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# USAID KENYA DAIRY SECTOR COMPETITIVENESS PROGRAM

QUARTERLY PROGRESS REPORT

JANUARY 2011 - MARCH 2011

623-C-00-08-00020-00

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## List of Acronyms

BDS	Business Development Services
CAIS	Center for Artificial Insemination Services
DTF	Dairy Task Force
DVO	District Veterinary Officer
ESADA	Eastern and Southern Africa Dairy Association
FHI	Family Health International
GMP	Good Management Practices
HACCP	Hazard Analysis and Critical Control Points
HPI	Heifer Project International
ICT	Information Communication and Technology
IPM	Integrated Pest Management
NKCC	New Kenya Cooperative Creameries
KDB	Kenya Dairy Board
KDSCP	Kenya Dairy Sector Competitiveness Program
KENDAPO	Kenya National Dairy Producers Organization
KLBO	Kenya Livestock Breeders Organization
LOL	Land O'Lakes, Inc.
MBC	Milk Bulking Center
MOLFD	Ministry of Livestock Development
MOLD (DVS)	Ministry of Livestock, Department of Veterinary Services
NEMA	National Environment Management Authority
NGO	Non Governmental Organization
PCPB	Pesticide Control Products Board
PERSUAP	Pesticide Evaluation Report Safer Use Action Plan
PMO	Pasteurized Milk Ordinance
PMP	Performance Management Plan
RMC	Resource Mobilization Centre
SBO	Smallholder Business Organizations
SoW	Scope of Work
SITE	Strengthening Informal Sector Training and Enterprise
SNV	Netherlands Development Organization
SPs	Service Providers
USAID	United States Agency for International Development
WRUA	Water Resource Users Association
WWS	World Wide Sires Consortium

## Executive Summary

This report summarizes the key activities implemented and the associated accomplishments for the USAID Kenya Dairy Sector Competitiveness (KDSC) program. The report covers the **Quarter Two of Fiscal Year 2011**<sup>1</sup>. The KDSC activities contribute to the achievement of intermediate results under USAID/Kenya Mission's SO7 on "Increasing Rural Households Income."

During the period under review, the program continued facilitating capacity building of two industry associations. The KDSC engaged Rhoteach to build capacity of genetics suppliers in dairy following the formation of a Kenya Genetics Society of Kenya. Continued program engagement with the Kenya Livestock Breeders Organization (KLBO) contributed to increased number of dairy cows being registered, **with a total of 12,193 dairy cows having been registered with the Kenya Livestock Breeders Organization by the end of this quarter**. This is envisaged to contribute in the upward valuation of the dairy animals that result in the sale of these animals at a premium price.

The KDSC program strengthened its partnership with the Dairy Traders Association (DTA) in Nakuru Milk shed in the quarter. This partnership is meant to increase marketing options available to dairy farmers in the program area, and at the same time, to improve the quality of milk sold to consumers by these traders. Currently in Nakuru Milkshed, **DTA has 200 registered traders serving an average of 40 farmers each giving a total of about 8,000 smallholder farmers** that are contracted by the DTAs. At the same time, the program is exploring ways on how they can reach the smallholder farmers working with the DTAs in the milk shed so that they can benefit from KDSCP capacity building program. These would be treated as indirect beneficiaries and it's hoped in due course they can be attracted to some of the cooperatives in their areas or form one in the areas where none exist.

During the reporting period, the program **facilitated the development of bankable business plans** in a number of progressive SBOs in all the milksheds. The consultancy wing of the Kenya Industrial Estates (KIE) was engaged to carry out the exercise. **A total of 54 Bankable business plans have been developed accounting for about 50% of all action plans developed** during the quarter in the program area. A number of funding agencies, including financial institutions especially KIE, Krep bank, family bank and Cooperative banks have started evaluating some of the business plans with an intention of funding some.

Farmers and service providers made significant investments to improve performance of their dairy enterprises in the quarter. Ten **(10) chaff cutters from Simba Machinery were sold within the milk shed during the period. Sugo bought 5 lactometers while Singalo sold 54 milking and transporting cans to their farmers through their Agro vet on a check off system.**

The program finalized the development of an industry-wide web-based application that will serve as a complete dairy and livestock management information system for the livestock industry. During the period under review, a total of **11,924 farmers registered in the e-dairy Portal that included 3,666 women (30.7%)**. At the same time, a total of 38 companies who are service providers have registered and listed their products in the e-market place.

In the period under review, **the program benefited an additional 5,877 households resulting into a total of 213,848 households** having benefitted cumulatively since the inception of the project. **The program has therefore reached 85.5% of the total households targeted for by end of Year Four. The female members benefiting since the start of the program total to 94,093**

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<sup>1</sup> KDSCP CLIN year ends in April 30 however KDSCP Implementation year follows USAID FY structure

**that accounts for 44% of all beneficiaries.** The program is on course to meet the target by the end of the Year Four of implementation. Reaching the target would be possible as the program has embarked on reaching out to more beneficiaries through the expansion of membership in the existing SBOs. At the same time, the **program facilitated the establishment of ten (10) new SBOs during the period under review. This gives a total of 124 SBOs showing an achievement of over 100%.** This has been possible due to high mobilizations by the facilitators.

During this reporting period, the program facilitated capacity building of **over 14,769 dairy farmers resulting to a total of 86,979 of the target at the end of Year Four. This shows that the program has achieved 69% of the Year target. Among those trained in the quarter, 5,908 members were women (40%).** At the same time, a **total of 7,206 farmers have been accessing, receiving, and utilizing BDS services, inputs, technologies, and management practices during the quarter under review. The total number of farmers accessing BDS services by the end of this quarter therefore was 172,537 which accounts to 95.9% of the target by end of the fiscal year 2011.**

The impact of the project was realized during the period under review. From Lessos milkshed, **the price of milk reduced from Ksh 30 (US\$0.375) to KShs 23 (US\$0.2875) for non-contracted farmers while farmers working with the program under valid contracts continued to enjoy the prices agreed with the processors.** This has been a good encouragement for those who had signed the contracts.

Program interventions have contributed to a sustained increase in cow productivity compared to baseline. Results show that productivity has increased by 26.2% resulting into **yields of 8.2 liters/cow/day during the wet season.** This shows that the program **achieved 58.6% of the target by the end of Year Four (14 litres/cow/day).**

The usage of fodder crops has significantly improved compared to baseline. From all dairy farmers interviewed, about 98% of them have established and currently use some of the fodder crops for their dairy cows. The proportion of **farmers with Napier grass has increased to 88.2% in Year Four as compared to 79.5% at baseline. The gross margin reported by dairy farmers is KShs 8.4 (US\$ 0.105) which shows an increase of 44.8% compared to the baseline values. This shows that the program has surpassed the target of 32% by the end of Year Four.**

The program has also realized impressive progress in income levels in the three years of implementation. Survey **results reveal that income realized from dairy currently is Kshs. 5032.6(US\$ 62.91) per month, an increase of about 146% compared to baseline. We have surpassed the target value of 60% by the end of Year Four of the project implementation.** The increase can be attributed to the slight increase in productivity, reduction in cost of production and increase in average price as a result of project interventions.

**A total of 35 SPs were linked with SBOs in the program area in the reporting period. This gives a total of 867 SPs translating to over 148% achievement based more than the target (350) by the end of Year Four of the program.** These experts work with and deliver productivity enhancing technologies to specific farmer groups.

In this quarter, the KDSCP team introduced **4,181 dairy (2,341 women) farmers** to credit facilities resulting into **a total of 36,734 farmers linked to credit facilities against a target of 36,000**

**surpassing the target by 2%. Of all members linked to credit facilities, about 36% of them were women.**

The main challenge reported during this quarter was **volatility in the milk market**. The inability by the dairy milk processors to absorb milk produced by farmers in the quarter, lead to non-collection of milk, low milk prices and delayed farmer payments. **The other challenge was the sudden lowering of prices by NKCC**, a major raw milk buyer has affected the performance of SBO'S by members opting to sale their milk to milk traders who offer better prices hence affecting the volumes. However, since the price reduction only affected those without supply contracts, it has reinforced the importance of having Supply Contracts with processors which can only be facilitated through cooperatives.

## **1.0 Introduction**

Land O'Lakes is implementing the USAID Kenya Dairy Sector Competitiveness (KDSC) program with the financial support of the United States Agency for International Development (USAID). KDSC is a five-year program that aims to improve Kenya's dairy industry competitiveness. Under this program, Land O'Lakes, Inc. employs a market-driven value chain approach, utilizing a Business Development Services (BDS) methodology. KDSC will help transform the Kenyan dairy industry into a globally competitive, regional market leader, with the overall goal of increasing smallholder household income from the sale of quality milk. Land O'Lakes is facilitating this transformation, while the industry stakeholders are leading it.

The program objectives are three-fold:

- Increase competitiveness of the Kenyan dairy sector through collaboration among sector stakeholders and increased capacity of public sector agencies to serve the needs of the sector;
- Increase marketing of milk meeting quality standards by producer-owned milk bulking/cooling businesses; and
- Enhance access to business development services and technologies.

In its implementation, the program pays particular attention to environmental and gender concerns and effects corrective action as appropriate. KDSC takes into account the varying roles, assets, knowledge and skills that men, women and youth bring to dairy farming. The program therefore facilitates the implementation of opportunities for integrating youth and family members into dairy value-chain economic activities.

### **Towards Strategic Objective 7**

KDSC contributes to the USAID Strategic Objective 7.0 on "Increased Rural Household Incomes." The program is implemented through a range of activities grouped into three broad components. The components and the associated deliverables are:

**Component 1: Enhanced Capacity for Milk and Production Input Quality Certification and Market Promotion**

Deliverables include:

- Increased smallholder household income
- Increased use of technology
- Improve and enact industry policies and acts that enhance competitiveness
- Develop and implement/enforce quality certification frameworks and work towards a graded payment system
- Dairy enterprises achieve national/international certifications and enforcing quality regulations on suppliers
- Increase feed marketed under new quality standards

## Component 2: Dairy Smallholder Business Organization (SBO) Development

The key deliverables are:

- Producer organizations strengthened.
- Increased number of milk bulking centres (MBC) with Hazard Analysis and Critical Control Points (HACCP) and /or SBOs with national certifications.
- Increased raw milk sales by SBOs under agreements that pay premium for quality.
- Increased gross revenue of milk bulking/cooling businesses from sale of inputs and services other than milk.
- Increased number of SBOs transformed into sustainable businesses entities.
- Increased number of cooling units installed/rehabilitated by SBOs

## Component 3: Availability of Dairy Business Development Services

Key outcomes/ impacts will include:

- Enhanced range of business services to producers.
- Increased value of services/inputs provided by business service providers.
- Increased number of smallholders purchasing private sector services at full commercial rates.
- New technologies or management practices made available for transfer.
- Increased number of dairy farmers receiving loans from financial service providers.
- Increased number of smallholders engaged in new, diversified dairy-related enterprises.
- Increased number of dairy farmers receiving short-term training.

## Implementation Strategy and Key Activities

KDSC is implemented using innovative, international best practice approaches and methodologies that ensure achievement of expected results and sustainability of impacts long after the end of the program. Using local service providers and facilitators, Land O'Lakes, Inc., the implementing agency, supports market-based services/solutions, and action-oriented policy research to overcome both industry-level and enterprise-level constraints to competitiveness at key points along the dairy value chain. Industry stakeholders have since been engaged to identify competitiveness constraints, and propose solutions to these constraints.

## 2.0 Program Implementation

KDSC program has continued to address sector challenges, constraints and stakeholder concerns in all the milksheds and has realized significant achievements. Program efforts in the quarter especially focused on putting in place sustainable solutions to the challenge posed by increased milk production observed in the previous quarter and in the reporting period. As previously reported, the country has been experiencing increased supply of milk over and above the retailing capacity of the formal sector. This has led to the stockpiling of processed milk products, especially long life milk and powder milk. Formal milk traders have responded by reducing farm gate prices – in some cases by close to 47% compared to farm gate price in the previous years, which has led to a number of farmers who were previously selling to the formal milk market through Smallholder Business Organizations (SBOs) working with the program opting to sell to informal milk traders. This has implications especially on sustaining the realized farm level productivity gains, household incomes - given the fluctuating/volatile manner of prices offered and reduced farmer bargaining power and on consumer safety due to the unhygienic manner in which some informal sector traders handle this milk. To help solve this problem, the program focused on identifying and operationalizing sustainable solutions by working with SBOs to negotiate longer term contracts and supported initiatives that would contribute to the expansion of both the domestic and export markets. These SBOs have been earmarked to be able to operate as sustainable business entities in the respective milksheds.

The KDSC program has also been considering various alternatives to expand the domestic market – both institutional and informal- for the SBOs working with the program in a bid to stabilize milk price across seasons. The program has held formal discussions with the Dairy Traders Association (DTA) in some milk sheds towards this end, especially in milk sheds close to non-milk producing areas and main cities such as Kabete and TransNzoia where the DTA account for a significant proportion of milk traded. To safeguard consumer safety, the program is looking into ways of working with the DTA to build the capacity of members on milk handling and hygiene. DTA has been very supportive to the dairy sector and has been able to carry out training on milk quality in all the milk sheds in the country.

Program efforts aimed at expanding the export market received a significant boost in the previous reporting period with the official launch of a milk quality improvement program, that will be driven by the Good Manufacturing Practices (GMP) and the revised version of the Hygienic Code of Practice standards whose review was facilitated by the program. The launch marked the beginning of a 'Milk Quality Improvement Program' that will be managed by the KDB. This presented a key milestone for the local industry and will realize immense returns for the industry long after the program ends.

During the reporting period, the program embarked on the development and analysis of action plans in all the SBOs working with the project to be implemented in the fourth year of implementation. Each of these actions plans have been evaluated by the project staff and will enable the SBOs to have implementable business plans. In this regard, the program contracted KIE consultants that have **facilitated the development of bankable business plans** in selected progressive SBOs in each of the milksheds. Financial institutions have started evaluating some of the business plans with an intention of funding some.

Detailed activities and achievements in the reporting period are summarized below and are organized by program component.

## **2.1 Component One: Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion**

The program continued to build the capacity of livestock genetic suppliers for the dairy sector during the reporting period. The KDSC has been working with consultants to build capacity of two industry associations during the reporting period. Rhoteach has been in the forefront in building the capacity for genetics suppliers in dairy following the formation of a Genetics Society of Kenya. Key specific activities include developing the standards for accreditation of AI service providers and create linkages for institutions offering refresher courses, build capacity of service providers to better communicate the benefits of animal registration to farmers, identify financial products that support AI service providers and to define action plans to improve performance of dairy breeding, among others.

Due to the intervention measures promoted by the program to increase the value of the dairy animals in the program area, the program through its service providers and collaborators **registered a total of 12,193 dairy cows with the Kenya Livestock Breeders Organization**. This is envisaged to contribute in the upward valuation of the dairy animals that result in the sale of these animals at a premium price. In Lessos milkshed, KLBO trained the service providers on basic cow registration documentation and shall allow the trained service providers to play the role of filling in cow registration forms on behalf of KSB and to have the SBOs forward the filled up forms to KSB for official registrations.

AHEAD consultants successfully completed their mandate of building the capacity of the feed manufacturers association. A key output of their task is the linkage of accredited AKEFEMA members with the SBOs working with the program. Other activities include developing an accreditation procedure for AKEFEMA and to ensure at least 20 members are accredited, develop a code of practice, create a data bank of nutritional specifications using local materials, among others. The consultants have trained feed manufacturers from all the milksheds. The topics of focus were on dairy cow nutrition with specific focus on dairy meal quality, quality parameters and benefits of contractual agreements.

Other program achievements in the quarter include finalizing the development of an industry-wide web-based application that will serve as a complete dairy and livestock management information system for the livestock industry. The application has been able to provide an easy interface for initial and subsequent data collection and analysis. It has enabled and enhanced information sharing among stakeholders in the sector. Details of a sample of Component One activities and outputs realized in the reporting period include:

### **2.1.1 Towards competitiveness: Launch of the Milk Quality Improvement Program**

With the objective of expanding the market and enhancing competitiveness of the dairy sector, the industry stakeholders, led by the Kenya Dairy Board (KDB) launched a Milk Quality Improvement Program aimed at ensuring consumer safety and expanding the export market. The campaign that is informed by a number of outputs of the KDSC program's quality interventions, especially the Good Manufacturing Practices (GMP) and the revised version of the Hygienic Code of Practice standards have contributed positively towards the improvement of milk quality in the country. At farm level, KDSC emphasizes the quality interventions which are expected to improve milk handling practices and the quality of milk reaching consumers, while lowering the volumes of milk rejected due to non-compliance with set quality standards at the farm gate, thus increasing farm incomes. In this quarter, the quantity of milk rejected has tremendously reduced showing the impact of the utilization of hygienic standards promoted by the program. **This can be authenticated by decrease in quantity of milk rejected in this quarter that was only 70 litres in Lessos milkshed as compared to 6015 litres rejected in 2010.**

Program interventions targeting milk quality improvement have included provision of technical assistance in the review of dairy standards and facilitating training of KDB regulatory inspectors on Pasteurized Milk Ordinance and Regulatory Inspection. The program has also helped expose the inspectors to the United States of America's (USA's) regulatory inspection systems, practices and techniques – especially the US Pasteurized Milk Ordinance, which is critical in ensuring milk quality through the value chain. Program efforts have also targeted the development and enhancing access to reader friendly industry standards/manuals in collaboration with the KDB and other stakeholders.

During this period, the program strengthened its partnership with the Dairy Traders Association (DTA). The DTA is represented in the Production and marketing sub-committee of the Dairy Task Force and at the Milkshed Working Groups. We reinforced the agreement to share information and undertake activities to improve their operations and performance. KDSCP has been in the forefront in promoting consumption of high quality milk in the country. During this period, KDSCP strengthened DTA so as to enhance quality milk consumption by the public. DTA has expanded its membership tremendously in order to reach more members. Through the support of the KDSCP, there has been change in policies regulating the dairy sector. With commitment from all stakeholders in the dairy industry, there has been a constant increase in membership of the DTA owing to the new government directive that unpasteurised milk sales in municipalities shall be outlawed from January 2011. Currently in Nakuru Milkshed, **DTA has 200 registered traders serving an average of 40 farmers each giving a total of about 8,000 smallholder farmers.** At the same time, Nakuru Milkshed is exploring ways on how they can reach the smallholder farmers working with the DTAs so that they can benefit from KDSCP capacity building program. These would be treated as indirect beneficiaries and it's hoped in due course they can be attracted to some of the cooperatives in their areas or form one in the areas where none exist.

In TransNzoia Milkshed the program is working closely with Kenya Dairy Board (KDB) and DTA in the branding of the Milk Bars in the Milkshed, training on milk handling hygiene and quality standards within the Livestock Farmer Field School (LFFS) sessions. The volume of milk being sold through the informal market (DTA) was estimated at **177,900 litres** in the month of March in TransNzoia. The facilitators are guiding the groups on ways of exploiting the Western Kenya milk market and also see ways of acquiring milk dispensers and pasteurizers to add value to their milk.

The program also emphasized on market expansion to cushion farmers from falling milk prices due to the increase in milk production. In order to produce high quality milk meeting the EAC Dairy standards and other technical requirements as stipulated in the drafted dairy regulations particularly at the farm level, farmers will incur additional costs in acquiring the appropriate milk handling containers, enhancing hygiene and organizing for quick milk delivery to the milk collection centres. However, the benefits of improved milk quality are substantial and cannot be over emphasized. Kenya Dairy Board in collaboration with stakeholders is therefore developing a framework plan of differential payments for quality, to enable a pilot trial to be run out in the coming months with guidance from a KDSCP consultant. The details will be publicised to our stakeholders as the design of the trial progresses.

The launch of the milk quality improvement program presents a foundation for milk quality improvement in Kenya. It will go a long way in aiding sector players to implement the basic requirements necessary for hygiene to ensure consumer safety and boost regional and international trade, especially now that the East African Community (EAC) has adopted a free trade area. This is expected to contribute to Kenya's vision 2030 of halving poverty and/or improving income to the middle income level.

**Summary of key program activities and accomplishments geared towards milk quality in the reporting period include:**

### **Trained 372 dairy operators on Good Manufacturing Practice (GMP)**

Fundamental to the success of public health interventions and the strengthening of consumer confidence in our products is a requirement that all dairy operations are conducted in a safe, sanitary and hygienic way, in premises and buildings that meet public health safety requirements. In 2009, the Kenya Bureau of Standards National Dairy Technical Committee produced a new Standard entitled, Good Manufacturing Practice (GMP) guideline for the Dairy Industry in Kenya. This was considered necessary to provide the backbone for a nationwide GMP training effort. Three dairy business categories have been targeted for training on Good Manufacturing Practice. These are Milk Bulking Centres, Milk Bars and Shops and Dairy Processing Plants. Naivasha Dairy Training Institute was contracted to provide the training throughout the country. During the quarter under review, a total of 10 trainings were conducted by the Naivasha Dairy Training Institute (DTI) and 372 dairy operators were trained giving a total of 1441 operators trained by the program of which 352 were women (24.4%). This contributed to 80% of program target during the initiation of the activity.

### **Review of the Kenya Dairy Regulations**

The program contracted an advocate to review the proposed Kenya Dairy regulation to enable the document be passed into law in the quickest possible timeline. This activity was initiated during the last quarter so as to make the established regulations already drafted by the program to become effective after being passed into law. In this regard, Lesinko advocates had been contracted and tasked to carry out the activity. The drafted Kenya Dairy Regulations lay the foundation for all the other components in our quality programme. The regulations describe the requirements for production, storage, transportation and processing of milk and milk products along the chain. The regulations also give technical specifications for processing equipment and quality surveillance. Individual sections of the regulations deal with each link as the milk progresses from the cow to the consumer. The new Dairy Regulations have been reviewed and approved by stakeholders. Adoption of these detailed technical requirements represents a leap in technology and competence for our industry. It is therefore expected that once the review of the draft is complete, the Dairy Regulations will be legislated under the existing Kenya Dairy Act later this year.

#### **2.1.2 Enhancing milk market through facilitating processor's capacity**

The program acted on the request from Sundale processors Lari Dairy Alliance LTD (LDA) to assist in turning around their milk processing business and by engaging a Cooperative Consultancy Services (CCS) firm to offer various business turnaround capacity building foundational activities. During the quarter under review, the CCS team had carried out their field activities and recommended immediate strategies used as stop gap measure in order to ensure that the processing unit does not become redundant. The firm ensured steady milk supply to the facility with prompt payment to the primary producers that facilitated the operations of the facility. The CCS has embarked on a detailed development of long-term turnaround strategy and will involve KDSCP Kinangop team to provide technical assistance during the implementation of CCS outputs until the LDA records operations to full capacity at optimum performance.

### 2.1.3 Completed developing an industry-wide web-based application for the livestock industry

The finalized industry-wide web-based application has started serving as a complete dairy and livestock management information system for the livestock industry. The application provides an easy interface for initial and subsequent data collection and analysis. It has enhanced sharing of information among stakeholders in the sector. The system, has modules for all the actors in the value chain—farmers, farmer groups, processors, insurance and financial institutions, semen distributors, animal health providers, among others.

All industry stakeholders have been sensitized on its benefits, resulting in more players requesting for modules with private breeders being the latest category of industry players to request for their own module. This will especially help link the breeders to prospective customers in the country. There is no exhaustive list of livestock breeders in the country at the moment. The KDSC program is currently working with farmers to register their details in the portal.

Using the e-market place, the buyers have been able to search for and find the range of products and services most relevant to them and also compare the prices. Buyers have been capacitated to visit the website of the supplier through link provided on the supplier's profile in order to evaluate the products offered by respective sellers. The program facilitated the training of coordinators from all the eight milksheds as well as AKEFEMA representatives that cover 70 feed manufacturers. By the end of the quarter under review, a total of **11,924 farmers registered in the e-dairy market place that included 3,666 women (30.7%)**. At the same time, a total of 38 companies who are service providers have registered and listed their products in the e-market place.

At the same time, an E-mail has already been sent to 200 Relevant Companies which include, feed manufacturers, Processors, AI Suppliers, Financial Institutions; Bulk SMS Campaign has been planned for 5,000 Agro-Vet shops across Kenya (Database available); another bulk SMS campaign has been planned for 5,000 relevant feed & agro product manufacturers (Database being built); and more bulk SMS campaigns are planned for over 1000 vet doctors, AI technicians etc. The progress of these will be reported in our future reports.

The program has embarked on the evaluation exercise for the e-dairy portal. This activity is aimed at carrying out a sustainability study of the web-based dairy portal with biases towards hosting of the system and usage at cost-effective level by all stakeholders. During the next quarter, the program will report the findings of the evaluation exercise to enable the industry know how sustainable can it be with exit of the program.

#### **Collaborative Activities**

The KDSC team has continued its collaborative work with other stakeholders in the dairy sector. During the month of March, the government officers in Nakuru milkshed supported the program as the meetings were held in Mumberes, Ngorika, Tuungane and Dip attendance in Koibatek. The training involved good dairy practices and management of Dips. The Dip attendance meeting was conducted together with Cooper Kenya as supplier. The Ministry of Co-operative have managed to conduct election for Tuungane Co-operative society and current management will undergo capacity building training to fully understand their roles. KLBO has a Memorandum with KDSC Lessos for which it was agreed that KLBO will train the service providers contracted by the dairy farmers' organizations partnering with the KDSCP Lessos milkshed. While the KDSCP will mobilize the dairy farmers

organizations (SBOs), select business service providers (BSPs) contracted for service delivered by SBOs. During this quarter, KBLO trained and shall allow the trained service providers to play the role of filling in cow registration forms on behalf of KSB and to have the SBOs forward the filled up forms to KSB for official registrations and issuance of official registration certificate to the concerned farmers as per their best practice standard

## 2.2 Component 2: Develop Dairy Smallholder Business Organizations

During the quarter, the KDSC program continued linking Small Business Organizations (SBOs) to inputs and services to enable these organizations to grow their businesses. During the period under review, **the program has benefited a total of 5,877 households resulting into a total of 213,848 households** having benefitted cumulatively since the inception of the project. **Thus, the program has reached 85.5% of the total households targeted. The female members benefiting since the start of the program total to 94,093 that accounts for 44% of all beneficiaries.** This shows that the program will most likely surpass this target by the end of the Year Four as this in real sense is the end of Third Year of actual program implementation. Reaching the target would be possible as the program has embarked on reaching out more beneficiaries through the expansion of membership in the existing SBOs. At the same time, the **program facilitated the establishment of ten (10) new SBOs during the period under review. This gives a total of 124 SBOs showing an achievement of over 100%.** This has been possible due to high mobilizations by the facilitators.

Program intervention has continued to record positive results. The performance of Seum Dairy cooperative society is an indicator of uptake of the intervention measures promoted by the project. The group management committee of Seum cooperative attended a training organized by KDSCP on Milk Bulking and Marketing. The SBO is benefiting from milk bonuses through Cherengany Dairy Group whom they are affiliated to through the federation arrangement facilitated by the program. The group is providing AI and dipping services to the members and none members at a differential price scheme. They are also in the process of buying a digital weighing scale in the coming 2 months. The leaders attended the Business Plan writing workshop by KIE.

Farmers from Seum Cooperative Society are adding value to the maize stovers by treating the same with urea and yeast and subsequently feeding to the cows to increase milk production especially during the dry period. Farmers have embraced value addition of feeds through urea treatment technology, **with over 300 bags of maize stovers being ground for value addition** and subsequent feeding to the animals for good condition and more milk. Training is being undertaken on relevant topics in dairy production and management. The members of the group **have bought 20kg of fodder yeast and 10 pieces of silage tubes to add value to maize stovers** for feeding to their animals during this drought period.

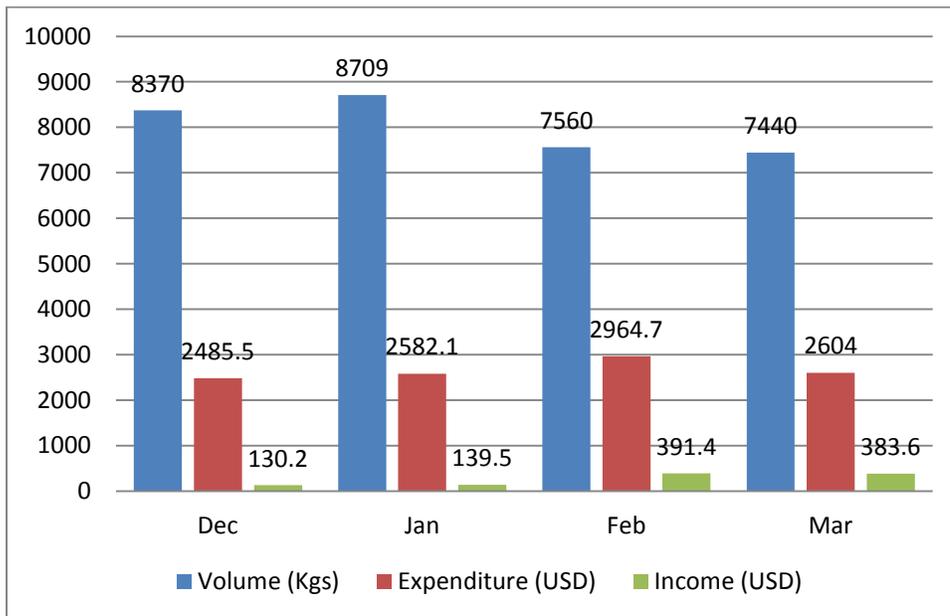


Figure 1: Performance of Seum Dairy Cooperative during the quarter

### 2.2.1 Facilitated working linkages between farmers the SBOs working with the KDSC program

The program continued providing information on input supply sources, linking producers with the suppliers, linking businesses/enterprises to financial service providers and helping the SBOs and service providers meet conditions to access credit. The KDSC program also provided market information and access to services and provided training and technical assistance to the producer groups. During the quarter under review, **a total of 35 SPs were linked with SBOs in the program area.** This has been achieved due to overwhelming response by the SPs to business opportunities presented by the dairy sector. Due to the increased number of SPs there has been an increase in technological transfer resulting into increased purchase of dairy machinery, ICT accessories like digital weighing scales and computerization, pulverisers and chaff cutters. The SPs have also contributed in the increase of the number of beneficiaries and those trained in the program area.

#### Market access services

The program continued providing market information, facilitating market linkages, and engaged in market research for the producer groups working with program in the reporting period. The KDSCP has been engaging cooperative members with the aim of bringing together members of different cooperatives under one organized unit to enable them raise a higher quantity of milk to be delivered to the processors that will entitle the members to earn bonuses. In TransNzoia milkshed, the program facilitated the formation a federation during this quarter. The federation has picked up very well bringing the farmers in the milkshed together.

In the process of improving market access of milk in the program area, the KDB participated in training the SBOs on quality control and sensitized the SBOs on the importance of bulking in this period under review. During the training, the KDB personnel stressed the importance of bulking milk in order to improve their business. **In TransNzoia milkshed, the chilling of milk is being compensated at Ksh1 per liter by NKCC.** KDB worked very closely with the KDSCP in enhancing marketing cooperation between the existing SBOs and Self Help Groups in order to come up with viable bulking units. During the period under review, the KDB manager facilitated the formation of federation between Iten (Keiyo gaa) and Progressive Karona.

The impact of the project was realized during the period under review. From Lessos milkshed, **the price of milk reduced from Ksh 30 (US\$0.375) to KShs 23 (US\$0.2875) for non-contracted farmers while farmers working with the program under valid contract continued to enjoy the prices agreed with the processors.** This has been a good encouragement for those who had signed the contract. In Nakuru milkshed the key markets are largely being provided by the Brookside, NKCC, Buzeki and Happy Cow. In general the milk prices range from Ksh25 (US\$ 0.3125) to 30 (US\$ 0.375) per liter of milk delivered to the processors this depends on the volume of milk bulked. During the month of March, Buzeki paid the farmers up to KShs 29 (US\$ 0.3625) per liter, NKCC KShs 27 (US\$ 0.3375) and Brookside KShs 27 (US\$ 0.3375) and these prices have motivated the farmers to sell to the above processors.

The impact of federation was observed in Cherengany Dairy Group (CDG) during the month of March 2011. Even though the production dropped to less than 10,000 litres a day, the prices remained constant at Ksh 31 (US\$ 0.3875) as their contract was reviewed after the intervention of the program. The Cherengany group is working closely with KDSCP to ensure all the groups in TransNzoia federate with them to earn volume bonuses and later form a company to market the milk and in future do processing. A stakeholder's forum which met twice in the month concluded that CDG transform from a self-help group to a cooperative and that a company be formed where all groups marketing milk or individuals interested can buy shares. Surungai, Seum, Koitogos, Kipsaina, Meeboot, Naitiri and Tongaren are marketing their milk through CDG thus earning better prices compared to others.

### **Training and technical assistance**

Program activities in addition focused on developing business plans for the SBOs working with the program. Through the technical assistance from KDSCP, a total of **54 business plans were finalized during this quarter** and these will continue to guide the SBOs. These business plans were reviewed and revised by KIE to make them more bankable. In light of this, some financial SPs have started considering some of the business plans with a view of funding them with recovery using check off system. These business plans are guiding the SBOs on the way forward and have been useful in determining the viability path for the SBOs. The use of the same is expected to bring forth positive impact on how business is being transacted.

#### **2.2.2 Facilitated capacity building of over 14,769 dairy farmers in the quarter**

During this reporting period, the program facilitated capacity building of **over 14,769 dairy farmers in the quarter resulting in achievement of 69% of the Year target. Among those trained in the quarter, 5,908 members were women (40%).** At the same time, **a total of 7,206 farmers have been accessing, receiving, and utilizing BDS services, inputs, technologies, and management practices during the quarter under review. The total number of farmers accessing BDS services by the end of this quarter therefore was 172,537 which accounts to 95.9% of the Year Four target.** Program interventions focused on training dairy farmers to equip them with the

necessary technical skills to increase herd productivity and incomes. The training forums, organized in collaboration with key stakeholders such as private service providers, Ministry of Livestock extension personnel and Kenya Dairy Board (KDB) covered diverse topics such as feed/fodder production, appropriate feeding regimes, feed conservation and formulation, modern breeding techniques and milk handling hygiene. Other areas covered include infertility, dairy as a business and disease control. There was emphasis on the on-farm demonstration on feed conservation techniques to enable smallholders conserve feed to stabilize milk yield and farmer incomes.

In order to reach all the farmers in this quarter, a total of 57 livestock farmer field schools (LFFS) were established. Each of these LFFS had an average of 25 members. At the same time, 69 demonstration farms were set up and this enabled more members to be reached. Other members were reached through field days and ASK shows. The Cherengany group held a field day on 11<sup>th</sup> March 2011 which was organized by members of the Milk shed Working Group (MSWG) and the program and attracted 18 exhibitors including Sameer Africa. A total of 211 farmers registered although attendance was estimated at 400



Figure 2: A farmer receives pasture seeds from Kenya Seed representative during Cherengany Dairy Group field day

The KDSC program requires private service providers to be the ones to train farmers, and this has proved a key challenge that has contributed to the lag in meeting the targeted number of farmers trained. The majority of service providers still do not see value in training farmers and want to be paid by the program. The service providers who appreciate extension provision have however taken this up and are training farmers as part of business promotion.

The second challenge has been the low milk prices that have been prevailing locally since January 2010. Farmers have been complaining of the low prices or even non-collection of milk by processors in some instances, and ask why we want them to increase production when their milk will not be collected. Very few farmers attend program organized training events. This is however changing with the slight increase in milk price and the program efforts in identifying alternative markets. At the moment, the program has prioritized sensitization of farmers on the benefits of joining organized societies like cooperatives. Through the formation of federations with the facilitation of the KDSC team, some of the dairy farmers in TransNzoia Milkshed joined Cherengany federation consisting of Seum, Rongai, and Koitogos farmer cooperatives. In this federation, dairy farmers have been able to negotiate the price of milk with NKCC processors from as low as KSh 24 (US\$ 0.3) per litre to KShs 32(US\$ 0.4) per litre for a volume of 7500 litres per day. The contract remains valid for the next six months.

## **Development of Bankable Business Plans**

During the reporting period, the program embarked on the development and analysis of action plans with the help of consultants in all the SBOs working with the project. All the SBOs working with the program have developed action plans to be implemented in the fourth year of the project. Each of these actions plans have been evaluated with the technical assistance by the project staff so as to enable these SBOs have an implementable plans in terms of business. In this regard, the program contracted KIE consultants that have **facilitated the development of bankable business plans** in each of the milksheds. **A total of 54 Bankable business Plans have been developed accounting for about 50% of all action plans developed** during the quarter in all the program area. Financial institutions especially KIE, family bank and Cooperative banks have started evaluating some of the business plans with an intention of funding these in dairy sector

## **Formation of North Rift AI Providers Group**

The program has facilitated the formation of North Rift AI providers group to enable efficient and coordinated activities regarding the services offered by AI service providers in TransNzoia milkshed. The Group through the guidance of the program has continued to grow, with the total sale of semen increasing tremendously. The group in collaboration with KDSCP MOLD, WWS, ABS, Pokea farm and ADC facilitated the official launch of the distributorship which was attended by animal health technicians, AI technicians and farmers.



Figure 3: Chairman North rift AI Project Chairman Mr. George Kamau addresses participants during the launch

### **2.2.3 Increased uptake of technology**

There has been a continued and steady uptake of IT and other technologies in all the milksheds. The IT uptake has been remarkably high in Nakuru milkshed. Ngorika, Suka, Mogotio, Kiplombe and Mumberes have all purchased computers to hasten data handling. Internet access is already a reality for Mumberes,

Ngorika and Mogotio. The program has planned sensitization of the SBO management on the need to move forward and install milk cooperative business software available for easier handling of bulk data. Uptake of IT is remarkably encouraging in the program area. Different SBOs have been able to purchase computers to hasten data handling. This prompted the manager of Kirichu dairy Ms. Rose Maina to undergo a course in computer packages sponsored by her cooperative. This is geared to assisting the dairy cooperative to embrace computer technology to enable it manage information efficiently. The Program facilitated **the purchase of 2 digital weighing scales**; one for Surungai Dairy Cooperative Society and the other for Taito's Kipsaina Group.

During the quarter, the program has been in the forefront of improving the quality of milk through promotion of value addition technologies. In Lessos milkshed, three SBOs namely Bidii, Sugoi and Kipsamo started value addition of their milk whereby **SBO members have started making cultured milk (mala) and yoghurt of various fruit flavours. Another SBO (Seum cooperative) from TransNzoia milkshed has embraced value addition of feeds through urea treatment technology, with over 300 bags of maize stovers** being ground for value addition and subsequent feeding to the animals for good condition and more milk. Training is being undertaken on relevant topics in dairy production and management. The Seum Cooperative members have **bought 20Kg of fodder yeast and 10 pieces of silage tubes to add value to maize stovers** for feeding to their animals during this drought period.

During the quarter, service providers have promoted chaff cutters and generators that enable Farmers and bulking centres to perform dairy activities at optimum level. This is expected to improve their feed utilization efficiency/reduce feed wastage while at SBO levels reduce wastage. In Lessos milk shed, **Ten (10) chaff cutters from Simba Machinery were sold within the milk shed during the period. Sugoi bought 5 lactometers while Singalo sold 54 milking and transporting cans to their farmers through their Agro vet on a check off system.** In Kinangop milkshed, farmers **bought 3 varieties of fodder sorghum** seeds during farmer exchange visits which are suitable for fresh feeding as well as for silage making. Farmers also purchased sweet potato planting vines for 3 varieties that will be propagated in the farms for sale to their neighbors in the next project phase. In Lessos milk shed **farmers spent USD 5,093 on AI services and USD 4,573 on dairy feed** showing signs of project sustainability. It is worth noting that in Lessos milkshed, **a total of 864 animals** were reported as inseminated in the month of January.



Figure 4: Mr. Misosi from Surungai receive the digital weighing from Mr. Pascal of KDB

## Federation activities in the quarter

All the SBOs in the TransNzoia milkshed through KDSCP initiative, have agreed to work together by supplying their milk under one number; as a result they have agreed to deliver their milk through Cherangany Dairy Group. The group has also nominated 3 members to steer the process led by Mr. Samuel Mwaura Bernard Ndiema and Justus Wekesa. The leaders have formed an umbrella body called **TransNzoia Milkshed Group (TMG)** which will eventually be transformed to either a company or union. This strategy is to help them attract volume bonuses, and also invest in future to market milk in the milk deficit areas. The federations are **Naitiri, Kipsombe & Tarakwa**, and Cherangany Dairy Group. The other federations are Taito Federation comprising of **Jamii, Kipsaina, Kapsara, Kosegon, Kaisagat**. In Marakwet, the federations are the Highlands Consortium in Marakwet East and the Koisungur group in Marakwet west delivering their milk to NKCC Iten depot. Marakwet federation extended its activities in northern parts of the county at Kaptalamwa which will also cover southern Pokot.

KDSC has also facilitated the formation of the federation of dairy cooperatives at the national level. In this effect during the period under review, the program successfully facilitated a meeting of all registered Dairy Federations in the country. The output of this meeting was the formation of Kenya Dairy Farmers Federation representing all Milk sheds.. This therefore is aimed at having a common platform whereby all dairy farmers can be able to share ideas, evaluate dairy policies and seek measures to improve the performance of the dairy sector and more important have a farmer organ that can engage regulators, processors and other stakeholders in the dairy sector A care taker committee is in place and is now working on name search, registration and development of a constitution and a strategic plan. Program farmer level capacity building activities have resulted in considerable benefits to the participating farmers. A sample of the benefits included:

A farm level survey conducted in the quarter reveals that the KDSC has contributed to the increase in cow productivity. Results show that productivity has increased by 26.2% resulting into **yields of 8.2 liters/cow/day during the dry season**. This shows that the program **has been able to achieve only 58.6% of the target by the end of Year Four (14 litres/cow/day)**.

Table 1: Productivity of milk in the year 2011 in Lts/cow/day

Respondent Category	Mean Yield 2010 wet season	Mean Yield 2010 dry season	Average yield in 2010	Average yield in 2011 wet season
<i>Baseline – August, 2008</i>	6.5	6.5	6.5	6.5
<b>Whole sample</b>	<b>7.9</b>	<b>8.1</b>	8.0	<b>8.2</b>
<b>Sex</b>				
Male	7.9	8.13	8.0	<b>8.2</b>
Female	7.4	7.89	7.6	<b>8.3</b>
<b>Age of farmer</b>				
Youth	7.1	8.22	7.7	<b>6.1</b>
Above 30 years of age	7.8	8.06	7.9	<b>8.2</b>
<b>Milkshed</b>				
Nyeri	8.0	7.01	7.5	<b>7.2</b>
Gatanga	7.18	8.05	7.6	<b>7.5</b>
Kabete	10.0	10.6	10.3	<b>11.7</b>
Lessos	8.3	11.16	9.7	<b>10.7</b>
TransNzoia	7.4	6.74	7.1	<b>4.8</b>
Kericho	6.8	5.54	6.2	<b>6.1</b>
Nakuru	7.0	7.91	7.5	<b>7.1</b>
Kinangop	8.1	8.08	8.1	<b>10.8</b>

As shown in Table 1, there was no significance difference in productivity by sex with male headed households recording 8.2 litres/cow/day while female headed households having 8.3 litres/cow/day. This can be explained by the fact that since all those interviewed were members of the SBOs, all of them were exposed to these technologies.

In order to increase the competitiveness of the dairy sector, the program has concentrated in activities that would result in reduction in cost of production: Program promoted cost-cutting feeding regimes, including adoption of crop residue preservation, hay, silage, leguminous fodder technologies (Lucerne, desmodium, caliantra), and own feed formulation (use of molasses and microbes). These resulted in the reduction in cost of production by over 27% against the 20% targeted at the beginning of the program in year four. As reported in Table, the cost of milk production reduced to **Kshs. 10.30 (US\$ 0.129) in the fourth year (Table 2)**. The adoption of the high crude protein and palatable *Lucerne* and *Desmodium* fodder species have significantly reduced farmers reliance on expensive cereal-based commercial concentrates such as dairy meal.

**Table 2: Cost of production - 2011 and cumulative program figures in US\$/litre**

Respondent Category	Cost of production-wet season	Cost of production-dry season	Cost of production in 2010 wet season	Cost of production in 2011 wet season	Cumulative moving average
<i>Baseline – August, 2008</i>	<i>Ksh. 14.20 (US\$ 0.178)</i>	<i>Ksh. 14.20 (US\$ 0.178)</i>	<i>Ksh. 14.20 (US\$ 0.178)</i>	<i>Ksh. 14.20 (US\$ 0.178)</i>	<i>Ksh. 14.20 (US\$ 0.178)</i>
<b>Whole sample</b>	0.124	0.139	0.131	0.129	0.131
<b>Sex of household head</b>					
Male	0.121	0.135	0.129	0.120	
Female	0.135	0.155	0.145	0.135	
<b>Age of farmer</b>					
Youth	0.081	0.110	0.096	0.095	
Above 30 years of age	0.125	0.141	0.134	0.145	
<b>Milkshed</b>					
Nyeri	0.198	0.187	0.193	0.189	
Gatanga	0.155	0.150	0.153	0.154	
Kabete	0.096	0.243	0.170	0.145	
Lessos	0.093	0.095	0.094	0.093	
TransNzoia	0.114	0.134	0.124	0.123	
Kericho	0.143	0.069	0.106	0.109	
Nakuru	0.120	0.115	0.118	0.115	
Kinangop	0.081	0.133	0.108	0.099	

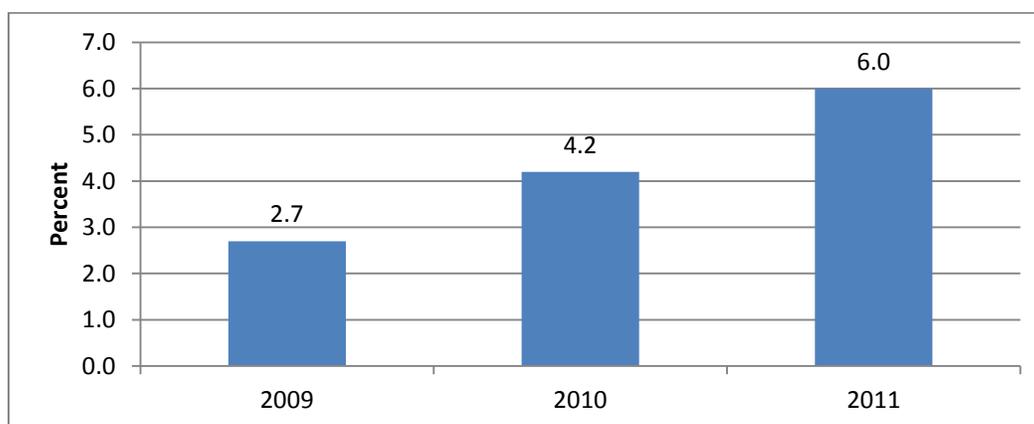
Note: 1US\$=KShs 80

The usage of fodder crops has significantly improved during the period of project implementation. From all dairy farmers interviewed, about 98% of them had established and were using any of the fodder crops for their dairy cows. During the period under review, the proportion of farmers with Napier grass increased to 88.2% in Year Four as compared to 79.5% at baseline as reported in Table 3 below. the use of fodder trees increased from 2.1% at baseline to 6.5% during the fourth year of the project while Rhodes grass increased from 7.3% to 25% during baseline and year four respectively.

**Table 3: Proportion of farmers establishing fodder crops/trees**

Proportion (%) of farmers planting	Baseline (%)	2009 (%)	2010 (%)	2011 (%)	Cumulative moving average
Napier	79.5	81.6	82.1	<b>88.2</b>	82.9
Desmodium	2.1	4.0	0.6	<b>5.0</b>	2.9
Rhodes grass	7.3	13.9	21.1	<b>25.0</b>	16.8
Lucerne	3.7	2.1	4.8	<b>3.2</b>	3.5
Fodder trees	2.1	1.3	1.9	<b>6.5</b>	3.0
Fodder sorghum	1.0	1.7	3.2	<b>3.5</b>	2.4
Caliandra trees	1.7	2.8	2.2	<b>6.8</b>	3.4
Oats	14.1	6.4	12.5	<b>12.6</b>	11.4
Cow candy	Na	0.1	0	<b>0</b>	0.0
Fodder maize	Na	2.7	4.2	<b>6.0</b>	4.3

The adoption of technology has been felt in the program area regarding the use of maize stovers as dairy feed. About 6% of the dairy farmers have adopted the use of maize as fodder crop with majority being recorded in the expansive North Rift area especially in Lessos and TransNzoia milksheds. The program has observed a considerable rise in uptake of maize as a fodder crop. Maize has strictly been regarded as human food in the country, especially in Rift valley. The crop, however, is highly nutritious and makes better ensiling material than Napier grass, which is commonly used.



**Figure 5: Trend of adoption of fodder maize**

Table 4 shows that during the quarter, the gross margin reported by dairy farmers was **KShs 8.4 (US\$ 0.105)** which shows an increase of 44.8% as compared to the baseline values. This shows that the program has surpassed the Year Four target of 32%.

Table 4: Gross Margins and household income: 2011 and cumulative program figures in US\$/Liter

Respondent Category	Gross Margin -wet season	Gross Margin-dry season	Gross Margin in 2010	Gross Margin in 2011 Dry season	Cumulative moving average
<i>Baseline – August, 2008</i>	<i>KShs 5.80 (US\$ 0.07)</i>	<i>KShs 5.80 (US\$ 0.07)</i>			
<b>Whole sample</b>	0.094	0.110	0.103	0.105	<b>0.103</b>
<b>Sex</b>					
Male	0.096	0.114	0.100	0.109	
Female	0.094	0.094	0.094	0.091	
<b>Age of farmer</b>					
Youth	0.120	0.140	0.130	0.073	
Above 30 years of age	0.093	0.108	0.100	0.104	
<b>Milkshed</b>					
Nyeri	0.060	0.038	0.049	0.143	
Gatanga	0.056	0.095	0.076	0.095	
Kabete	0.133	0.041	0.088	0.164	
Lessos	0.153	0.171	0.163	0.133	
TransNzoia	0.121	0.104	0.113	0.105	
Kericho	0.050	0.179	0.115	0.123	
Nakuru	0.078	0.126	0.103	0.043	
Kinangop	0.104	0.118	0.111	0.088	

The program has also realized impressive progress in income levels by the time of the study. As reported in Table 5, **the income realized from dairy was Kshs. 5032.6 (US\$ 62.91) per month, an increase of about 146% compared to baseline which has surpassed the target value by 60%.** The increase can be attributed to the slight increase in productivity, reduction in cost of production and increase in average price as a result of project interventions.

Table 5: Household income: 2011 and cumulative program figures(Kshs/Month)

Respondent Category	Household income -wet season	Household income-dry season	Household income in 2010	Household income in 2011	Cumulative moving average (Kshs/Month)
<i>Baseline – August, 2008</i>	<i>KShs 2043 (US\$ 25.54)</i>				
<b>Whole sample</b>	60.62	66.73	63.68	62.91	<b>63.49</b>
<b>Sex</b>					
Male	65.08	69.21	67.14	65.51	
Female	46.29	57.46	51.84	52.52	
<b>Age of farmer</b>					
Youth	56.70	66.00	61.35	19.13	
Above 30 years of age	60.72	66.79	63.75	62.76	
<b>Milkshed</b>					
Nyeri	29.62	22.93	26.28	65.81	
Gatanga	21.36	42.88	32.12	22.30	
Kabete	101.97	52.89	77.43	153.92	
Lessos	112.81	133.26	123.03	55.99	
TransNzoia	84.65	69.62	77.14	33.99	
Kericho	17.84	66.12	41.98	40.80	
Nakuru	66.59	82.00	74.29	33.90	
Kinangop	52.75	64.53	58.64	72.76	

Increased use of productivity-enhancing technologies, especially artificial insemination, has been realized among farmers working with the program. Program data shows a marked increase in the proportion of farmers using AI (at 70%) compared to the baseline proportion (39.9%) as reported in Table 6. The adoption of technology was low in the youth category (53%), while in the milk sheds the adoption range is from 27% in Nakuru to 98% in Nyeri.

**Table 6: Artificial Insemination technology adoption in 2011**

<b>Respondent Category</b>	<b>Technology adoption - AI (%)</b>
<i>Baseline</i>	39.9
<b>Whole sample</b>	<b>70.0</b>
<b>Sex of farmer</b>	
Male	72.8
Female	74.5
<b>Age of farmer</b>	
Youth	53.3
Above 30 years of age	73.5
<b>Milkshed</b>	
Nyeri	97.9
Gatanga	94.9
Kabete	97.8
Lessos	58.8
TransNzoia	74.8
Kericho	27.0
Nakuru	69.5
Kinangop	78.8

**Dairy cattle empowers DamarisWangechiKiama economically (TEL 0722-406209)**

Mrs Kiama is in her early 70s and a mother of three grown up children with their families. Damaris has 31/2 acres of land and 7 dairy cows; 4 lactating, 2 heifers and a calf. She produces an average of 25 litres of milk per day, as they are in late lactation. Her cows are of Friesian and Arshire type and are all registered as foundation stock. She has adopted a number of dairy technologies and management practices in her farm which can be confirmed by a zero grazing unit (as shown in the picture below), clean drinking water, a calf pen and a good waste disposal pit. She also uses an electric chaff-cutter that makes it easier to feed fodder chopped into desirable pieces. She is a member of Ihururu dairy cooperative.

“I have benefited from the program through LFFS and development of demonstration farms. Consequently, I have been able to develop my farm to include: 2acres of Napier grass, which is used as fodder and for making silage, 1/2acre of boma Rhodes and 1/2 acre of subsistence food crop”, asserts Damaris. This notwithstanding, she has adequate feed stock for her cows in the form of silage, made through skills and knowledge gained from the program. Already there is one pit of silage which is being used while there is still one more pit (silo) underground to be used later. Others include Hay -100 bales in store, Feeds-there is assortment of feeds which is made in the farm- for example, maize grains is ground into maize germ and either mixed with wheat bran and mill by-product such as oil seed cakes, cotton seed cakes, sunflower cakes and soya beans, among others. Since May 2010 when the

programme started the LFFS where Damaris is a member, she says “I have seen a lot of change in my farm, which has translated into income from the sale of quality milk, savings realized from not purchasing feeds especially fodder, which I been traditionally purchasing during the time of drought. This is wonderful”, she says and hopes the trend will continue.



**Figure 6: Damaris in her zero grazing unit, in Nyeri milkshed**

## 2.3 Component 3: Increase Availability of Dairy Business Development Services

The KDSC implementation method focuses on building capacity of BDS providers, i.e., switching from assisting micro enterprises directly to ensuring sustainable access to services through functioning markets. To achieve this objective, and for effectiveness, outreach, and impact, the program uses a portfolio approach in provision of BDS. This entails working with multiple partners as BDS providers rather than work with one or just a few and also the capacity building of the providers to provide a range of services (with some embedded), rather than just one for increased effectiveness.

During the quarter under review, **a total of 35 SPs were linked with SBOs in the program area. This gives a total of 867 SPs translating to over 148% achievement based more than the target (350) by the end of Year Four of the program.** These experts work with and deliver productivity enhancing technologies to specific farmer groups. Additional services provided to the dairy farmers include: feeds and feeding, extension, cow registration, feed conservation especially silage making, among others. These are provided after attending program facilitated capacity building workshops and seminars.

### **Formation of North Rift AI Providers Project (NRAIPP)**

The program has been championing the uptake of AI technology in all the milksheds. The main aim of increased campaign for the uptake of AI services is to improve the existing dairy animals so as to achieve high quality dairy cows that will result into improved milk productivity. The provision of this service has been facilitated by the SPs leading to an increase in the level of uptake by the dairy farmers. During the quarter under review, the AI technology has gained a lot of admiration by farmers in the milk shed which led to the AI technicians coming together and forming North Rift AI Provider's Project which was officially launched in the month of March 2011. The launch was attended by animal health technicians, AI technician's farmers and other guests who were also trained on genomics and successful AI business.



Figure 7: Dr Odhiambo addresses technicians during the launch of NRAIPP

## **Financial Services to SPs and SBOs**

KDSC through its facilitators linked farmers with financial institutions to enable them develop their dairy enterprises. In this quarter, the KDSCP team introduced **4,181 dairy (2,341 women) farmers** to credit facilities resulting into **a total of 36,734 farmers linked to credit facilities against a target of 36,000 surpassing the target by 2%. Of all members linked to credit facilities, 56% of them were women. With the development of 54 bankable business plans, more cooperatives and/members will be able to access financial services that will further increase the financial access and flow within the dairy farmers.** The team has also made a lot of effort to build the capacity of the dairy farmers on the availability of such services. These services are expected to provide more financial assistance to the members at an affordable rate to enable them expand their dairy activities. In TransNzoia milkshed, financial SPs working with the program are Juhudi Kilimo Family Bank and TransNzoia Teachers' Sacco. At the same time, the feed supplier Bunda Feeds will soon resume supply of the feeds to Naitiri and Meeboot cooperatives as the Supply had been disrupted due to delayed payment by the SBOs. Surungai SBO has managed to sign an agreement with Farm Feeds for the supply of quality dairy meal and calf pellets. Naitiri is negotiating with Unga feeds for the supply of high quality feeds. As shown in Table, during the month of March, a total of US\$130,408 was accessed by dairy farmers in TransNzoia milkshed from financial service providers. From the total loan beneficiaries reported in Table 7, **30.6% of them were women.**

**Table 7: Summary of beneficiaries accessing loans in TransNzoia milkshed**

<b>SBO</b>	<b>Institution</b>	<b>Beneficiaries</b>		<b>Sub-total (\$)</b>	<b>Total Amount (\$)</b>
		<b>Male</b>	<b>Female</b>		
Meeboot	Kilimo biashara	15	5	13,875	25,746
	Equity	2	0	1,063	
	Family bank	1	0	250	
	Smep	8	5	9,938	
	Feeds bunda cake	60	20	621	
Tongaren	Youth saccoo	103	82	18,075	20,837
	Tongaren	7	5	2,763	
Tarakwa	Tarakwasacco	17	6	6,200	6,200
Cherangany	Cooperative bank	5	3	1,000	20,750
	Equity	35	15	9,375	
	Milk cans	1605	715	9,375	
	Nkcc maziwa loan	277	123	1,000	
Naitiri	Equity	145	26	56,250	56,875
	Feeds bunda cake	20	10	625	
<b>Total</b>		<b>2300</b>	<b>1015</b>		<b>130,408</b>

## **Coordination of ESADA conference**

In order to increase the volume of milk meeting the international standards, the program has been in the forefront in promoting activities that enhance exchange of information/technologies among the stakeholders in the dairy sector. In this period, the program has facilitated the participation SPs on cost-sharing basis in the ESADA conference. SPs that have confirmed participation during the conference to be held in Tanzania include WWS, UBS, KDB, ABS, Coopers, AKEFEMA, Sameer, LDA, Limuru processor, Happy cow, Meru Central processors among others.

## 2.4 Environmental Degradation Mitigation Measures

Activities to mitigate management practices—farm, service providers and at bulking centre level—that may result in environmental degradation were also emphasized in the quarter. The KDSC program encouraged program beneficiaries to work towards sustainable management practices that reduce soil erosion, soil and water pollution, and emissions, among others, to safeguard the sectors' future contribution to national economic growth. This is in recognition of the fact that agriculture is and will be (in the short to medium term) the mainstay of Kenya's economy. Two achievements in the quarter include:

With respect to mitigating environmental degradation, during farmer trainings on disease control, emphasis were put on proper pesticide (cans) waste disposal through incineration or dumping in pit latrines to protect the environment. Drug withdrawal periods have been emphasized to be observed especially for mastitis cases. The project also trained dip attendants and part of the curriculum was the safe disposal of acaricide wastes and waste containers. In other areas, Biogas and Fodder tree & shrubs establishment to check on soil and water management were emphasized. A total of **five biogas digesters** were successfully completed during the quarter in TransNzoia milkshed.

In Nakuru milk shed, the Kenya National Federation of Agricultural Producers (KENFAP), who is promoting adoption of biogas technology by dairy farmers, participated in training farmers on shed construction and construction of bio-gas units. Several farmers have expressed interest in this. The uptake of this technology has immensely improved. So far 51 farmers have taken up the technology, with constructed and functional biogas units constructed by KENFAP.

The program is also encouraging the farmers to prepare multipurpose trees and shrubs during the dry period to be transplanted during the dry season. A tree nursery in Kipsaina has been identified to supply the seedlings and seeds during the planting season for establishment in the farms. Three farmers have fully implemented biogas units.

The program in conjunction with Norbrook (K) Ltd is training dip attendants on safe disposal of acaricides.

## 2.5 Gender and Youth intervention

Program efforts to promote gender and youth intervention have registered positive results. Members of Rugika Youth are dealing in fodder growing, mostly Napier. The group leaders expressed interest on fodder conservation and selling of hay to farmers; they were invited for the Kikuyu field day on 30/11/2010 where silage making was being trained. The main challenge of the youth is their availability as they are sparsely distributed in their activities; the project will work with them to address this challenge. In TransNzoia milk shed, the program has successfully launched the youth football team at Taito Jamii Timaa football team in September 2010, and now has launched another youth group at Taito as an intervention to bringing the youth together. The Jamii Timaa football team has now been registered with the ministry of social services. During the team meetings, dairy matters are discussed to induce the members into dairying as a business. In this quarter under review, the program organized several activities which were preceded by football matches involving the youth. The program has facilitated affiliation of Tongaren Youth Group to Tongaren Dairy Group. The members have been encouraged to invest in the dairy business. Youths in Surungai are also in the process of hiring land for establishment of pastures which will be preserved as hay for sale to farmers.

Gender is a factor the program continues to emphasize, especially when it comes to decision-making process. The program is mobilizing women in the milkshed who are now fully participating in dairy activities. The Kitale women initiative has appreciated the program in which they coordinate groups of women who are willing to join the already existing SBOs within the milkshed and most of them are already participating in dairy farming. In pursuant to gender roles, all the project meetings and the FFS that were being conducted in the quarter have been tailored to match with appropriate times as agreed upon by the members both men and women, the women in particular prefer morning or afternoon (not early morning or late evening). This has been strictly adhered to in the planning of the FFS and SBOs meetings.

In Lessos milk shed, the program has observed that fewer women are being trained in the FFS, this is attributed to the aspect of dairy owner cum manager being the male in the family. This has led to mobilization of women to attend such meetings against the cultural values that prefer men to attend meetings unlike women. As a result of this campaign, there has been some progress in Lessos with women coming into LFFS.

In TransNzoia milkshed, the program is working hard to ensure more women participate in dairy farming and group leadership. There has been an impact in that one SBO – Koitogos Dynamic Dairy Cooperative is headed by a female, an issue that has never been thought of in the region. The facilitators have had sessions with a women group - Kitale Women Initiative with the objective of interesting them in dairy business. In the quarter under review, **a total 5,908 women were reached through trainings, In addition, a total of 94,093 members accounting for 44% of all beneficiaries are women. During the quarter, of all the farmers trained in TransNzoia milkshed (2083), 49.1% were women.**

**KDSCP captures the attention of the youth - MR. DUNCAN NDUNG'U KAGUMBA (0721389718)**

The KDSC program was designed with clear focus on targeting the youth and women in the program operation areas. It therefore encourages the participation of the youth in the service provision field whereby they are facilitated and have their capacity built in delivering services to the dairy farmers. Through service delivery, the youth get empowerment economically. Duncan Ndung'u aged 32 years old and married with two children is a beneficiary in this category. He graduated from AHITI in Nyahururu in 2007 with a certificate in Animal Health and has been engaged by Ihururu Co-operative after graduation. In 2008 he did an A.I. course in Kabete while in 2009 he attended cattle Registration course in Nakuru sponsored by KDSCP and conducted by KLBO. After the course on animal registration the program has been using him to create awareness in the LFFS on the value of cattle registration and registering animals in the program area. This of course has meant more income as the employer gives him a commission for every cow he registers.



Figure 8: DancunKagumba with his motorcycle and AI equipment

“Through KDSC service provision approach, I have managed to purchase a motorbike in order to reach out to more farmers. The number of animals served through A.I has increased from 50 to 120 cases monthly. In the year 2010, I was able to attend to 190 cases both insemination and clinical, besides 80 cases of cattle registration – all in Ihururu cooperative. In addition, in October, the program facilitated me to register 87 cows in MIK Cooperative Society in Mathira”. Dancun explains. According to him, business has grown and has been able to buy a saloon car to improve his performance efficiency. In this respect, he says due to the increase of farmers seeking his services, he is being forced to sometimes contract clinical health technicians to assist him in rendering the services. If this is anything to go by, Duncan says he will grow his business to the highest level possible in 2011, and “*i will forever be grateful to KDSCP for facilitating me to train as a cattle registration Inspector*”. This appears realistic as his two years of experience has shown he is focused and has been able to attract farmers’ confidence, which has translated to more money into his pocket!

## 2.6 Challenges

**Disease Outbreak:** The main challenge reported during this quarter was the disease outbreak. The program area registered an outbreak of foot and mouth disease in three program milk sheds namely TransNzoia, Nakuru and Kabete. The program has been closely working with the Ministry of Livestock Development (MoLD) personnel and suppliers of animal health products on this. A number of planned events were suspended in the month, especially field days. Due to the effects of the disease in these milk sheds, the program embarked on a strategy of linking dairy cooperatives under the milk shed to agrovets to facilitate the vaccination of their animals against foot and mouth disease. The program has also recruited and trained nine dip attendants from four dips in Nakuru milk shed. The trainings conducted covered dip structure, types of acaricides, ticks, dip management by-laws, committee elections, documentation, drug resistance and back up services of ultravetis. During the same period, a total of 64 dips were utilized in Lessos milk shed and a total of 26,000 animals were dipped.

**Volatile milk market:** Another challenge in the quarter has been the inability of the dairy milk processors to absorb milk produced by farmers in the quarter, leading to non-collection of milk in some cases, low milk prices and delayed farmer payments. Kitiri and Tulaga FCS in Kinangop milk shed experienced high levels of milk rejection from the Broke side collection point at Engineer collection centre. Apart from delaying tactics to receive milk in good time, they seemed to keep altering the standards. Kitiri and other SBOs have started consulting on how they can alleviate this problem and they feel they need to come up with a farmers processing plant to address the problem.

The sudden lowering of prices by NKCC, a major raw milk buyer has affected the performance of SBO'S by members opting to sell their milk to milk traders who offer better prices hence affecting the volumes. However, the price reduction only affected those without supply contracts and thus has helped in reinforcing the importance of having Supply Contracts. The lack of steady market for the milk and over reliance on the processors is still a big challenge. The New Kenya Cooperative Creameries (NKCC) reduced the prices of milk from **KES 25 (\$0.3125) to KES 23 (\$0.2875)** per litre in the month of February. NKCC halted the signing of new Milk Supplier Contracts temporarily obstructing the progress of the TMSG from forging ahead with the bulking process. The Programme liaised with the outgoing NKCC Kitale Plant Manager and reopened the negotiations with the head office.

**Market distortion:** Some development programs being implemented in the program area continue to perpetuate dependency attitudes by paying farmers and funding purchases or giving away inputs and dairy equipment. Some stakeholders still expect payments from the project for attending capacity building sessions, while some service providers demand payment to train farmers. The program has been able to put in place measures to address this challenge through capacity building of the dairy farmers. KDSCP uses an approach in which farmers who are members of the dairy societies make contributions in order to acquire cooling plants from their milk proceeds. At the same time, the program has established a mechanism in which dairy farmers are linked directly to service providers who offer services and inputs to these farmers and payments are made through check-off system on behalf of the farmers by the processors. This has enabled members to understand that whenever they want to access any service, it is them who bear the cost.

## 2.7 Lessons Learnt

Sudden lowering of prices by NKCC, a major raw milk buyer has affected the performance of SBO'S by members opting to sale their milk to milk traders who offer better prices hence affecting the volumes. However, since the price reduction only affected those without supply contracts, it has reinforced the importance of having Supply Contracts with processors which can only be facilitated through cooperatives.

The organization of farmer groups into business organizations has enabled dairy producers to increase their bargaining power with the processors. The formation of federations has resulted in increased milk prices at the farmer level and the same time qualifying of members for bonuses given by processors.

Increased capacity building of service providers has resulted in increased sales of their products. Through the linkages facilitated by KDSCP program between service providers and farmer cooperatives have enabled farmers to invest in technologies like digital weighing scales, computerization and biogas equipment at affordable rate. This has led to realization of the objectives of the program in enhancing development of small business organizations.

Collaboration with other agencies has yielded positive results for the program. There has been continuous use of engagement of other stakeholders in the industry which has culminated into reaching out to many dairy farmers with range of benefits. Some of the stakeholders include FHI, KDB, DTA and ministry of livestock development.

## 2.8 Work plan for Year 4

Table 8: Work plan for Year 4

No.	Quarter	Year			Anticipated Outcomes
		Q 3			
	Month	4	5	6	
1.0	<b>Component One – Enhance capacity for milk production input quality certification and market promotion</b>				
	<b>Activity 1.1 Strengthen the Kenya Dairy Sector Competitiveness Task Force and Donor Working Group on Competitiveness</b>				
1.1.1	Hold Implementers Working Group Meeting		x		Synergy and leveraging funds
1.1.2	Hold Task Force Meetings	x		x	Minutes, action plan initiatives implemented
1.1.3	Provide support to the Dairy Task force on subcommittees and regional working group coordination. Capacity building on consensus building	x		x	Minutes and action plans implemented
	<b>Activity 1.2 Identify and Mobilize Resources to Implement Action Plans</b>				
1.2.1	Prioritize Action Plan initiatives	x			Posted on the KDSCP/KDB websites
1.2.2	Meet with stakeholders and donors to mobilize funding for high priority initiatives e.g. (dairy animal census)		x		\$ 20 million Leveraged
1.2.3	Implement Action Plan solutions	x	x	x	All prioritized action plans implemented
	<b>Activity 1.3 Develop Quality Standards and Support Policy Reform Initiatives</b>				
1.3.1	Sensitize Dairy stakeholders on the reviewed key Policy Reform initiatives as part of the accomplishment of the Action Plan	x		x	4 stakeholders workshops Held at National or Regional level
1.3.4	KDSC team will facilitate the Task force to Promote differential payment for quality	x	x	x	Quality certification framework developed, promoted and implemented
1.3.5	KDSC team will continue to work closely with Laboratories/AKFEMA to build capacity of members (LTA 20 days)	x	x	x	30% increase in quantity feed marketed under new feed quality standards
1.3.6	Publicize policy briefs semi annually	x			Policy briefs developed and uploaded on the website
1.3.9	Continue to promote the Data Base of service providers with raw milk testing instrumentation for MCCs and develop a sustainable way of acquisition			x	Populate the Farmer and livestock Portal and promote the portal
1.3.10	Capacity building of Laboratories		x		Sensitization of Laboratories on the benefits of International accreditation and capacity building towards accreditation with 17025 certification
	<b>Activity 1.4 Promote Market Expansion of Milk and Value-Added Dairy Products</b>				
1.4.1	KDSC team will support industry-led quality promotions via Action Plan		x	x	Generic consumption campaigns
1.4.2	KDSC team will pursue the dissemination and implementation of the Master plan (TA 20 days)			x	Activities stream lining the Dairy sector
1.4.3	Support School Milk Program initiatives		x		Over 500 schools / 10 processors participating
	<b>Activity 1.5 Facilitate Institutional and Association Capacity Building</b>				

1.5.1	Use competitive grants directed at local firms to provide technical assistance to dairy related institutions and associations	x	x	x	Improved performance of at least 20 Dairy related supported institutions
<b>2.0</b>	<b>2.0 Component Two - Develop Dairy Smallholder Business Organizations (SBOs)</b>				
	<b>Activity 2.1 Identify Smallholder Business Organizations (SBOs) for KDSC Interventions</b>				
2.1.2	Cooling plants installed or rehabilitated		x	x	15 additional Cooling units installed and or rehabilitated
2.1.3	Catalogue Milk Shed information on the KDSCP Website		x		Increased efficiency and production of milk
	<b>Activity 2.2 Technical Assistance and Capacity building to SBOs</b>				
2.2.1	Strengthen businesses and management skills of SBOs	x	x	x	All SBOs strengthened. Increased SBOs operational efficiency
2.2.2	Strengthen linkages between SBOs, processors and SPs	x	x	x	40% increase in production and returns on high quality milk
	<b>Activity 2.3 Promote Solutions and Create SBO Business Plans and Milk shed Action Plans</b>				
2.3.1	Facilitate Business Plans for targeted SBOs	x	x	x	50 additional SBOs transformed into substantial business entities above the break-even point
2.3.2	Present Final SBO Assessment to Milk shed Action Planning Workshops and form Milk shed Task Forces			x	At least 20 milk shed working group meetings held and Minutes received
	<b>Activity 2.4 Promote Embedded Services within Dairy SBOs and Processors</b>				
2.4.1	Capacity building of the revived Kenya Dairy processors Association	x	x	x	Functioning KDPA continuing with semi annual meetings and supporting Members
2.4.2	Assist selected milk sheds to pilot new services	x	x	x	20% increase in gross revenue of milk bulking centers businesses from sale of input and services other than milk cooling
2.4.3	Assist processors to deliver embedded services for SBOs		x	x	At least 5 additional and 10 existing Processors offering Embedded services
2.4.4	Develop SBO operational and service provision best practices and post on KDSC website			x	SBO operational and SP best practices documented and shared
	<b>Activity 2.5 Encourage Quality-Based Systems and Contracts</b>				
2.5.5	Link processors and SBOs to quality certification and assurance providers as well as financial service providers			x	30 additional MBCs with HACCP and or National certification
	<b>Activity 2.6 Coordinate and Leverage Resources for SBO Development Initiatives</b>	x	x	x	\$ 20 million Leveraged
<b>3.0</b>	<b>3.0 Component Three - Increase Availability of Dairy Business Development Services</b>				
	<b>Activity 3.1 Identify Enterprise level BDS constraints and opportunities</b>				
3.1.1	Needs assessment for news BDSP	x			100 additional BDSP supported and Linked to Beneficiaries
3.1.2	Capacity building of existing and new BSPS		x		200 BSPS will continue to be supported
	<b>Activity 3.2. Needs analysis for Dairy Industry BSPs</b>				
3.2.1	Conduct an OCA for Processors			x	5 additional processors
3.2.2	Capacity Building of processors			x	Capacity building of 5 additional processors
	<b>Activity 3.3 Promote Accreditation of and Standards for Dairy Service Providers</b>				
3.3.1	Identify and promote best accreditation practices and service standards		x	x	10% increase in Value of services/inputs provided by BSPs

	<b>Activity 3.4 Create Directory of Business Services Providers for Dairy Industry</b>				
3.4.1	Continue to Solicit BSP corporate capability statements	x	x	x	Directory of the Livestock and famers uploaded in the e-portal with enterprises providing business services and producers
3.4.2	Continue to Confirm legal registration of BSP created and added to the directory	x	x	x	A growing Data base shared with stakeholders
3.4.3	KDSC team will populate BSP directory database and make directory public via project and Dairy Market Information websites	x	x	x	100,000 small holders purchasing private sector services at full commercial rates
	<b>Activity 3.5 Forge Business-to-Business Linkages</b>				
3.5.1	Conduct Business Solutions events in targeted milk sheds such as Gender and youth sensitization awareness campaigns	x	x	x	216000 small holder farmers engaged in new, diversified dairy related enterprises as a result of KDSCP interventions
	<b>Activity 3.7 Build Capacity of BDS Facilitators</b>				
3.7.1	Develop and disseminate BDS delivery of specialized servicesto SBOs, SPs and institutions			x	5 Specialized services delivered to SBOs/BDSP or institutions
3.7.2	Capacity Building of Facilitators	x		x	4 Facilitators supported with skills on Technical development related to program activities
3.7.3	Facilitate complex BDS services through Competitive Sub-awards		x		100,000 Dairy Farmers receiving short term training (30% being women)
	<b>Activity 3.8 Stimulate Value Chain Financing</b>				
3.8.1	Support MFIs/SACCOs to develop innovative financial services/ products			x	20,000 additional farmers receiving loans from Financial service providers (30% being women)
3.8.2	Facilitate development of innovative financial services through Competitive Sub-awards			x	5 Financial products developed
	<b>Activity 3.9 Build Capacity of New and Existing Business Services Providers</b>				
3.9.1	Train BSPs and smallholders /SBOs			x	11 new technologies or management practices made available for transfer to additional SBOs/SPSs

### 3.0 Performance Data Table

Impacts					
Performance Indicator	Baseline Value	Year 4		Cumulative Actual	Comments
		Cumulative Annual Target	Actual - Q2 (FY 2011)		
<b>Household level impacts</b>					
% change in smallholder household income (%)	KShs 2043 (US\$ 25.54)	60%	146%	144.5%	Current estimates indicate that farmer incomes from the sale of milk increased to Kshs. 5032 (US\$ 62.91) per month on average in the year. Program cumulative average realized so far is 144.5%, surpassing the program target of 60% in Year Four.
Number of rural households benefiting	0	250,000	5877	213,848	The program has expanded to new areas especially in Nakuru milkshed where new members have been incorporated in the quarter and dairy farmers were enthusiastic in joining dairy farmer groups. This will boost the number of beneficiaries. The milkshed has great potential and will increase the active membership of those participating in the project. Female beneficiaries account 44%.
<b>Sub-Sector Level Impacts</b>					
Total volume of milk purchased from smallholder dairy farmers (MT)	117,090.72	128,090.72	120,017.99	120,017.99	There was a decrease in volumes sold by farmers in the quarter due to drought even though it showed steady improvement in yield registered as compared to similar seasons in the past. This stability can be attributed to farmers adopting program-promoted productivity enhancing technologies with the onset of rains. However, due to the low price paid per liter, we did not meet the targeted value by year three.
Total value of milk purchased from smallholder dairy farmers (US Dollar)	33.84M	36.63M	34.69M	34.69M	
% change in volume of milk conforming to quality standards increased	96.25%	75%	95.0%	95.0%	The quantity of milk rejected reduced in the current period as the program facilitated training on milk handling and that of milk collection clerks at SBO level have played a great role towards improving milk quality.
Number of jobs created in the value chain	0	30,000	157	11628	There are jobs resulting from investment in embed service provision by SBOs and from new business development providers – including new AI providers.
Number of producers accessing/ receiving/ utilizing BDS services,	0	180,000	7,206	172,537	Since it is the second quarter, the program will surpass the target by the end of the year. The program has

Impacts					
Performance Indicator	Baseline Value	Year 4		Cumulative Actual	Comments
		Cumulative Annual Target	Actual - Q2 (FY 2011)		
inputs, technologies, and management practices					planned to continue linking new farmers with service providers in all the 8 milk sheds.
Number of farmers using improved technology	0	150,000	60,051	160,032	These are farmers using Artificial insemination.
Change in annual productivity (Liters)	6.5	14	8.2	8.1	Farmers working with program have recorded impressive yield figures as observed in the latest farm level survey. Program cumulative average now stands at 8.1 litres/cow/day - a 26.2% increase compared to baseline value.
% change in gross margin per litre of milk	Kshs. 5.80 (US\$ 0.073)	32%	44.8%	34.5%	Program has so far realized impressive progress in gross margin levels over the two years. In the half year, this was mainly driven by increased yields and low production cost due to the onset of rains and thus availability of forage.
% Reduction in cost of production	KShs. 14.20 (US\$ 0.178)	-20%	-27.46%	-14%	The onset of rains and utilization of local fodder have greatly helped reduce cost of production due to abundant forage.
<b>Component I - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion</b>					
Number of industry policies improved/enacted	0	2	2	21	The program has also facilitated the development of draft dairy regulations which will be gazetted soon as an official regulation. In this quarter, a review of the regulations is ongoing in order to fast track its enactment into law by the Attorney General. The draft regulation incorporated all the 21 legislations that concern the dairy sector in Kenya. The KDSC has also supported the development of the dairy master plan is almost being finalized.
Number of Quality certification frameworks (Milk product, Animal feeds) developed, implemented/enforced	0	2	1	1	Good Manufacturing Practice manual and code of hygienic practices officially launched as Kenyan standards in quarter
Total Value of non-project resources leveraged (US \$)	\$0m	\$20M	\$3,610	\$25.31 M	A total of \$3,610 has been leveraged by farmers under the program in this quarter. Farmers in TransNzoia and Lessos milksheds were active in acquiring dairy equipment and exchange visits

Impacts					
Performance Indicator	Baseline Value	Year 4		Cumulative Actual	Comments
		Cumulative Annual Target	Actual - Q2 (FY 2011)		
<b>Component 2 - Dairy Smallholder Business Organization (SBO) Development</b>					
Number of producer organizations strengthened	0	100	10	124	The program is currently working with 124SBOs in the eight milk sheds and three sector wide organizations and 10 milk marketing federations. All the SBOs were capacity built in the reporting period. We have therefore surpassed the program year three targets. In Nakuru milkshed, ten new SBOs during this quarter.
Number of SBOs/MBCs with HACCP and/or national certification	0	40	0	42	Naivasha Dairy Training Institute (DTI) has been able to train a total of 1441 (504 women) operators trained by the program on GMP. Since the training has been conducted in all milk sheds, it is expected that in the next quarter, SBOs will be able to meet national certification
Number of SBO/MBCs transformed into sustainable business entities	0	50	10	124	All SBOs working with the program operate profitably, according to the official audit reports and the profit and loss accounts that are done on a monthly basis. These include ten SBOs facilitated in Nakuru milkshed
Number of cooling units installed/rehabilitated in SBO/MBCs (Number)	0	30	1	15	One cooler was installed in Nakuru milk shed during this quarter. More coolers are expected to be installed in the course of the Financial Year.
<b>Component 3 - Availability of Dairy Business Development Services</b>					
Number of firms providing new business services to producers (Number)	0	350	35	867	Program activities have focused on embedded service provision to increase the sales volume and revenues for the providers. AI providers are trained on feeds & feeding and feed conservation.
Dairy farmers receiving loans from financial service providers	0	36000	4,181	36,734	Private AI service providers and SBOs working with the program have benefitted from program linkages with financial service providers. About 36% of those receiving loans were women.
Number of producers receiving short-term training	0	126,000	14,769	86,979	Service providers have taken a longer time than expected to embrace farmer training as an embedded service. This will be sorted out in the next quarter. Women accounted for 40% of all those trained

#### 4.0 Appendix I: Financial Report

	Budget	Actual Expenditures thru March, 2011	Remaining Funds as of April 2011
<b>CLIN One (Year 1)*</b>			
Total Estimated Costs	\$ 1,902,995	\$ 1,902,995	
Fixed Fee	\$ 20,324	\$ 20,324	
<b>Total Estimate Cost Plus Fixed fee</b>	<b>\$ 1,923,319</b>	<b>\$ 1,923,319</b>	
<b>CLIN Two (Year 2)**</b>			
Total Estimated Costs	\$ 2,183,292	\$ 2,183,292	\$ -
Fixed Fee	\$ 20,607	\$ 20,607	\$ -
<b>Total Estimate Cost Plus Fixed fee</b>	<b>\$ 2,203,899</b>	<b>\$ 2,203,899</b>	<b>\$ -</b>
<b>CLIN Three (Year 3)***</b>			
Total Estimated Costs	\$ 2,229,663	\$ 1,999,102	\$ 230,561
Fixed Fee	\$ 24,372	\$ 19,991	\$ 4,381
<b>Total Estimate Cost Plus Fixed fee</b>	<b>\$ 2,254,035</b>	<b>\$ 2,019,093</b>	<b>\$ 234,942</b>
<b>CLIN Four (Year 4)</b>			
Total Estimated Costs	\$ 1,555,543	\$ -	\$ 1,555,543
Fixed Fee	\$ 16,261	\$ -	\$ 16,261
<b>Total Estimate Cost Plus Fixed fee</b>	<b>\$ 1,571,804</b>	<b>\$ -</b>	<b>\$ 1,571,804</b>
<b>CLIN Five (Year 5)</b>			
Total Estimated Costs	\$ 1,032,815	\$ -	\$ 1,032,815
Fixed Fee	\$ 14,128	\$ -	\$ 14,128
<b>Total Estimate Cost Plus Fixed fee</b>	<b>\$ 1,046,943</b>	<b>\$ -</b>	<b>\$ 1,046,943</b>
<b>Total Reimbursable Costs</b>	<b>\$ 8,904,308</b>	<b>\$ 6,085,389</b>	<b>\$ 2,818,919</b>
<b>Total Reimbursable Fixed Fee</b>	<b>\$ 95,692</b>	<b>\$ 60,922</b>	<b>\$ 34,770</b>
<b>Total Reimbursable Estimated Cost Plus Fixed Fee</b>	<b>\$ 9,000,000</b>	<b>\$ 6,146,311</b>	<b>\$ 2,853,689</b>

\*\*\* CLIN 3 Expenditures run from May 1, 2010 through April 30, 2011

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