gender. Care should be taken to include in the monitoring or evaluation samples, strata of vulnerable groups, including female-headed households; and to collect gender disaggregated data where possible. The tracking of participation rates and the accrual of benefits from the program by gender or household headship (whether male- or female-headed) are some opportunities to address gender concerns. In this respect, targets for the achievement of desired gender- (or other vulnerable group) specific goals should be explicitly stated at the outset.

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<http://www.idd.landolakes.com/>



**Land O' Lakes, inc. Zambia
Title II Development Activity Program
TA No. FFP-A-00-04-00001-00**

**Monitoring and Evaluation
Performance Management Plan
(Performance Indicators Reference sheets)**

2005

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ACRONYMS AND ABBREVIATIONS

IR	Intermediate Result
FFP	Food For Peace office of the USAID
LOL	Land O'Lakes
LOA	Life of Activity
MCC	Milk Collection Center
SO	Strategic Objective
USAID	United States Agency for International Development
ZDPA	Zambia Dairy Processors Association
ZACA	Zambia Agricultural Commodity Agency

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INTRODUCTION

This document contains documentation of the indicators that Land O'Lakes, Inc / Zambia will use to track progress that the program is making toward achieving its set objectives. It contains the indicators that measure performance at each level of the Hierarchy of Objectives, their data sources, the quality of data available and responsibilities for collection and analysis of the data. This document assists the team in establishing systems to monitor, evaluate, analyze, review, and report performance data.

Elements included in this document are:

- Detailed description of Performance Indicators to be tracked
- Source, method and schedule for data collection and assigned responsibility for data collection to a specific unit, team or individual
- Description of known data limitations, the significance of the limitations for judging the extent to which goals have been achieved, and completed or planned actions to address these limitations
- Description of quality assessment procedures that will be used to verify and validate the measured values of actual performance

The Performance Management Plan is expressed in all Performance Indicators Reference Sheets in the pages that follow. These sheets will be reviewed annually to ensure that they in conformity with the program's objectives. Any significant changes to the indicators will only be effected upon approval of FFP.

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PROGRAM OVERVIEW

Land O'Lakes Zambia is implementing a 5 year PL480 Title II program with the aim of promoting dairy development among smallholder farmers in rural Zambia. The program entitled *Title II Development Assistance Program* is a grant from USAID's Food For Peace Office (FFP) and aims to contribute to FFP's Strategic Objective of *reducing food insecurity among vulnerable populations and protecting and enhancing livelihoods*. The program targets the Food Access element of food security by working towards *improving smallholder farmers' income*, which in turn should facilitate better access to food for these people. In this way, the program also addresses the FFP IR 2.2 of *Household livelihoods protected and enhanced*.

To *increase smallholder farmers' income*, the program has the following primary objectives;

- Improve the genetic quality of dairy cattle owned by smallholder farmers thereby increasing their milk output
- Increase the quantity of raw milk supplied by smallholder farmers to MCCs for onward sell to milk processors and other buyers
- Expand the market demand for milk supplied by smallholder farmers by assisting dairy processors with product improvement and the introduction of quality assurance systems
- Implement educational and promotional campaigns in collaboration with dairy processors in Zambia aimed at improving both sales and consumption of milk

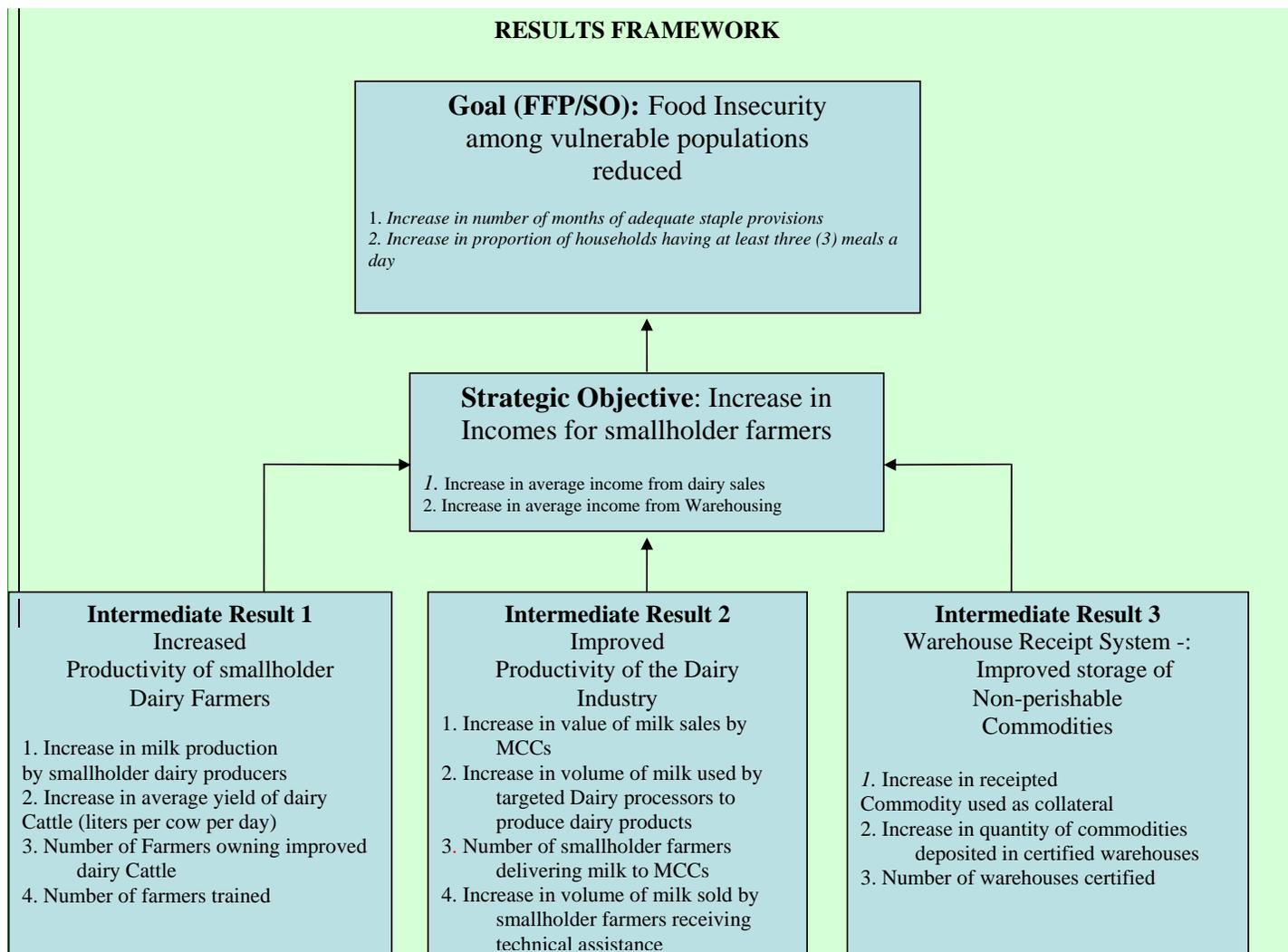
These primary objectives are being implemented through three Intermediate Results as follows:

- IR 1: Increased dairy productivity of Smallholder farmers
- IR 2: Improved productivity of the dairy Industry
- IR 3: Improved storage for non-perishable Commodities.

In realizing that the targeted dairy farmers are involved in crop production as well, the program is also supporting a Warehouse Receipt Component (IR3) that aims to introduce storage and marketing of non-perishable commodities among smallholder farmers. This system enables farmers to obtain better prices for their produce and also facilitates their ability to obtain credit by using the receipts as collateral.

In order to track the program's progress towards contributing to FFP's strategic objective, a set of indicators has been developed for every main component. These are summarized in the program's Results Framework below.

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PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 1

INDICATOR REFERENCE SHEET	
Result	
	Goal (FFP SO): Food insecurity among vulnerable populations reduced
Indicator	
	Increase in number of months of adequate staple self provisioning
DESCRIPTION	
Definition	Staple Foods are defined as the foods that constitute around 70% of a diet. In Zambia, the main staple foods are Maize and Cassava. The reference period is the number of months over a period of a year during which households can adequately meet their staple food requirements in an agricultural season. Adequacy relates to frequency of main meals as well as the quantity consumed at each sitting. Staple food from own production usually run out before the next harvest. The program will track progress made by beneficiaries towards smoothing their annual consumption by making staple purchases with the income raised from milk sales
Utility	This indicator is a measure of the program's contribution USAID/ FFP's strategic objective. It also measures the program's impact on food security of the targeted communities
DATA ACQUISITION	
Data Collection Method	A representative sample of households will be surveyed to obtain the status at household level, and to obtain an indication of degree of variability within the community. Enumerators will fill out the Structured household questionnaires based on an interview to beneficiaries
Method of Acquisition	Sample Survey
Data Source	Beneficiaries information captured in the Structured household questionnaire
Frequency of Data Acquisition	After the baseline survey, the next data collection will be done at the mid-term and final evaluations, assuming that impact of milk sales income will begin to show by the end of the first year
Responsible for Collecting	External Consultant
DATA QUALITY	
Quality Assessment	Once after every review (Baseline, Mid term and Final Evaluation)
Known Data Limitations	<ol style="list-style-type: none"> 1. Reluctance to disclose this information by farmers 2. Sampling errors, non-response errors, interviewer bias, recall problems

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Actions taken to address data limitations
1. Address this information need in the agreement established with farmer associations. 2. Develop procedures to collect information 3. Perform Data Quality Assessment to validate usefulness of the data and improve M&E data
DATA ANALYSIS
Data Analysis
Data is compared with baseline values
Reporting of Data
<ul style="list-style-type: none">• LOL: Annual Reports• USAID: Results Report and IPTT Table
OTHER NOTES
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• Baseline Report• Mid term review report• Final review Report• Questionnaire files• Survey Database
Disaggregating
Gender, geographical area, vulnerability groups (child headed households, households with chronically ill, members)
Unit of Measure
Number of Months per year

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PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 2

INDICATOR REFERENCE SHEET
Result
Goal (FFP SO): Food insecurity among vulnerable populations reduced
Indicator
Increase in number of households having at least 3 meals a day
DESCRIPTION
Definition
In Zambia a meal is defined as the main foods eaten in a day (Breakfast, Lunch Super). While any type of food eaten in the morning qualified for a meal, Lunch and Supper usually consist of starch (Maize or Cassava) and a relish (vegetables, meat, fish etc). A starting point for a household in Zambia to consider themselves as eating adequately is the consumption of at least 3 meals a day as follows: breakfast in the morning and 2 main meals namely lunch and Supper. When food is short, rural families sometimes reduce the number of times food is consumed and/ or the quantity consumed at each sitting. For the purpose of construction of this indicator, 3 meals mean 2 main meals and any other meal.
Utility
This indicator is a measure of the program's contribution FFP's strategic objective.
DATA ACQUISITION
Data Collection Method
A representative sample of households will be surveyed to obtain the status at household level, and to obtain an indication of degree of variability within the community. Enumerators will fill out the Structured household questionnaires based on an interview to beneficiaries
Method of acquisition
Sample Survey
Data Source
Beneficiaries information captured in the Structured household questionnaire
Frequency of Data Acquisition
After the baseline survey, the next data collection will be done at the mid-term and final evaluations, assuming that impact of milk sales income will begin to show by the end of the first year. Household level change in quantity and frequency of meals in the hungry season is compared to a normal period. In order to properly track progress, data should be collected around more or less the same time during the hungry season at the mid-term evaluation and during the final evaluation. Any obvious deviation of the baseline survey year from the norm should be noted.
Responsible for Collecting
M&E Specialist and team of enumerators
DATA QUALITY
Quality Assessment
Once after every review (Baseline, Mid term and Final Evaluation)

APPENDIX C

Known Data Limitations
1. Reluctance to disclose this information by farmers, 2. Sampling errors, non-response errors, interviewer bias
Actions taken to address data limitations
1. Address this information need in the agreement established with farmer associations. 2. Perform Data Quality Assessment to validate usefulness of the data and improve M&E data 3. Use of PRA techniques to validate data
DATA ANALYSIS
Data Analysis
Data is compared with baseline values
Reporting of Data
<ul style="list-style-type: none">• LOL: Annual Reports• USAID: Results Report and IPTT Table
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• Baseline Report• Mid term review report• Final review Report• Questionnaire files• Survey Database
Disaggregating
Gender and Region
Unit of Measure
Percentage increase in number of households

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 3

INDICATOR REFERENCE SHEET	
Result	
SO: Increased incomes among smallholder farmers	
Indicator	
Increase in average household income from Dairy sales	
DESCRIPTION	
Definition	
Household Dairy income (per month) is the sum of net sales of all dairy products, both cash and in-kind	
Utility	
This indicator is a measure of the program's contribution to the income of smallholder farmers.	
DATA ACQUISITION	
Data Collection Method	
<ul style="list-style-type: none"> - Sales to MCC: Field staff conduct document review of internal records of participant MCCs on a quarterly basis - Sales to others: M&E unit carries out /contracts out a sample based Survey on a quarterly/semi-annual basis and project against MCCs' information for selected farmers (randomly selected) 	
Method of Acquisition	
<ul style="list-style-type: none"> - Sales to MCC: MCC provides the information - Sales to others: For selected farmers, M&E Unit gathers this information from the farm and MCC 	
Data Source	
<ul style="list-style-type: none"> • Secondary sources: Progress reports from the field, MCC books • Primary sources: MCC books and Structured household questionnaires, Farm books, PRA (Mid, end review) 	
Frequency of Data Acquisition	
Sales to MCC: Quarterly basis	
Sales to others: Quarterly basis and PRA (mid, end review)	
Responsible for Collecting	
Technical Team	
M&E Specialist	
DATA QUALITY	
Quality Assessment	
Once a year	
Known Data Limitations	
<ol style="list-style-type: none"> 1. Reluctance to disclose this information by farmers, especially of sales outside MCCs. 2. MCCs and Farms books accuracy 3. Sampling errors, non-response errors, interviewer bias 	

APPENDIX C

Actions taken to address data limitations
1. Use information from MCCs; Address this information need in the agreement established with Associations. Verify information during mid, final review 2. Assist Farmers & MCCs in record keeping 3 Develop procedures to collect information from other incomes or proxy indicators 3. Perform Data Quality Assessment to validate usefulness of the data and improve M&E data
DATA ANALYSIS
Data Analysis
Data is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
<ul style="list-style-type: none">• LOL: Annual Reports• USAID: Results Report and IPTT Table
OTHER NOTES
Baseline/Targets
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of MCC monthly milk deliveries• File of questionnaires• Field activity reports• File of PRA
Disaggregating
Gender and Geographical Area
Unit of Measure
US Dollars

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 4

INDICATOR REFERENCE SHEET
Result
SO: Increased incomes among smallholder farmers
Indicator
Increase in average income from the Warehouse Receipt system
DESCRIPTION
Definition
The Warehouse Receipt System is a system whereby farmers can store their commodities in certified warehouses and are then issued with receipts that serve as documents of title (proof of ownership) and can be used by the owners as collateral for obtain credit. The system also enables farmers to store their commodities until the market prices become favourable. This assures them of increased income from sale of their commodities.
Utility
This indicator is a measure of the program's contribution to the income of smallholder farmers.
DATA ACQUISITION
Data Collection Method
Review of Reports from Certified Warehouses: Field staff conduct document review of internal records Farmer Sales: M&E unit carries out /contracts out a sample based Survey and project against MCCs' information for selected farmers
Method of Acquisition
Review of Warehouse Records Farmer Sample Survey
Data Source
Warehouse Reports Farmer Survey
Frequency of Data Acquisition
Warehouse Reports will be reviewed on an semi annual basis Information on farmers' sales will be collected semi-annually, at the start of the marketing season in May and in September
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
1. Reluctance to disclose this sales information by farmers 2. Difficulty in obtaining accurate and up to date information from Warehouse Records

APPENDIX C

Actions taken to address data limitations
1. Address this information need in the agreement established with farmer groups. 2. All data will be reviewed for inconsistencies 3. Assist Farmers & Warehouses in record keeping 4. Perform Data Quality Assessment to validate usefulness of the data and improve M&E data
DATA ANALYSIS
Data Analysis
Data will be compared with baseline values at midterm and final evaluation
Reporting of Data
LOL annual Report USAID: Results Report/IPTT
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of Warehouse Record• File of questionnaires• Field of activity reports
Disaggregating
Gender , Geographical area & vulnerability groups
Unit of Measure
US Dollars

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 5

INDICATOR REFERENCE SHEET
Result
IR.1 Increased productivity of smallholder dairy farmers
Indicator
Increase in Milk production by smallholder farmers
DESCRIPTION
Definition
<i>Milk production</i> refers to the monthly totals of liters of raw (unprocessed) milk produced by dairy producer groups benefiting from the program
Utility
Sustainable increases in rural incomes can only be achieved when production goes beyond subsistence requirements. This indicator thus provides a direct measure of the program's progress towards improving smallholder farmers' productivity
DATA ACQUISITION
Data Collection Method
Sampled farmers' records will be reviewed on a quarterly basis
Method of Acquisition
Selected farmers will be interviewed
Data Source
Farmers' records File of Structured questionnaires
Frequency of Data Acquisition
Quarterly for selected farmers
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
Amalgamation of data representing different time periods and thus different production rates may hide seasonality of production (milk production varies all year round but is collected only 4 times a year) Accuracy of data Lack of Farm Books
Actions taken to address data limitations
Take account of changes in production due to seasonality Address this information need in the agreement established with farmer groups. All data will be reviewed for inconsistencies Assist Farmers & Warehouses in record keeping Perform Data Quality Assessment to validate usefulness of the data and improve M&E

APPENDIX C

data
DATA ANALYSIS
Data Analysis
Data is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
<ul style="list-style-type: none">• LOL: Quarterly/Annual Reports• USAID: Results Report
OTHER NOTES
Baseline/Target
The total volume of milk production that was recorded as the Life of Activity (LOA) achievement of the previous dairy program administered by LOL will form the baseline value for this indicator. This was the total amount of milk marketed by dairy producer groups benefiting from the program; which was used as a proxy for production by these groups
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of questionnaires• Field activity reports
Disaggregating
Geographical area, Farm size (# of cattle)
Unit of Measure
Percentage increase in Liters of milk produced

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 6

INDICATOR REFERENCE SHEET
Result
IR.1 Increased productivity of smallholder dairy farmers
Indicator
Percentage increase in average yield of dairy cattle owned by targeted Smallholder dairy farmers
DESCRIPTION
Definition
<i>Average Yield</i> is refers to the average number of litres of milk produced per cow per day over the lactation period of the cow. It is represented by establishing the average yield of a cross section of cows at a specific period in the seasonal milk production cycle
Utility
This indicator measures the program's progress in improving smallholder farmers' productivity. Since the program aims to impact on the genetic composition, management and nutrition of the dairy animals owned by smallholder farmers, milk yield is gives a significant indication of the program's performance in this area.
DATA ACQUISITION
Data Collection Method
Review of farmer records Farmer Survey Review of Field Reports/ Records
Method of Acquisition
Interviews with Selected farmers Technical visits
Data Source
Records Review, Farmer Recall, Direct Observation
Frequency of Data Acquisition
Quarterly
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
Recall Problems Inaccurate records
Actions taken to address data limitations
Farmers will be trained in record keeping Direct observation will help to double check information in Farm Books

APPENDIX C

DATA ANALYSIS
Data Analysis
Data collected is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of questionnaires• File of farm books• Field activity reports
Disaggregating
Gender, Seasons (rainy and dry seasons), Breed, Geographical areas, Farm size
Unit of Measure
Percentage increase in Liters per cow per day

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 7

INDICATOR REFERENCE SHEET
Result
IR.1 Improved productivity of smallholder dairy farmers
Indicator
Number of smallholder farmers owning improved dairy cattle
DESCRIPTION
Definition
The number of improved cattle owners refers to the smallholder farmers who will benefit from the program's stocking and crossbreeding sub-programs. <i>Improved Dairy Cattle</i> is defined as those animals that are either cross-breeds with both Local and exotic parentage or pure-breeds of exotic parentage.
Utility
As a contribution towards improving the productivity of smallholder dairy farmers, the program will be involved in a stocking sub-program whereby a given number of farmers will receive dairy cattle and then pass on the off-springs to other farmers. This is driven by the understanding that genetic composition of local animals imposes restrictions upon their potential to increase their productivity despite improvements in management and nutrition. Hence improved cattle have a much better potential for high yields throughout their entire productive lives.
DATA ACQUISITION
Data Collection Method
Quarterly Review of Program Records
Method of Acquisition
Review of records
Data Source
File of Inventory and Distribution Records Farmer Association Records Heifer International's Quarterly reports
Frequency of Data Acquisition
Quarterly
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
Availability of distribution files in the program Non-receipt of Sub-grantee's reports Inaccurate records of Farmer Associations
Actions taken to address data limitations
Establish files in the program

APPENDIX C

Train Farmer Associations in Record Management Ensure receipt of quarterly reports from sub grantees
DATA ANALYSIS
Data Analysis
Data collected is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of questionnaires• Field activity reports
Disaggregating
Gender, Geographical area, vulnerability groups, Breeds (Pure, Cross), Type of assistance offered (stocking, artificial insemination, use of communal bulls)
Unit of Measure
Number of Farmers

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 8

INDICATOR REFERENCE SHEET
Result
IR.1 Improved productivity of smallholder dairy farmers
Indicator
Number of smallholder farmers trained
DESCRIPTION
Definition
The indicator refers to the farmers who have been trained in livestock management, milk handling and hygiene, improved feeding practices, Artificial insemination, marketing skills, pasture management and disease control
Utility
The indicator is a direct measure of the program's effectiveness in influencing smallholder farmers' productivity through training in various aspects of dairy production.
DATA ACQUISITION
Data Collection Method
Quarterly Review of Program Records
Method of Acquisition
Review of Program files of Training and Technical Assistance provided Review of Training records Field Reports
Data Source
Program files of Training and Technical Assistance provided Farmer's Records Field Reports
Frequency of Data Acquisition
Quarterly
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
Non-receipt of Field Reports Inaccurate training records
Actions taken to address data limitations
Train Farmer in Record Management Ensure receipt of quarterly reports from the field
DATA ANALYSIS
Data Analysis
Data collected is compared with baseline values Quarterly data is compared with quarterly data from previous years

APPENDIX C

Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following document in order to document this performance indicator; <ul style="list-style-type: none">• Program files of Training and Technical Assistance provided
Disaggregating
Gender, Geographical area, type of improved practices
Unit of Measure
Number of Farmers trained

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 9

INDICATOR REFERENCE SHEET
Result
IR.2 Improved productivity of the Dairy Industry
Indicator
Increase in value of milk sold by Milk Collection Centers
DESCRIPTION
Definition
Value of milk refers to the monthly volume of milk marketed by MCCs multiplied by the average monthly selling price of milk. This amount is the divided by the average exchange rate of the Zambia Kwacha to the US Dollar to obtain the Dollar value
Utility
This indicator measures the program's progress in improving market linkages between dairy producers and processors
DATA ACQUISITION
Data Collection Method
MCC and processors records will be reviewed on a quarterly basis
Method of Acquisition
MCCs will provide information Processors 's records to double check MCCs information
Data Source
MCC records Farmers' records Processors records
Frequency of Data Acquisition
Quarterly for MCCs and processors Bi-annually for selected farmers
Responsible for Collecting
Technical Team M&E Personnel
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
The data may be considered business sensitive and thus may not be realized at will Inaccurate records Lack of Books for recording in
Actions taken to address data limitations
Address this information need in the agreement established with Associations Train MCCs in Record Management Ensure that MCCs acquire Record Books

APPENDIX C

DATA ANALYSIS
Data Analysis
Data is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
<ul style="list-style-type: none">• LOL: Quarterly/Annual Reports• USAID: Results Report
OTHER NOTES
Baseline
The total value of milk sold by MCCs during the Life of Activity (LOA) of the previous dairy program administered by LOL will form the baseline value for this indicator.
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of MCC monthly milk deliveries• Field activity reports
Disaggregating
Geographical Area, Length of time of establishment, membership size
Unit of Measure
US Dollars

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 10

INDICATOR REFERENCE SHEET
Result
IR.2 Improved productivity of the Dairy Industry
Indicator
Percentage increase in volume of milk used by Dairy Processors to produce dairy products
DESCRIPTION
Definition
Output of processors defines the amount of milk delivered onto the market by the processors benefiting from the program. The final output of this milk may be fresh or sour milk or other finished dairy products like cheese, yoghurt etc, but it will be measured as liters of milk sold
Utility
The program aims to provide assistance to dairy processors through the Zambia Dairy Processors association. This assistance in the form of promotional campaigns to boost market demand and technical assistance to boost factory production. This indicator is critical for tracking progress in linking dairy producers to processors.
DATA ACQUISITION
Data Collection Method
Processors will facilitate access to their production/sales records Examination of processors' records Revision of MCC's records delivering to processors
Method of Acquisition
Review of Processors' Monthly Output Reports Quarterly reports filed in by the processing and promotions specialists
Data Source
Processors' reports
Frequency of Data Acquisition
Quarterly
Responsible for Collecting
Processing Specialist Promotions Specialist M&E Specialist
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
Processors' reluctance to give out information due to the business sensitive nature of the information Timely availability of data

APPENDIX C

Actions taken to address data limitations
This information need will be addressed in the agreements established with ZDPA Request for information will be made on time
DATA ANALYSIS
Data Analysis
Data collected will first be compared to initial values recorded in September 2004 and then each quarter's data will be compared with quarterly data from the previous year
Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline
The output level recorded by the end of the previous dairy program that LOL was administering will form the baseline values.
Data Storage
The program will maintain an electronic and/or physical files of the File of Processors' Records in order to document this performance indicator; <ul style="list-style-type: none">• File of MCC monthly milk deliveries• File of Processor's records
Disaggregating
Capacity of Processors, Geographical Area, non/member of ZDPA
Unit of Measure
Percentage increase in liters of Milk per year

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 11

INDICATOR REFERENCE SHEET
Result
IR.2 Improved productivity of the Dairy Industry
Indicator
Number of smallholder farmers delivering Milk to Milk Collection Centers
DESCRIPTION
Definition
This indicator refers to the individual members of producer groups selling their raw milk to MCCs
Utility
The program aims to support the development of market linkages in the dairy industry. On the supply side of these linkages, a major determining factor of the viability of MCCs is the number of farmers supplying it with raw milk for onward sale to processors. This indicator thus provides a measure of the sustainability of the MCCs and thus the viability of the dairy industry
DATA ACQUISITION
Data Collection Method
Quarterly Review of MCC records Interview sampled farmers
Method of Acquisition
Review records Questionnaires
Data Source
MCC Records Farmer Survey
Frequency of Data Acquisition
Quarterly
Responsible for Collecting
Technical units M&E unit
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
The data may be considered business sensitive and thus may not be realized at will Inaccurate records Lack of Books for recording in Sampling errors
Actions taken to address data limitations
Address this information need in the agreement established with Associations Train MCCs in Record Management Ensure that MCCs acquire Record Books

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APPENDIX C

Adopt scientific Sampling methods
DATA ANALYSIS
Data Analysis
Data is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline/Targets
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of MCCs' records• Questionnaire Files
Disaggregating
Gender, Farm size, vulnerability group, geographical area
Unit of Measure
Number of farmers delivering per month

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 12

INDICATOR REFERENCE SHEET
Result
IR.2 Improved productivity of the Dairy Industry
Indicator
Percentage increase in volume of milk sold by smallholder farmers receiving technical assistance
DESCRIPTION
Definition
Volume of milk sold refers to the liters of milk that individual farmers sell to MCCs and other selling channels
Utility
The indicator is a measure of the impact that improvements in the dairy industry can have on the incomes of smallholder farmers
DATA ACQUISITION
Data Collection Method
<ul style="list-style-type: none"> - Deliveries to MCC: Field staff conduct document review of internal records of participant MCCs on a quarterly basis - Sales to others: M&E unit carries out a sample based Survey on a quarterly basis and project against MCCs' information for randomly selected farmers
Method of Acquisition
<ul style="list-style-type: none"> - Deliveries to MCC: MCC provides the information - Sales to others: For selected farmers, M&E Unit gathers this information from the farm and MCC
Data Source
<ul style="list-style-type: none"> • Secondary sources: Progress reports from the field, MCC books • Primary sources: MCC books and Structured household questionnaires, Farm books, PRA (Mid, end review)
Frequency of Data Acquisition
Sales to MCC: Quarterly basis Sales to others: Quarterly basis
Responsible for Collecting
Technical Team M&E Specialist
DATA QUALITY
Quality Assessment
Once a year
Known Data Limitations
<ol style="list-style-type: none"> 1. Reluctance to disclose this information by farmers, especially of sales outside MCCs. 2. MCCs and Farms books accuracy 3. Sampling errors, non-response errors, interviewer bias

APPENDIX C

Actions taken to address data limitations
1. Use information from MCCs; Address this information need in the agreement established with Associations. Verify information during mid, final review 2. Assist Farmers & MCCs in record keeping 3. Develop procedures to collect information from other incomes or proxy indicators 3. Perform Data Quality Assessment to validate usefulness of the data and improve M&E data
DATA ANALYSIS
Data Analysis
Data is compared with baseline values Quarterly data is compared with quarterly data from previous years
Reporting of Data
<ul style="list-style-type: none">• LOL: Annual Reports• USAID: Results Report and IPTT Table
OTHER NOTES
Baseline/Targets
See appendix for Baseline values
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• File of MCC monthly milk deliveries• File of questionnaires• Field activity reports• File of PRA
Disaggregating
By District, Gender and Region
Unit of Measure
Percentage increase in milk sales

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 13

INDICATOR REFERENCE SHEET	
Result	
IR.3: Improved storage of non-perishable commodities	
Indicator	
Increase in receipted commodities utilized as collateral	
DESCRIPTION	
Definition	Receipted commodities refer to the various non-perishable agricultural products like Maize, cotton, sunflower etc that are placed in certified warehouses and owners are issued with receipts as proof of ownership. This receipts may then be used as collateral for obtaining loans from lending institutions
Utility	Most smallholder farmers in Zambia do not have access to loans, mainly due to lack of collateral. Since warehouse receipts are acceptable as collateral, this indicator is a critical to the performance of the program in so far as facilitating farmers' access to loans is concerned.
DATA ACQUISITION	
Data Collection Method	Review of Warehouse Records Farmer Survey
Method of Acquisition	Review of Warehouse Records Interviews with randomly selected farmers
Data Source	Warehouse Records Structured questionnaires
Frequency of Data Acquisition	Quarterly
Responsible for Collecting	Field Staff M&E Specialist
DATA QUALITY	
Quality Assessment	Once a year
Known Data Limitations	Accuracy of data
Actions taken to address data limitations	PRA techniques to validate data
DATA ANALYSIS	
Data Analysis	Comparative Analysis

APPENDIX C

Reporting of Data
LOL: Quarterly/Annual Reports USAID: Results Report
OTHER NOTES
Baseline
See appendix
Data Storage
The program will maintain an electronic and/or physical files of the following documents in order to document this performance indicator; <ul style="list-style-type: none">• Warehouse Records• Questionnaire Files
Disaggregating
Geographical area, Vulnerability groups, farmer size, gender, warehouses
Unit of Measure
US Dollar value of receipts

APPENDIX C

PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 14

INDICATOR REFERENCE SHEET	
Result	IR.3: Improved storage of non-perishable commodities
Indicator	Increase in quantity of commodities deposited in certified warehouses
DESCRIPTION	
Definition	Quantity of commodities refer the Metric Tons of agricultural produce that are stored in certified warehouses and placed under receipt
Utility	This indicator measures effectiveness of the program in improving storage for non-perishable commodities
DATA ACQUISITION	
Data Collection Method	The sub Contractor implementing this component will review warehouse records
Method of Acquisition	Records Review
Data Source	Warehouses and sub contractor implementing this component
Frequency of Data Acquisition	Semi annually
Responsible for Collecting	Field Staff
DATA QUALITY	
Quality Assessment	Once a year
Known Data Limitations	Lack of records
Actions taken to address data limitations	Maintaining a filing system of warehouses Establish documentation provided by sub contractor
DATA ANALYSIS	
Data Analysis	Comparative analysis
Reporting of Data	LOL: Quarterly/Annual Reports USAID: Results Report Sub contractor: Report
OTHER NOTES	
Baseline/Targets	The amount of commodities deposited in certified warehouses currently stands at 5,000Mt and this forms the Baseline value which the program is working with.

APPENDIX C

Data Storage
The program will maintain an electronic and/or physical files of ZACA records in order to document this performance indicator;
Disaggregating
Geographical Areas, warehouses
Unit of Measure
Mt per year

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PERFORMANCE INDICATOR REFERENCE SHEET NUMBER 15

INDICATOR REFERENCE SHEET	
Result	
IR.3. Improved storage of non-perishable commodities	
Indicator	
Number of warehouses certified	
DESCRIPTION	
Definition	Certified warehouses are defined as those warehouses that have passed the technical standards set by the Zambia Agricultural Commodity Agency (ZACA) and have been issued with a certificate of operation
Utility	The indicator is a measure of the program's progress towards increasing the amount of certified storage available to farmers in Zambia
DATA ACQUISITION	
Data Collection Method	Review of ZACA records
Method of Acquisition	Records Review
Data Source	ZACA Records
Frequency of Data Acquisition	Semi annually
Responsible for Collecting	Field Staff
DATA QUALITY	
Quality Assessment	Once a year
Known Data Limitations	Lack of records
Actions taken to address data limitations	Maintaining a filing system of warehouses Field Review Establish documentation provided by sub contractor
DATA ANALYSIS	
Data Analysis	Comparative analysis
Reporting of Data	LOL: Quarterly/Annual Reports USAID: Results Report Sub contractor: Report

APPENDIX C

OTHER NOTES	
Baseline/Targets	
Data Storage	The program will maintain an electronic and/or physical files of ZACA records in order to document this performance indicator; <ul style="list-style-type: none">• Sub contractor implementing this component
Disaggregating	Geographical Areas, warehouses
Unit of Measure	Mt per year