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USAID KENYA DAIRY SECTOR COMPETITIVENESS PROGRAM

ANNUAL PROGRESS REPORT

OCTOBER 2008 – SEPTEMBER 2009

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The authors' views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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List of Acronyms

APDT	Annual Performance Data Table
ABSTCM Ltd	African Breeders Services Total Cattle Management Limited
BDS	Business Development Services
CAIS	Center for Artificial Insemination Services
DTF	Dairy Task Force
ESADA	Eastern and Southern Africa Dairy Association
GMP	Good Management Practices
HACCP	Hazard Critical Control Point
HPI	Heifer Project International
KCC	Kenya Cooperative Creameries
KDB	Kenya Dairy Board
KDSCP	Kenya Dairy Sector Competitiveness Program
KENDAPO	Kenya National Milk Producers Organization
KLBO	Kenya Livestock Breeders Organization
KDPA	Kenya Dairy Processors Association
LOL	Land O'Lakes, Inc.
MCC	Milk Collection Center
MOLFD	Ministry of Livestock and Fisheries Development
MOLD (DVS)	Ministry of Livestock, Department of Veterinary Services
NGO	Non Governmental Organization
PERSUAP	Pesticide Evaluation Report Safer Use Action Plan
PEV	Post Election Violence
PMO	Pasteurized Milk Ordinance
PMP	Performance Management Plan
SBO	Smallholder Business Organizations
SoW	Scope of Work
SITE	Strengthening Informal Sector Training and Enterprise
SNV	Netherlands Development Organization
USAID	United States Agency for International Development

1.0 Executive Summary

This annual report provides the status of the USAID Kenya Dairy Sector Competitiveness Program and the challenges and lessons learned from October 2008 to September 2009.

Key accomplishments in the reporting period include:

- Through collaboration with key industry stakeholders, imparted over **24,736 farmers (23% female) with technical skills in dairy husbandry** since the beginning of the project. These forums covered the key aspects of animal husbandry – genetics/breeding, feeds and feeding, animal health, and milk quality. Over **40,000** other beneficiaries were reached indirectly in shows - breeder's shows - and exhibitions.
- Current program estimates indicate that farmers working with the program have increased their incomes from sale of milk by 28.23% in the reporting period. This has mainly been driven by increased milk price in the year resulting from program facilitated price negotiations and increased demand due to a severe draught.
- Reached 80,119 households in the reporting period, bringing the total number of households reached in the program period to 102, 656. These households benefited from program activities that included building effective linkages with service providers, facilitation of collective marketing of milk for premiums, capacity building on dairy husbandry (dairy farmers) and business management (service providers), among other program activities. This resulted in significant incremental income to the households in the reporting period.
- Program activities have led to significant employment opportunities in the program area. Program data indicate that over **5466** new jobs were created in the program area in the reporting period.
- Transformed 63 producer organizations/Smallholder Business Organizations (SBOs) in to sustainable business organizations in the reporting period. Program activities focused in redesigning business operations for the SBOs working with the program to maximize returns and eliminate wastages – transport (for milk collection) routing to optimize resources, business analysis of group activities (e.g. feed store, Artificial Insemination) to ensure all group ventures post returns, among others
- Program promoted feeds and feeding practices has helped stabilize cow productivity at **6.4 lts per cow/ day** in the program area compared to **6.5 lts per cow/ day** observed during the baseline survey. This falls short of the year

target – at **12 lts per cow/ day**. *This is mainly due to the severe draught that has ravaged the country for two years. The draught has severely affected the livestock industry, with massive yield decreases observed due to lack of fodder. Non program farmers have fared much worse. In Ambani Dairy in Nyeri Milk shed for example, management report that yield has dropped to 1 – 2 liters/cow/day, while in Rift valley (Bomet), yield under average management has reduced to about 3 liters/cow/day on average.*

- Realized significant increases in number of farmers using productivity enhancing technologies in the year. **36%** of program beneficiaries currently use feed conservation technologies (silage, crop residues preservation and hay) **compared to 11% observed** during baseline survey. A marked increase in the proportion of farmers using Artificial Insemination (AI) (at 59.5%) has also been observed compared to the baseline proportion (39.9%).
- Facilitated negotiations for “fairer prices” for groups working with the program. **Two farmer groups have finalized negotiations, and are now getting considerable incremental income for the members.** These include Boyo (from Ksh. 23 per liter to 29), and Mathera (from Kshs. 23 to 27). Farmers started receiving the new prices in April and July for Boyo and Mathira respectively. **This has earned 4,074 farmers Kshs. 3,474,486 (US\$ 46,327) in additional income in the reporting period. Overall, value of milk sold by farmers working with the program in the reporting year was US\$ 26.4 million and surpassed the target for year two (US\$ 21.38 million) by 23.5%.**
- Organized and facilitated strategic planning workshops for all the **63** farmer groups working with the program. **Four** progressive groups have since finalized the process of developing strategic plans and the implementation maps of the plans. These include Limuru, Hexagon, Kikuyu, and Tulaga. All groups have however received training on strategic planning and are currently at various stages of developing the plans with program assistance.
- Organized and facilitated training workshops on business planning for all the **63** farmer groups working with the program. **Two (2)** very progressive **farmer groups** (Limuru and Tulaga) **have finalized the process and have operational business plans in place.** The plans will go a long way in making the groups operate as business entities – a key focus of the program. It is hoped that the plans will make the groups more focused on the goal – which is maximizing revenue to the member farmers through operating in the most cost effective manner.
- Organized farmers, in the Rift Valley Province, into groups and facilitated price negotiations between dairy processors and the groups in the reporting period. Six (6) groups now bulk milk and sell collectively to processors through program support. This has resulted in significant incremental annual income to member farmers (**Kshs. 998, 310- US\$ 13, 310**) as a result of better prices paid by processors.

- Provided technical assistance to Boyo farmers' cooperative society to set up a "stores for resale" in the year. The program facilitated a cost benefit analysis of the venture. This will enable the group's active members - numbering 1074 - to access dairy inputs on credit and be deducted from the monthly milk delivery check. The group management has reported significant interest from farmers, with 60% of farmers benefiting monthly on average.
- Linked all the 63 farmer groups with service providers. All the groups working with the program have access to AI providers, animal feeds and feeding experts, animal health providers, and milk quality experts. The program is also working with a few biogas experts. Adoption of biogas as an alternative source of fuel, manure for farming, and fodder crops will be key areas of focus going forward as program natural resource conservation measures.
- Facilitated over **20,158 (33% women)** farmers to acquire credit in the reporting period surpassing the 18, 000 farmers target by end of year 2. The majority, over **18,758**, received credit in kind - in form of dairy inputs in the reporting period.
- Organized and facilitated capacity building forums for **289** service providers in the reporting period. These experts work with and deliver productivity enhancing technologies to specific farmer groups. **The program has since surpassed the target of 150 by end of year two of program implementation.** 55 providers - especially AI providers - now supply additional services (feeds and feeding) to their clientele after attending program facilitated capacity building workshops and seminars
- Trained **38** Kenya Dairy Board (KDB) regulatory inspectors on Pasteurized Milk Ordinance and regulatory inspection. Two officers further visited the United States to learn firsthand how regulatory inspection is carried out under the USA Pasteurized Milk Ordinance. The quality of milk and dairy products currently present significant risks to consumer safety in the domestic front and is a hindrance to competitiveness in the regional and international markets. It is also a barrier to entry into regional export markets. The program facilitated regulatory inspection trainings will go a long way in improving product quality and therefore consumer safety in the local market, and enhance exports.
- Reviewed/updated **18** dairy standards/regulations and finalized development of the Good Manufacturing Practices (GMP) and the Dairy Code of Practice manuals. The GMP has been approved by the Kenya Bureau of Standards (KEBS) and is now an official standard. The other 18 dairy standards are pending gazetement by the ministry of livestock development. The program has initiated the process of training milk traders

- processors, farmer groups and milk bar operators on GMP, and aim to make compliance a licensing requirement through collaboration with the Kenya Dairy Board (KDB). All groups working with the program will be trained.
- The Dairy Regulation text was written and finalized in the reporting period. The document has subsequently been reviewed and approved by the public technical committee. It has been submitted to KDB for review and internal discussion. This is a **major piece of legislation and will mark a key milestone once approved and adopted.**
- Built capacity of key livestock sector public institutions - including Ministry of Livestock Development officers, livestock parastatal heads, research organizations, and university departments, among others in the year. A workshop, which aimed at refocusing the thinking of top leadership of public sector institutions in the dairy sector towards a competitive mental framework was organized in the year and attended by 21 participants, including a representative of the Permanent Secretary, Ministry of Livestock Development. Sector organizations, including the Kenya Livestock Breeders Organization, Kenya Livestock Producers Association, Kenya Dairy Producers Organization, and the Kenya Dairy Processors Association were facilitated to develop strategic plans and trained on a host of administrative skills. The Kenya Dairy Processors Association, which had collapsed was revived in the year and is set for a relaunch on 8th October, 2009.
- Held one (1) milk consumption campaign to stimulate demand for milk and milk products in the country. **Over 7,500** people were reached.
- Continued working towards building capacity for a local "world class" milk and milk products laboratory which will serve as a reference laboratory for product certification in the country.
- Continued facilitating meetings of the National Dairy Task Force (DTF), Regional Working Groups (RWGs) and Milk Shed Working Groups.
- Leveraged an estimated **US\$ 3.4 Million in the year** in non program resources. This was achieved through stakeholder contributions to sector initiatives – both in kind and monetary. A significant proportion was realized from farmers' participation in program organized events.

- In collaboration with the Ministry of Livestock Development, developed a scope of Work (SoW) and hired a consultant to review the National Dairy Master Plan and align it with vision 2030. Work has already commenced.
- Collaborated with The DAI program of USAID in a survey on credit access in the dairy value chain. The program used a sample of farmers in the program milk sheds. Once finalized, this report will form a basis for action along the value chain. Findings of the survey will inform the program interventions on credit access going forward.

2.0 Overview of the Program

The Kenya Dairy Sector Competitiveness Program aims to improve Kenya’s dairy industry competitiveness, and increase the economic benefits to stakeholders in the entire dairy value chain. The program employs a market driven value chain approach, utilizing a Business Development Services (BDS) methodology. The program aims to 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.

The Program objectives are threefold:

- 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 market-linked business development services and technologies by male and female dairy farmers and processors producing dairy-related inputs.

In its implementation, the program pays particular attention to environmental and gender concerns and effects corrective action as appropriate. The program 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.

2.1 Towards Strategic Objectives

The program 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 include:

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

Deliverables comprise:

- 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 SBOs with national/international certifications
- Increased raw milk sales by SBOs under agreements that pay premium for quality
- Increased number of SBOs transformed into sustainable businesses
- Increased number of cooling units installed/rehabilitated by SBOs

Component 3: Availability of dairy Business Development Services

Outcomes are:

- 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

2.2 Geographic focus and target group

The program is being implemented in milk sheds in Central and Rift Valley that can competitively deliver 50,000 – 100,000 liters of milk per day of quality milk to processors. These two provinces account for an estimated 80 percent of all processed milk. A draft milk shed mapping report has been completed.

2.3 Implementation strategy

Implementation of the Program is based on innovative, international best practice approaches and methodologies that ensure achievement of expected results and sustainability of impacts long after the end of the program. Under the program, Land O'Lakes, Inc., the implementing agency, is facilitating market-based services/solutions, and supporting 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 been engaged to identify competitiveness constraints. The program then employs market-based solutions by strengthening supporting markets for services and inputs provided by commercial service providers, industry associations and where necessary, government service providers.

3.0 Performance Management: Achievements towards targets

Over the last year, the Kenya Dairy Sector Competitiveness Program has been addressing sector challenges, constraints and stakeholder concerns and realized significant achievements following the comprehensive sector assessment studies accomplished in the first year. The program focus has been on five key areas, which we will continue addressing in the coming program year. These include:

Improving farm level production: Post Election Violence (PEV) and persistent drought are two key challenges that continue to affect productivity in the industry. These are manifested in two key variables - yield and cost of production. High cost of production was mentioned as the predominant consequence of the PEV in the program baseline survey. Those interviewed cited increase in cost of both animal feed and mineral supplements and disease management as the major problems faced after the PEV – both due to limited supply (both products and services) and increased transport cost. These problems impact yield and may have contributed to the significantly lower yields as compared to the Kenya Dairy Development Program's (KDDP) final yield levels, especially in the Rift Valley Province in the program baseline survey. Addressing these issues, and in particular those related to service provision, have been the main focus of the program in year one. Program activities have therefore focused on building capacity of service providers attached to specific program farmer groups, and facilitating farmer training in animal husbandry and feed conservation in particular.

Building capacity for food safety and quality assurance and working towards the establishment of a traceability system to enhance compliance with internationally accepted standards: Under the slogan "food safety is not negotiable", the program has been tackling food safety issues to ensure consumer safety is guaranteed. The program promotes the fact that milk is not just milk, and that quality is most important for consumer safety and for local processors to access export markets. To ensure environmental sustainability the program has put a lot of emphasis on biogas digesters as a technology that can be used as a substitute for fuel wood to ensure natural resource conservation as recommended in the program Persuap report.

Strengthening sector institutions, organizations, and firms to improve industry competitiveness: The program has focused on promoting the effectiveness and efficiency of sector institutions to enable them to address sector issues more efficiently. All organizations working with the program were assessed for weaknesses, strengths, opportunities and threats as a first step towards capacity building. Some of the key areas addressed are management, mobilization, fund raising, among others. The report is posted on the program website.

Environmental conservation by promoting biogas as an alternative source of energy - substitute for fuel wood: The program recognizes and appreciates the fact that the dairy industry is a user of natural resources. To conserve the environment, the industry must adopt a more cost effective and socially and environmentally friendly way. The program focused on promoting biogas use as a source of fuel to reduce deforestation, in addition to emphasizing the use of manure to produce fodder instead of applying fertilizer as another cost saving measure.

Promoting consumption of milk: The program also engaged in milk and milk product consumption campaigns as one way of promoting a healthy nation throughout the year. The campaigns targeted everyone, though children were focused on more because of the health benefits associated with milk consumption for children. A SoW has been developed to study consumer perceptions on milk quality and their purchase preferences to further inform the campaigns going forward.

In doing these activities, the program has cultivated a strong working relationship with sector stakeholders. The participatory nature of implementation, where sector stakeholders via the program facilitated Dairy Task Force (DTF), Regional Working Groups (RWGs), and the Milk shed Working Groups (MWGs) identify sector challenges and opportunities, has enabled the program to design appropriate solutions to the sector challenges and take advantage of the existing opportunities. Industry stakeholders have in addition noted that the goal, purpose, strategies and outputs of the program reflect national and regional priorities, and are relevant. The Business Development Services (BDS) approach to implementation has in addition helped the program reach a relatively high number of beneficiaries via partners/facilitators and service providers in its short life since start of implementation.

A detailed outlay of program activities and accomplishments are expounded in the next chapters, and are arranged by the program broad objectives/components.

3.1 Component One: Enhanced Capacity for Milk and Production Input Quality Certification and Market Promotion

Program interventions in this component continued to focus on strengthening dairy sector institutions and associations to equip them with the necessary skills and technical capacity to enhance industry competitiveness. This is informed by the fact that building institutional competence is key to facilitating development and fostering longer term sustainability through the empowerment of local actors. Another significant focal area in this program component is facilitation of market expansion. The program, through collaborators held a very successful consumption campaign that targeted the general public in the reporting period. A sample of the activities and outputs realized in the reporting period include:

a) Reviewed/updated 20 dairy standards and finalized development of the Good Manufacturing Practices (GMP) and the Dairy Code of Practice manuals

In the reporting period, the program organized and facilitated a highly successful workshop that reviewed **18** industry standards for a wide variety of milk products, and **2** key legislative documents. **The program has now surpassed the targeted maximum of three (3 industry policies/acts improved through its lifespan).** The week long workshop, attended by the Kenya Bureau of Standards Dairy Technical Committee members, reviewed and approved the texts of 18 milk products. The reviewed standards include;

- ✓ Raw Whole Goat Milk – Specification KS2147:2007 (This standard is now a Kenya standard)
- ✓ Milk and Milk Products – Guidance on Sampling ISO707 3rd edition 2008. (This standard replaces an older existing standard, and is an ISO standard that has been adopted)
- ✓ Pasteurized Camel Milk – Specification
- ✓ Evaporated Milk – Specification (This standard will be submitted to East African Community (EAC) and when approved there in April, will then become a Kenya standard)
- ✓ Cheese-Specification –Part 3: Gouda Cheese (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Fermented/Cultured Milk – Specification (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Animal Ghee-Specification (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Cheese-Specification-Part 6: Cream Cheese (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)

- ✓ Cheese-Specification-Part 5: Cottage Cheese (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Cream for Direct Consumption-Specification (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Cheese-Specification- Part 4: Tilister Cheese (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Milk and Milk Products-Code of Hygienic Practice (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Code of hygienic Practices in the Dairy Industry for Milk Carriers (This standard will be incorporated into the Code of Hygienic Practice).
- ✓ Cheese-Specification-Part 2: Cheddar Cheese (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Cheese-Specification-Part 1: General requirements (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Flavoured UHT Milk-Specification (This standard will be submitted to EAC and when approved there in April, will then become a Kenya standard)
- ✓ Code of Good Manufacturing Practice for the Dairy Industry (This document authored and submitted by Land O'Lakes, Inc, has been reviewed and approved as a KEBS document. It will be issued as Code, which will give it legal status. It will also be issued as a manual and as such will form the basis of the training that we will conduct for the MCC operators, the milk shop/bars owners and managers and of the processing plants)
- ✓ Mozzarella Cheese-Specification (This standard now becomes a Kenya standard).

Other industry legislations that were reviewed in the year include:

Dairy Regulations (formerly Dairy Ordinance)

The Dairy Regulation text was written and finalized, and has subsequently been reviewed and approved by the public technical committee. It has been submitted to KDB for review and internal discussion. This is a major piece of legislation and will mark a **key milestone once approved and adopted**.

Dairy code of hygiene manual

In the reporting period, the program facilitated the review of the Dairy code of hygiene. This was achieved through a very successful workshop held in November 2008. However, there is also an East African Community (EAC) Code of Hygiene

currently being discussed at the EAC level. (These documents are not identical. In the next EAC meeting, Kenya will propose to the EAC that they adopt the Kenya document which is viewed as being more comprehensive and superior). Though in themselves they are competent documents, the documents are very technical and not reader friendly, especially to the target audience -people working in the processing plants and the milk collection/bulking centers.

The program has since hired a contractor to produce a 'user-friendly' version of the formal Code of Hygiene documents. The user-friendly version also has a potential to carry advertising which could be leveraged for the costs of publishing. We believe this will go a long way to making the document reader friendly and beneficial to the target audience and the industry in general.

Program focus has now shifted to the legal aspects of the process and advocacy to make sure the new standards are enacted and implemented.

b) Developed one certification framework

A Good Manufacturing Practices (GMP) manual was reviewed edited and approved by the Kenya Bureau of Standards (KEBS) dairy technical committee and been issued as an official KEBS Standard. The GMP Standard is the result of Program having initiated and submitted a raw draft document to the KEBS dairy committee where through a series of meetings, it was reviewed, edited and finally approved.

The GMP standard is aimed at imposing a framework for requiring three types of dairy businesses to implement and follow sanitary and hygiene operations in the daily operations of the business. The three types of business which are targeted are Milk Bulking/Collection centers, Milk Bars/Shops and Milk Processing plants.

Kenya suffers from a very low quality raw milk supply – that is essentially milk with a very high bacterial load and which is frequently adulterated. GMP requires implementation of management practices which through documented operating procedures, requires the operators to adopt sanitary practices, while at the same time imposing a defined management structure on the daily operations.

It is the program's intention to train all MCC, milk bar operators and all processing plant management personnel on GMP. A consultant has been hired to carry out the training. The target number of trainees is estimated at 1200 – 2000 nationwide. ***When the training has been completed, the program will aim to have KDB make adoption and implementation of GMP a business license requirement, essentially making it "a quality certification framework".*** The KDB inspectors will carry out the inspections to ascertain that the businesses have adopted GMP and are maintaining its implementation. If all progresses well with the training and the implementation stage, GMP should contribute to reducing the high bacterial loads in the Milk collection Centers (MCCs) and the milk bars/shops. This will be an effective improvement in food safety.

Completion of the GMP manual marks a key milestone for the program in terms of developing quality (feeds and milk) certification frameworks for the country. The program has therefore **met the target of 1 certification framework developed/reviewed/implemented by end of year 2.**

c) Trained 38 Kenya Dairy Board (KDB) regulatory inspectors on Pasteurized Milk Ordinance and regulatory inspection

Quality of milk and dairy products present significant risks to consumer safety in the domestic front and is a hindrance to competitiveness in the regional and international markets. It is also a barrier to entry into regional export markets. To address these, the program continued working closely with the Kenya Dairy Board on milk quality-related issues in the reporting period. Significant progress was realized on two key activities, including training of the Kenya Dairy Board (KDB) regulatory inspectors and the rolling out of the KDB Laboratory Assessment.

The program team strongly believes in building capacity of the KDB personnel tasked with regulatory inspection. This is crucial for the performance of the program since the activities are geared towards enhancing quality of milk at all nodes of the chain for increased industry competitiveness. All inspectors therefore need to have the requisite technical capacity on milk inspection. In the reporting period, **all 38** regulatory inspectors were trained on Pasteurized Milk Ordinance and regulatory inspection. **Ten (10)** female officers attended. The second phase of the training was facilitated by a United States (US) regulatory inspector. The session exposed the KDB inspectors to the US regulatory inspection systems, practices and techniques which have been reported to be highly effective to further enhance their capacity. **Two (1 female and 1 male) KDB inspectors were then sponsored for a trip to the USA** to learn firsthand how inspection is carried out.

The training was designed to respond to the technical needs of the officers who mentioned a number of issues that they needed addressed by the course. These included:

- An update on dairy standards
- Procedures and the fundamental issues/critical areas to consider when carrying out a dairy plant inspection
- Up to date knowledge on: heat treatment equipment inspection; Milk pasteurization process and what inspectors should focus on;
- Routine dairy inspection approach
- The critical control points for detecting deterioration of quality, among others

Through the program sponsored trainings, the dairy inspectors are expected to be better prepared to conduct a meaningful dairy product safety inspection of plants and their pasteurization systems under the new Ordinance.

"When the workshop was completed and the visit to the plant finalized, a review meeting was held to discuss the observations everyone had made. There were a number of problems with the construction of the plant's pasteurizer and with its operation. It was obvious from the responses from the participating inspectors that they were now better able to document most of the problems and were aware of the product safety concerns that could result"

Mr. Coleman, Dairy Regulatory Inspection Specialist.

"There are a lot of mistakes in the processing plants but no one knew what should be done or even how to carry out quality inspection. What we have been exposed to here are not covered in the local Universities. It was a world class session."

Mr. Mburu, KDB Regulatory Inspector (Nairobi Region)

This should more adequately ensure that "every particle of milk has been properly pasteurized, packaged and stored" so that dairy products produced in Kenya will not be of a public health concern to the consumers.

The whole training exercise was a great success. The inspectors attending indicated that the session had added value to their skills and knowledge and that it would enable them to better accomplish their work. The trainer from the USA, Mr. William Coleman, dairy regulatory inspection specialist, said he had seen a marked improvement in the ability of the inspectors.

The KDB has since reported greater efficiency - on the part of their officers - and collaboration on quality enforcement by processors. The KDB has in addition reported a major change in approach and morale of inspectors, and greater cooperation from processors as a result of the training. The inspectors are now better able to document most of the problems with processing plants in the country and are aware of the product safety concerns that could result.

d) Held one (1) Milk consumption campaign to stimulate demand for milk and milk products

The program team in collaboration with the Eastern and Southern African Dairy Association (ESADA) and the Dairy Task Force held a highly successful milk and milk products consumption campaign. The campaign's main goal was to help increase milk consumption and position milk as a beverage of choice to stimulate local demand. The milk consumption campaign and the Milk Festival 2008 were held between November 4, 2008 and December 7, 2008. The campaign was launched on November 12, 2008 by the Minister of Livestock Hon. Mohammed Kuti at a breakfast meeting which served well as a platform for various private sector stakeholders to meet the industry regulator and the public sector (government) and air some of their concerns. The launch was covered by all the major media houses. Over **7,500** people attended the event.

Lack of market for processed milk and milk products is often cited as a serious challenge to the growth of the sector locally. Kenya is reported to have low average per capita milk consumption, estimated at 80 litres per year, against the World Health Organization (WHO) recommended 200 litres per year. Production and processing statistics tell a totally different story however. The country produces an estimated 3.8 billion litres of milk annually. Only 55% of this milk is marketed while the remaining 45% is consumed at home. Of total production, only 20% is processed. There are over thirty four (34) processors with an installed capacity of 2.9 Million litres a day. These processors operate at an average of 45% of their installed capacity. In essence, these contribute to high cost of production per unit of output. This scenario presents a huge opportunity for the industry. The need to expand the market for dairy products is therefore critical and will bring down the cost of production and make the commodity more affordable to consumers as well as increase returns to producers down the value chain

Milk and milk products are also not well positioned in the minds of consumers. The products feature low in the youth markets "cool" radar relative to other beverages. Many beverages which do not have as much nutritional value as milk and which do not contribute significantly relative to milk to the country's GDP as well as the welfare of the country's populace have bigger acceptance. This campaign aimed at significantly changing consumer perception towards milk and milk products, as well as to inform the public on the various uses of milk and milk products with a view of developing new uses of milk and milk products. In addition, the activity aimed at creating "milk occasions" by pairing milk and milk products with other complimentary products e.g. Cheese and Wine, Breakfast cereals and milk, berries and milk, among others. The event also featured a school milk day.

School Milk Day

Over **3000** primary pupils attended a milk fete at the Splash Water world on November 15, 2008. The event was attended by Deputy Prime Minister, Uhuru Kenyatta, and Minister for Livestock Dr. Mohammed Kuti among other dignitaries. The event was a kids' fun day aimed at promoting consumption of milk among the primary schools. **14** processors and support industry participated and exhibited at the school milk day. The processors donated milk and milk products to the kids.



Primary pupils enjoy milk at the event.



The last major milk consumption campaign was held in 2003 by Kenya Dairy Board and was aimed at sensitizing consumers on milk safety. The campaign had a profound impact on consumers in that many changed to consumption of certified milk. This led to increased milk consumption particularly in the urban areas. Since 2003 no major consumption campaign has been held threatening to reverse the gains made. The Milk Festival was a key milestone event and is expected to trigger increased milk and milk products consumption in the domestic market. The program intends to make this a common event throughout its life. We will be reporting its impact in future reports.

e) Continued working towards a local “world class” milk and milk products laboratory

In the reporting period, the KDB requested the program to assist in assessing the capacity of laboratories in the country to identify and help rectify any areas of weaknesses. This is geared towards helping position the laboratories favourably for accreditation in the region as a first step towards increasing the volumes (from

Kenya) of milk and dairy products traded within the region. The program therefore commissioned a study to assess the technical needs of milk laboratories in the country with a view to identifying one for upgrading. The assessment provided a basis for facilitating interventions to improve the performance of the various laboratories. The program is currently in the process of identifying a laboratory – from a shortlist of two laboratories - for capacity building to upgrade in to regionally acceptable issuers of quality certificates.

f) Built capacity of key livestock sector public institutions

Program activities also focused on building the capacity of key industry institutions in the year. The program started by carrying out a comprehensive assessment of their strengths, weaknesses, opportunities and threats to identify key intervention areas. The capacity building forums, organized in collaboration with key stakeholders, including the National Dairy Task Force (DTF) and local business training firms, covered diverse areas. These were training in financial management, strategic planning, institutional transparency and accountability, publicity, among others. This is expected to transform them into viable, professional and transparently run organizations to enhance sector performance. Specific activities and the associated outputs are elaborated below.

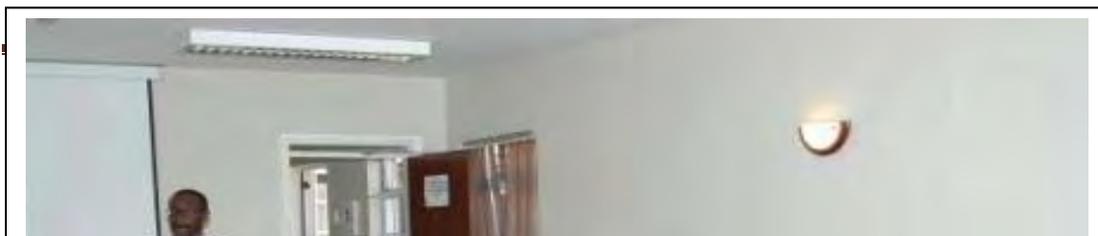
i) Held a Workshop for the Chief Executive Officers (CEOs) of dairy sector public institutions

In the reporting period, the program facilitated a workshop for the Chief Executive Officers (CEOs) to refocus the thinking of the top leadership of the public sector institutions in the dairy sector towards a competitive mental framework. ***The meeting was attended by 21 leaders of dairy organizations ranging from ministry officials, livestock parastatal heads, research organizations, and university departments***, among others. One of the major activities of the program is to facilitate institutional capacity building at industry level. In order to lay a firm foundation for these capacity building initiatives, it is essential that the top leadership in all the sector organizations engage with the program at the same level with a mindset geared towards global competitiveness.

The workshop's overall objective was to engage the top leadership of the various public institutions and associations in the dairy sector in order to build a mental framework that would focus on:

- Integrating organizational strategic resources for competitiveness
- Understanding the key role each organization plays in supporting Kenya's dairy sector competitiveness
- To focus on results through synergistic strategic relationships with other players in the dairy sector.

The session, attended by the key industry leaders (including a representative of the Permanent Secretary, Ministry of Livestock) was a great success.





Mr. Kirwa MD, Agricultural Development Corporation (ADC), Dr. Abdul Faraj Chairman, Dairy Technology Department, Egerton University and Dr. Murekefu Central Artificial Insemination Station at the CEO workshop.

ii) Facilitated capacity building interventions for Kenya Dairy Producers Organization (KENDAPO)

KENDAPO is a national association of dairy producers who have an interest in the development and promotion of the dairy sector, and was formally registered in 2007. The assessment conducted by the program on its capacity however revealed a number of weaknesses that impact negatively on its performance, the

key ones being a weak management structure, lack of a secretariat, lack of a strategic plan, interim officials who have served since its registration and a very small membership base due to lack of visibility. Program activities focused on addressing these weaknesses in the reporting period. Key activities included assisting KENDAPO develop an implementation plan for the strategic plan¹, and ensuring that the organization develops a resource mobilization strategy for long term self sustainability. Progress realized in the quarter includes:

- The strategic plan has been finalized
- A implementation map for the Strategic Plan has been developed
- Funds have been leveraged: the East African Dairy Development Program agreeing to support the setting up of an office and to hire a secretariat.

iii) Facilitated capacity building interventions for Kenya Livestock Breeders Organization (KLBO)

The KLBO is an Independent organization formed under the auspices of the Agricultural Society of Kenya (ASK). It is responsible for the collection, analysis and maintenance of livestock pedigree and performance data and its subsequent certification. The organization provides two services: Livestock registration with accurate and authentic ancestral and identification information of animals (including date of births and pedigree details); and Dairy recording services, which details dairy milk yields and milk quality analysis. These services are essential if sector competitiveness is to be achieved. The KLBO has benefited from support from a number of development partners, which has led to the development of a strategic plan and modernization of its data systems. However, use of these services is still very low, with a program survey showing that majority of dairy farmers (over 50%) do not know what KLBO does.

In the reporting period, the program activities focused on two critical areas for capacity building, with the main activity being publicizing the KLBO mandate and its benefits to dairy farmers in the country. The program actively participated in the East African Breeders Show held in Kenya from 10th to 12th of June 2007. The program, in collaboration with sector stakeholders through the Dairy Task Force, sponsored **1300** farmers to the show. This was meant to expand the reach of these services to the wider milk producing fraternity².

The second activity focused on building the organization's capacity to respond to the demand for breed inspection and recording of yield data after the marketing effort. These efforts will continue in the next quarter.

¹ The strategic plan was finalized in the quarter and was funded by Heifer International following the programs capacity assessment.

² This process is hindered by the organizational culture of exclusivity of breeders associations.

iv) Facilitated capacity building interventions for Kenya Livestock Producers Association (KLPA)

The KLPA is an apex organization that provides a voice for small-scale livestock producers at the policy making level. The organization's mission is to ensure improved livelihood of livestock producers through formulation of appropriate policy, stimulating reforms, promotion of good livestock husbandry practices, collecting and disseminating information, and promotion of general interest of its members. KLPA is currently in a very good position to move on to the next level of becoming a truly apex association representing various producer associations at the policy level. The fact that it is currently representing livestock interests at the Kenya private sector alliance and through that forum to the prime Ministers' round table, gives the organization an important leverage that can be used to propel it to greater heights. However, its leadership both at the CEO and the board level lacks the drive to push the organization forward with vigor and vision.

The program facilitated capacity and performance assessment also revealed a number of weaknesses that need to be addressed if the organization is to realize its mandate. The assessment indicated that the Board lacks the necessary skills on organizational development, governance as well as advocacy. In addition, they do not have a clear understanding on the implementation of their Strategic plan. It was therefore found necessary to train the board on the technical aspects of lobbying and advocacy as well as guide them in clarifying their vision, mandate and implementation strategy.

Specifically, a training program was designed and provided in the year to: Help the members of the Board classify their personal motivation in serving on the board of the organization; facilitate the members of the board in clarifying the organizations' vision, mission and strategy; build a knowledge base on what lobbying and advocacy entails and thereby give the board a clear perspective on what it would take for them to fulfill their mandate.

A key outcome from the training was the consensus to shift the focus of KLPA membership from individual farmers to associations representing various farmer interests. The chairman of the board embarked on a process of talking to various livestock producer associations in order to build consensus on KLPA membership. The board expressed its desire to be reconstituted in order to allow for representation of the various associations that will form the bulk of its membership.

It was also evident from the discussions that the board was clearer in its perspective of the scope of work they need to do in order to get the organization on the right track. It was agreed that the next board meeting would discuss the way forward with a view of putting the organization back on track.

v) Capacity Building of Kenya Dairy Processors Association (KDPA)

The program worked towards reviving the Kenya dairy Processors Association. Through a grant to the East and Southern Africa dairy Association (ESADA), the

program facilitated strategic planning workshops as a first step towards reviving the once robust organization. Once revived, the association will provide a platform for wider sector reach for the program, especially in dealing with milk quality issues in the country. We also aim to partner with the organization in milk consumption campaigns in the country. The organization was re launched on October 8, 2009.

g) Continued facilitating meetings of the National Dairy Task Force (DTF), Regional Working Groups (RWGs) and Milk Shed Working Groups

The Task Force is now living to its billing as originally proposed. The DTF is currently leading the implementation of policy changes and action plans that are critical to enhancing dairy sector competitiveness in the country. In the reporting period, the DTF held **10** meetings to discuss the various issues affecting the dairy industry in the country. The Regional Working Groups (RWGs) and Milk shed Working Groups (MWGs) also held meetings in each quarter. The program used these meetings to disseminate the assessment findings and the related recommended interventions of a number of sector studies.

Following presentations of the results of industry assessments, ***a number of task force members have supported the implementation of some of the proposed interventions (e.g. strategic planning for both KLBO and KENDAPO).*** The open nature of the discussions has also realized additional benefits of reducing duplications and the associated resource wastage among donor funded programs. Processors, who are heavily represented in the task force, have agreed to liaise with the program in identifying strategic locations for their milk coolers to be placed in the program area. ***Four (4) coolers have since been installed in the program milk sheds.*** The program also organized and facilitated capacity building sessions, especially on policy advocacy, for the DTF members. It is hoped that this will go a long way in pushing for sector policy reform in the country.

The task forces helped resolve a number of sector issues/ challenges in the reporting period. Some of these were:

- Review of Dairy master Plan, which was initially shelved due to inadequate collaboration, is now back on track. The Permanent Secretary, Ministry of Livestock, has since appointed a 12 member technical working committee to oversee its review. The committee will operate under the National Dairy Task Force and will answer directly to the Permanent Secretary. The program is represented in the task force. The program has since facilitated the development of a SoW for its review to align it to Vision 2030.
- The E Dairy project which aims to network the dairy industry in the country and to institute a traceability system³ for the industry is now at an advanced stage thanks to the DTF. The project, which has an overall budget estimated at **US\$ 12.5 million**, will be funded to a large extent by the DTF members.

³ This will go a long way in enhancing industry competitiveness

The program contribution has already been approved by USAID. Progress on this noble initiative will be reported in future progress reports. Once finalized, this will form a considerable proportion of funds leveraged by the program.

- The program leveraged a considerable amount of non project resources through collaborations with other sector players via the DTF in the reporting period. These include:
- An estimated **US\$ 10,000**⁴ for preparing manuals on good husbandry practices/farm toolkits from the Netherlands Development Organization (SNV). Work is in progress.
- Milk processors have installed 3 new milk cooling tanks valued **US\$ 262,500** at Milk Collection Centers of farmer group working with the Program.
- The program facilitated sector assessments and Regional Working Groups (RWGs) recommendations have resulted in the government acquiring funds for disease control. The Government has been carrying out vaccinations in the Rift Valley province in the year, and has used an estimated **US\$ 3 million**.
- The DAI program of USAID has finalized a survey on credit access in the dairy value chain in close collaboration with the program (DAI is using a sample of farmers in the program milk sheds), and has spent an estimated **US \$ 66,667**. Once finalized, this report will form a basis for action along the value chain.
- Farmers have spent a substantial amount of money participating in program activities. These include own transport, and in some cases accommodation costs. In the reporting period, farmers spent an estimated **US\$ 67,500** in transport and accommodation.

This now takes the total non program funds leveraged to **US\$ 3.4 million against a target of US\$ 10 million in year two**.

Perhaps a more interesting outcome of the task forces meetings, especially the RWGs and MWGs is increased access to information, - especially market information - by farmers. This has resulted in increased farm income as depicted in Box 1.

⁴ 1US\$=Kshs. 80

Box 1: Regional Working Groups (RWGs)/Milk shed Working groups (MWGs) and the politics and milk price

With liberalization of the dairy industry in the mid 1990s, government controls, which to some extent guarded farmers against “unfair” product price, was abolished. Cut throat competition that has emerged currently has somehow failed to “benefit” farmers. Some industry players prefer to deal directly with farmers, with some advertising on television for individual farmer membership, who they then pay whatever price they think is appropriate.

Farm gate price in the country currently range from Kshs. 25 to 30 per kilogram/liter of milk depending on location, whether farmer is affiliated to a group, and the volumes of milk delivered (the quantity bonus scheme), before transport deductions. Processors in many cases buy milk at different prices in different groups and geographic areas. Processors especially, have been blamed for employing a “divide and rule” approach. In Lessos milk shed for example, individual farmers selling to the New Kenya Cooperative Creameries pocket Kshs. 21 per kilogram of milk (after deductions of up to Kshs. 4 for transport), while those affiliated to groups pocket a minimum of Kshs. 24 per kilogram of milk delivered after transport costs (and are charged only Kshs. 1 per kilogram of milk delivered for transport). The company collects milk in both cases. This has largely been blamed on lack of information.

The Regional Working Groups have helped a great deal to disseminate information and even up farm gate prices to some extent according to Mr. Maina, Secretary, New Nginda Dairy farmers self Help Group. According to him, the RWG forums, where all stakeholders in the region meet, put their challenges on the table and chart out/propose solutions have helped a great deal in making sure that information reaches the people. “Even hawkers and milk bar operators now pay higher prices” he says. Even though this provides stiffer competition, he says it is positive *“because it is the farmer who benefits. If this continues, we will play a very big role towards eradicating poverty in this area”* he says.

3.2 Component Two: Dairy Smallholder Business Organization Development.

Following the identification of the beneficiaries, the program focused on implementing the action plans developed by the PROGRAM assessments, and the recommendations of the Regional Working Groups. Activities in this component targeted two specific categories of actors in the value chain: farmers, and Smallholder Business Organizations (SBOs)/Milk Bulking Centers level. Specific achievements are organized by actor.

a) Smallholder Business Organization (SBO)

Program activities focused on strengthening these groups to reach a significant number of smallholder farmers with technical skills and business support services in a cost effectively way. The assisted groups have provided their members with relatively stable market outlets, more bargaining power and affordable credit mechanisms for inputs suited to their cash flow needs in the year – mainly on a check off basis at end of month. The program has worked with **63** Smallholder business Organizations (SBOs)/Milk Bulking Centers/farmer groups with about **139, 284** registered farmers - **79, 830** active (**27,142** female), **surpassing the target of “50 groups strengthened” by end of year two.**

After identifying their strengths and weaknesses⁵, the groups were taken through an action planning workshop, an interactive process where the group management and members identify the major goals of the group, strategies needed to achieve those goals, the key obstacles and how and when they will be overcome, prioritizing on the needs of the organization. The session concluded by formulation of action plans for each group, specifying the role of various stakeholders, the time frame and measurable indicators that the team will use to gauge progress. This allows for systematic implementation of activities with the farmer organization taking charge of the process. All the **63** groups have benefited from capacity building activities organized and facilitated by the program, especially training of management committee on leadership which was identified to be a major concern. However some realized considerable benefits from the program through enhanced access to business support services, especially through program facilitated linkages/contract negotiations for higher milk prices. Some of the benefits and the specific groups benefiting include:

i) Helped negotiate “fairer prices” for **two** farmer groups, realizing considerable incremental income for the member farmers. These include Boyo (from Ksh. 23 per liter to 29), and Mathera (from Kshs. 23 to 27). Farmers started receiving the new prices in April and July for Boyo and Mathira respectively. **This has earned 4,074 farmers Kshs. 3,474,486 as additional income. Overall, value of milk sold by farmers working with the program in the reporting year was US\$ 26.4 million and surpassed the target for year two (US\$ 21.38 million).**

ii) Assisted **four** groups in developing strategic plans and the implementation maps of the plans. These include Limuru, Hexagon, Kikuyu, and Tulaga. All groups have received training on strategic planning and are currently in the process of developing the plans with program assistance.

⁵ A detailed assessment was carried out after selecting the SBOs that the program is currently working with in the eight milk sheds. The assessment revealed a number of constraints/weaknesses that currently negatively impact their performance and designed action plans for all groups assessed that if implemented, will greatly improve their operations. Key weaknesses identified by the assessment were: Most organizations did not seem to have concrete, competitive strategies to enhance their growth and development and achieve member satisfaction; lack of strategic planning and financial management skills; management capacity is inadequate in most farmer groups and in some cases non-existent; majority of farmer groups lack capacity to produce and utilize financial reports; tendency among the farmer groups is to hire unqualified managers who have limited skills in cooperative and financial management but whose remuneration they can afford due to low financial base; very low registered membership or low active membership verses total registered membership which limits the business volumes and opportunities for economies of scale; most of the organizations do not have systems in place to manage change; none of the farmer groups has a business plan; the systems for monitoring and evaluation are poorly developed and there is low adoption of modern information technology such as ICT; almost all organizations have at least one partner but the partnership is not structured, or formalized in most cases, majority being milk processors/ buyers and extension service providers, inadequate qualified milk graders or inadequate skills and facilities for milk handling and testing as most relied on milk processors among others.

The assessment covered **all** SBOs that currently work with the program and had an **overall rating of 1.78 on the Capacity and Performance Index**. The action plans and the SBO Capacity and Performance Index score will provide a basis for future monitoring as we progress with implementation. A map showing the program farmer groups is appended (Appendix 1).

iii) Facilitated the development of business plans for two farmer groups (Limuru and Tulaga). The plans will go a long way in making the groups operate as business entities – a key focus of the program. It is hoped that the plans will make the group more focused on the goal – which is maximizing revenue to the member farmers through operating in the most cost effective manner.

iv) Organized farmers, especially in the Rift valley Province, into groups and facilitated contract between dairy processors and the groups. Six (6) groups – three in Kericho milk shed (Mosop, Waltany and Tenwek), and three in Lessos milk shed (Mosoriot, Cheptiret, and Kipchamo) now bulk milk and sell collectively to processors.

This has resulted in significant incremental income to member farmers as a result to better prices paid by processors. NKCC pays individual farmers Kshs. 21 (deducting 4/= for transport) but pays those affiliated to groups Kshs. 24 (and deduct 1/= for transport). **This activity realized the farmers Kshs. 998, 310 as incremental income.**

iv) The program also provided technical assistance to Boyo farmer cooperative to set up “stores for resale”. The program facilitated a cost benefit analysis of the venture. **This will enable the group’s active members - numbering 1074 – access dairy inputs on credit and be deducted from the monthly milk delivery check.** The group management has reported significant interest from farmers, with 60% of farmers benefiting monthly on average.

v) Linked **all the 63 farmer groups** with service providers. *All the groups working with the program have access to Artificial Insemination (AI) providers, animal feeds and feeding experts, animal health providers, and milk quality experts.* We are also working with a few biogas experts. *Adoption of biogas as an alternative source of fuel, manure for farming, and fodder crops will be key areas of focus going forward as program natural resource conservation measures.*

In Box 2, on the following page, we illustrate how one player has benefited from program activities.

Box 2: Program's Business Linkages results in improved farm income for Boyo Cooperative Society members

To Boyo cooperative society, operating "was a mammoth task before we started working with the program", according to the chairman, Mr. John Maina. "We were spending sleepless nights as management, wondering how we would pay farmers a "good price", and at the same time meet our obligations to the employees and landlord. Combine this with the many players in the milk business in the area, with even the New Kenya Cooperative Creameries (NKCC) buying directly from farmers and you have a recipe for disaster. "Farmers would deliver milk one day, then disappear for the rest of the month. Life was quite hard until we heard of the program".

"After attending the program launch in the milk shed, we decided to apply to work with the program and signed the Memorandum of Understanding very fast. We wanted a way out and just decided to try you." The program did not disappoint. During a PROGRAM organized and facilitated stakeholder forum held in the first quarter, Boyo SBO had an opportunity to meet and negotiate with Pamside Dairy for a better price. Boyo had been selling milk to New KCC at a price of Kshs. 22 per litre. Pamside offered to pay Kshs. 28 per litre. It is able to pay farmers a much better price and now record much higher deliveries and farmer loyalty. The cooperative's 1070 active members have since earned Kshs. 2,474,486 as additional income as a result of this linkage.

Other than price negotiation, Boyo has benefitted through farmer exposure tours; and currently have two demonstration farms as a result of program intervention. The management committee members have received training on leadership, ICT, and strategic planning. The chairman says that the situation is much better now. According to him, bringing education on dairy closer to farmers, through the model farms approach, is better compared to cases where farmers organize their transport to visit a distant farmer (e.g. Mwalimu Njuguna of Karura – Kiambu), where they spend a lot of time travelling, pay for the training at Kshs. 350 per person, and are taught for only one hour. Program training lasts for more than two hours and is combined with practical demonstration while education is continuous over a period in order to cover several practices. We have also managed to start a feed and minerals store through the program support. This will keep farmers more loyal to us.

Today the group officials are confident that they will be able to pay farmers over 81 percent of their earnings and are confident of the days ahead.

b) Farm level

Program activities in this key area focused on facilitating provision of technical skills on good dairy husbandry practices at the farm level to increase farm productivity and reduce cost of production. The program collaborated with key stakeholders/service providers such as the Ministry of Livestock Development, Dairy Processors, animal feed manufacturers, private AI providers, agro-vets, among others in organizing and facilitating learning platforms for farmers and private business service providers. The network of collaborators will ensure continuation of the activities beyond the lifespan of the project. The segment below details the projects achievement on productivity indicators and some of successful productivity-enhancing activities undertaken in the reporting period.

i) Program promoted feeds and feeding has helped stabilize cow productivity at **6.4 lts per cow/ day** in the program area compared to **6.5 lts per cow/ day** observed during the baseline survey. This falls short of the year target – at **12 lts per cow/ day**. ***This is mainly due to the severe draught that has ravaged the country for two years running now. The draught has severely affected the livestock industry, with massive yield decreases observed due to lack of fodder. Non program***

farmers have fared much worse. In Ambani Dairy in Nyeri Milk shed for example, management report that yield has dropped to 1 – 2 liters/cow/day, while in Rift valley (Bomet), yield under average management has reduced to about 3 liters on average.

Despite the low overall gains in productivity in the year due to the severe drought, a significant proportion (45%) of farmers in program area registered gains in yields way above the sample average. Some milk sheds such as **Kabete (10.55 liters/cow/day)**, **Gatanga (7.07 liters/cow/day)**, and **Nyeri (7 liters/cow/day)** where farmers aggressively took up the program’s feeding and husbandry practices achieved over **26%** rise in yield.

ii) Program promotion of adoption and use of cost cutting feeding regimes, including adoption of crop residue preservation, hay, silage, leguminous fodder technologies – Lucerne, desmodium, feed conservation – silage, hay, crop residue preservation, and feed formulation – use of molasses and microbes, bore fruit as cost of milk production recorded only a slight increase- **by 12 % to Kshs. 16** compared to Kshs. 14.20 recorded during the baseline. 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. Other cost cutting technologies have also recorded significant increases in awareness levels and use. A survey of sample farmers in operational zones also indicates that **36%** currently use program promoted feed conservation technologies (silage, crop residues preservation and hay) **compared to 11% observed** during baseline survey (August, 2008). Table 1 shows the performance by different beneficiary categories.

Table 1: Yield, adoption of feed conservation technologies and cost of production: A comparison of baseline (August, 2008) and current (August, 2009) figures

Respondent Category	Mean Yield (Lts/cow/day)	Adoption of Feed conservation technologies (%)	Cost of production (Kshs. Liter)
<i>Baseline – August, 2008</i>	<i>6.5</i>	<i>11</i>	<i>14.20</i>
Whole sample – August, 2009	6.4	36.1	16.0
Sex			
Male	6.35	34.8	15.2
Female	6.36	37.8	17.6
Age of farmer			
Youth	5.32	24.8	13.02
Above 30 years of age	6.39	37	16.22
Milk shed			
Nyeri	7	25.2	22.7
Gatanga	7.07	39.7	15.7
Kabete	10.55	53.9	24.8
Lessos	5.89	27.2	12.1

Transnzoia	5.96	45.2	13.8
Kericho	5.93	10	10.1
Nakuru	4.92	43.1	16.8
Kinangop	5.41	48.8	14.5

iii) The program has been collaborating with key industry stakeholders in organizing and facilitating capacity building of farmers in various forums such as field days, seminars and workshops in the year. These forums covered the key aspects of animal husbandry – genetics/breeding, feeds and feeding, animal health and milk quality. A total of **24,736 farmers (23% female)** benefited directly from the program outreach activities in the reporting period, while over **40,000** others were reached indirectly in shows - breeders shows and exhibitions. This falls short our target of 54,000 farmers by end of year two. **We are however confident that this will be achieved and surpassed by end of year two of program implementation – end of May 2010.** A key emphasis area has been on-farm demonstration on feed conservation techniques to enable smallholders conserve feed in wet seasons (when feed is abundant) for use in the drier months of the year. On breeding, program has facilitated trainings to impart modern breeding techniques to commercial service providers and farmers to improve the genetic base of their dairy cows. Farmer trainings were achieved via exposure tours, field days, and model farms / on farm demonstrations. The section below details a sample of activities undertaken in the reporting period.

iv) The program has focused on promoting appropriate technologies and information on feed conservation, feeding and good animal husbandry as a basis for increased productivity and increased incomes. The program goal is to equip smallholder dairy farmers with modern technologies and skills on good animal husbandry and feeding regimes to enhance production of quality milk for the market. Some of the technologies promoted in the year are: milk quality systems – component analyzer, tit dips, porta check, mastitis kits (3); new breed (distributed by fleckvieh East Africa); ICT – data capture systems; new feeds – silage, hay, mola plus; fodder-Lucerne, ; Grasses- oats, Rhodes,; use of Artificial Insemination, among others. These activities have yielded significant results. Service providers working with the program have recorded increased business selling silage materials, fodder seeds, and number of inseminations in the program area. **The farm level survey also shows a marked increase in the proportion of farmers using AI (at 59.5%) compared to the baseline proportion (39.9%).** Distribution by beneficiary category is shown in Table 2.

Table 2: Artificial Insemination technology adoption: A comparison of baseline (August, 2008) and current (August, 2009) figures

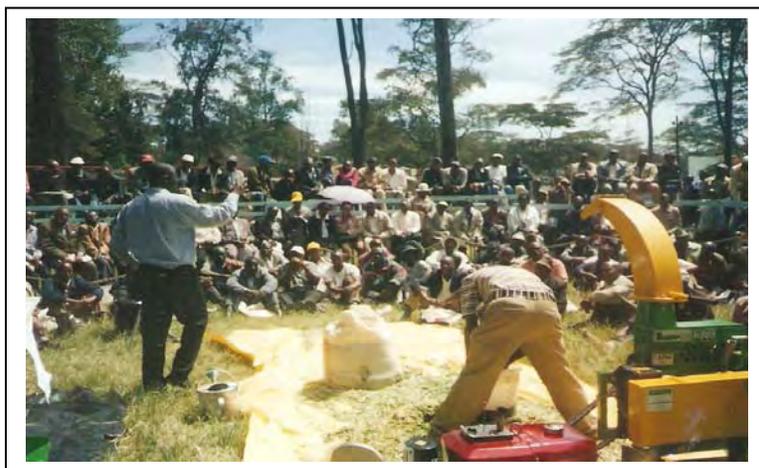
Respondent Category	Technology adoption - AI (%)
<i>Baseline</i>	<i>39.9</i>
Whole sample	59.5
Sex of farmer	
Male	60.5

Female	60.5
Age of farmer	
Youth	43.1
Above 30 years of age	60.8
Milk shed	
Nyeri	90.4
Gatanga	74.5
Kabete	97.8
Lessos	22.8
Transnozia	38.9
Kericho	49.8
Nakuru	90.4
Kinangop	70.1

The program farm level training activities have employed four approaches: Dairy learning group/farmer field school approach, model farm approach, exposure tours, and the field day approach. Exposure tours and model farms have especially been appreciated by farmers, and have therefore were given much emphasis in the year, perhaps given the practical nature of the setup. These two approaches are discussed in detail in the sections below.

i) Exposure tours

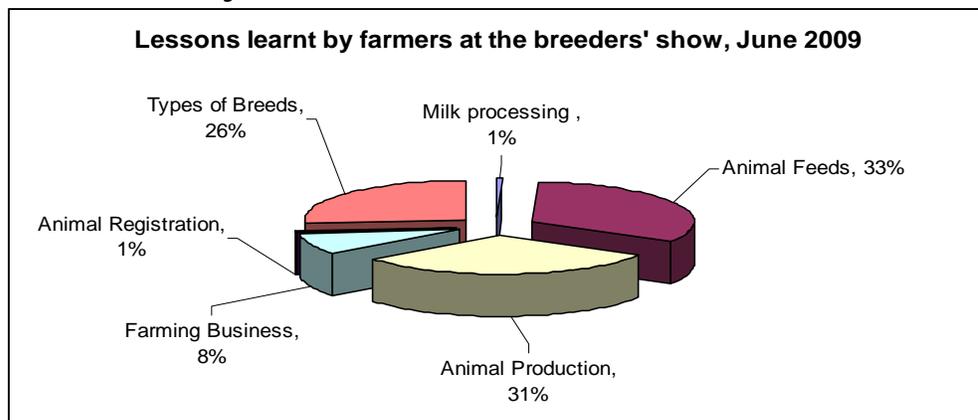
The program directly assisted more than **1,300** farmers from the program milk sheds to attend the East African Breeders show in Nairobi. The breeders’ show is an annual event organized by a committee that was originally initiated by KLBO but which later expanded to a trust mostly representing breeders and breeder societies. The breeders’ show provides breeders from all over East Africa with a forum to exhibit their stock, create awareness on the breeds, provide markets for willing breeders and educate farmers on breeding and management issues. The 2009 breeder’s show took place from the 10th to 12th of June at the Jamhuri park show ground, Nairobi. The program partly sponsored the event. Over **30,000** farmers attended.



The program partners/service providers demonstrate silage making at the breeders show in Nairobi

The breeders show presented a good forum for learning good breeding practices. It also provided a good opportunity for farmers to interact with renowned breeders in the region and probably develop contacts which they may call upon for herd upgrading in the program life and even beyond. At the end of the show, farmers were asked to choose between 6 categories of lessons learnt at the breeders' show namely types of breed, animal registration, farming as a business, animal production, animal feeds and milk processing. Results indicate that the key lessons learnt were about animal feeds, 33% of farmers overall, animal production lessons (31%) and types of breeds (26%). Full results are shown in the figure below.

Lessons learnt by farmers at the breeders show, June 2009



The program in addition organized four (6) other exposure tours to farms within the milk sheds for farmers to learn from fellow farmers. A total of **360** farmers benefited.

ii) Model Farms

Prior programs – Kenya Dairy Development Program (KDDP) among others – have highlighted the important role that learning from other similar farms (size and locality) play in technology and/or management practice adoption. The Program management team has therefore made it a policy to have model farms in all the milk sheds where farmers can go and see firsthand, the benefits of the various technologies the program promotes. The program **developed 24 model farms** in the reporting period. Plans are underway to increase the number to at least one model farm per farmer group.

At the farms, farmers see firsthand the benefits of good breeding and feeding practices. They also learn about the various types of dairy fodder and feed conservation technologies, including the preservation and use of crop residues as animal feed to reduce the cost of production while increasing yield. In the development of the farms, the program has focused on selecting two types of farmers who majority within some locality/farmer group can associate their farms

with: a progressive farmer (advanced in terms of technology adoption and yield) and a basic farmer (one who is still learning the basics of dairy farming as a business). The farms promote cost cutting and productivity enhancing production technologies and management, and management practices that enhance milk quality. The pictures below were taken from two of the program model farms in Gatanga and Nyeri Milk sheds.



Left: A Crop of Lucerne at a demonstration farm in Nyeri Milk shed. Right: A heap of pineapple residues used as dairy feed at a demonstration farm in Gatanga Milk Shed



Dairy animals feeding on silage at a demonstration farm in Gatanga Milk shed

These farmer training initiatives have started bearing fruit in some milk sheds. In Lessos milk shed for example, Cheptiret milk cooling plant which has perennially been operating under capacity has registered immense growth in volumes of milk delivered. The plant currently operates at full capacity and has an excess of 600-700 per day that they transport by cans, due to program intervention. It is hoped that this will also be replicated in other milk sheds to increase volumes sold by small holder farmers. The New Kenya Cooperative Creameries Eldoret Branch manager had this to say:

"We are feeling and seeing the impacts of your activities on the ground. We are now looking at the possibility of installing another cooler at a route that serves the Cheptiret cooling plant because it cannot cope with the volumes delivered now".

Mr. Serem, Eldoret NKCC Manager.

3.3 Component Three: Increase Availability of dairy Business Development Services

The program implementation method focuses on capacity building of providers i.e. switching from assisting micro enterprises directly to ensuring sustainable access to services, via 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.

In the reporting period, the program has been working with **289** service providers. These experts work with and deliver productivity enhancing technologies to specific farmer groups. **The program has since surpassed the target of 150 by end of year two of program implementation. 55 providers – especially AI providers – now supply additional services** (feeds and feeding) to their clientele after attending program facilitated capacity building workshops and seminars.

The trainings have focused primarily on:

- i) Business and enterprise management
- ii) Feed conservation, and
- iii) Refresher courses on areas of expertise among others. The service providers have also been provided with manuals and training modules, and exposed to additional services.

These are the services they may provide as embedded services and may include silage making for Artificial Insemination providers, among others.

The program has also been actively engaged in refocusing farmers' thinking to incorporate additional dairy related engagements. A number of farmers currently provide added services, especially as demonstration farmers. Within each milk shed, there are farmers who are doing exceptionally well with regard to dairy farming. We approached these farms and modeled a number to act as demonstration farms where farmers can go to for exposure tours. These farms now earn additional income from the exposure tours as illustrated below.

i) Facilitation of Farmers Financing

Farmers cite access to credit as one of the major constraints in commercializing dairying and indicated willingness to apply for loans in the SBOs that have been selected. This exercise was initially delayed in order to first determine the financial

institutions that have favorable dairy based loan products. Experiences from other similar programs have shown that financial institutions (FIs) are enthusiastic to provide out agricultural loans without undertaking a detailed assessment on the capacity and repayments modalities for agribusinesses. This has sometimes raised the default rate to farmers being unable to repay the loans which eventually causes the collapse of the farmers' enterprise.

In the reporting period, suitable Financial Institutions were identified and negotiations and partnerships finalized that put in place a tailor-made loan product to farmers –from Equity bank and Cooperative bank. Program data indicate that over **20, 158 (6,853 women) farmers acquired credit in the reporting period surpassing the 18, 000 farmers targeted by end of year 2.** The majority, about 18, 758, received credit in kind – in form of dairy inputs in the reporting period.

ii) Capacity building of program partners/facilitators

Business Development Services approach to program implementation is a relatively new methodology in the country. To enable the selected firms get the method right, the PROGRAM has sponsored six lead facilitators in six milk sheds to two BDS conferences in the country. The program has also actively sought training opportunities and/or workshops/conferences on a variety of areas important for achieving program results, including in value chain financing, for the facilitators. It is hoped that the knowledge acquired by the facilitators will not only help them achieve the program targets but to also build their knowledge base for future engagements in the country and region at large.

Box 3: From humble beginnings to community dairy production advisor

Mr. Ngaru Kironji is a 40 year old small scale commercial dairy farmer in Central Kenya. After his secondary education, he attended a course as a Dairy Technician at the Dairy Training Institute for two years (1991-1992). He later attended an AI inseminator's course in 1998. However he did not own any dairy cow. He bought his first dairy cow in 2002 for feeding his family, not for commercial purposes. During the same year, he started offering AI services to dairy farmers. Mr. Ngaru started commercial dairy farming in 2003, following an exchange visit to Limuru organized by the pastor of his local church for community members. The pastor who came from Mukurweini was sensitizing the community on dairy farming as a business and to demonstrate its viability, he bought 4 cows and built a zero grazing unit at the local church compound where he was housed. Members of the community would buy milk from the pastor. At the time, the biggest challenge facing the community in dairy farming was lack of organized marketing for the milk. Farmers used to sell their milk at the local shopping centre and sometimes there were no buyers.

During the exchange visit organized by the pastor, farmers were taken to two farms in Limuru and to Limuru Dairy which was buying milk from the local farmers. The group was challenged by what Limuru Dairy was doing for farmers and they wanted to replicate the same in their community. Following the visit, Mr. Ngaru started implementing what he had learnt. The first thing he did was to improve on feeding of his dairy cow which led to an increase in milk production from 8 to 12 litres per day.

By 2006, the dairy herd had grown quite big and he was able to contract Farm Feeds manufacturers to directly supply him with 22 bags of animal feed per month. At the time, Mr. Ngaru lived on his father's one acre farm where his father and brothers were also living and space became a big constraint as his dairy herd grew bigger. To address the problem of space, Mr. Ngaru approached Equity bank in 2006 for financing to buy 2.5 acres of land that was being sold at Ksh 500,000. The owner of the land was asking for a deposit of Ksh 150,000 which was approved based on the cash flow from milk sales which was reflected in account at the bank. After servicing the loan for 3 months he was advised to apply for a top up loan of Ksh 350,000 to pay the balance. The loan would be secured by the land to be purchased. The owner of the land was given a bank guarantee and the land was transferred to him while a charge in favor of the bank was registered. He got an additional Ksh 95,000 loan from Equity Bank to construct zero grazing units in the new farm site.

The dairy enterprise has continued to grow since then. To complement income from the dairy, the farmer started an agro vet shop using money from sale of his dairy cows. Currently he is selling 112 litres of milk per day. He sells 76 litres per day to Kirere Dairy services at a price of ksh 24 per litre while he sells 33 litres at his shop at a price of Ksh 33 per litre. Thus he is earning more than Ksh 80,000 per month from his dairy enterprise. From his participation in stakeholder forums organized by PROGRAM Gatanga milk shed, the farmer has learnt more about feed conservation and silage making. He has decided to adopt the technology to ensure his has feeds for his dairy cows through out the year. He has been linked to one of the service providers in silage making and to date he has made 12 tons of silage.

The program identified Mr Ngaru as a farmer who most farmers can associate with in Gatanga milk shed. The program therefore approached him to act as a demonstration farm for other farmers in the shed. Currently, he charges Kshs. 300 per farmer per visit. In the reporting year the program facilitated 250 farmers to visit his farm, earning him Kshs 75, 000 in additional income. Mr Ngaru says he is ready to share his "secret of success - hard work and taking risks - with anyone willing to listen". "I think the program has come in at the right time" he concludes. Farmers also appreciate having a local based advanced farmer from whom they can call on anytime for advice.

3.4 Challenges

A number of challenges were experienced in the reporting period of the last year. A sample includes:

Drought

Drought has been a major problem in the reporting period. The resulting lack of fodder – to feed and ensile – has resulted in reduced productivity (yield) and increased cost of production.

Post Election Violence

The industry is still adjusting from the impacts of Post Election Violence (PEV). The PEV impacts - high cost of production was mentioned as the predominant consequence of the PEV in the program baseline survey – significantly exacerbated the effects of drought in the year. The two combined impacted yield and may have caused the significantly lower yields as compared to the Kenya Dairy Development Program’s (KDDP) final yield levels and the baseline value especially in the Rift Valley Province.

Implementation approach

The Business Development Approach of implementation is still relatively new approach of implementing development programs. The approach also requires a long time for set up and hence the delay of start of implementation. We are now on ground and aim to meet and surpass the set targets going forward.

Expected Direct Financial assistance by beneficiaries

Response from target groups was rather slow during the initial part of the period under review. Farmers, SBOs and BSPs expected direct financial assistance from the program largely because the BDS approach is fairly new as a development strategy. This flawed expectation slowed the recruitment of the target groups. Several meetings were held to level expectations and raise the interest of the target groups in the program. These meetings had good results and enabled the program finalize the recruitment process of SBOs, and BSPs.

Farmers’ suspicion/apathy to farmer groups

Owing to past problems associated with farmer groups – problems occasioned with the collapse of the Kenya Cooperative Creameries, farmers, especially in the Rift Valley province prefer to deal directly with dairy processors. Most groups therefore have very few members. We have however put a lot of effort in mobilizing members to increase volumes traded by the farmer groups working with the program. Membership is still low however.

4.0 Performance Data Table

Impacts					
Performance Indicator	Baseline Value	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Household level impacts					
% change in smallholder household income (%)	Kshs. 2,043	25%	28.23%	28.23%	Current estimates indicate that farmer incomes from the sale of milk have increased to Kshs. 2620 on average. Men however gained significantly more (80.3%) compared to women (9.5%) and youth (44.9%).
Number of rural households benefiting	0	110,000	80,119	102,656	These are households reached through program facilitated events including: action planning workshops, field days, exposure tours, farm demonstrations, service provider trainings, among other program facilitated events.
Sub-Sector Level Impacts					
Total volume of milk purchased from smallholder dairy farmers (MT)	93,170.35	113,170.35	91,306.94	91,306.94	A slight reduction in volumes bought from smallholder farmers was observed. This is likely due to drought. Value has however gone up due to increased demand i.e. price.
Total value of milk purchased from smallholder dairy farmers (US Dollar)	16,38M	21.38 M	26.4M	26.4M	
Total value of exports to regional and international markets (US	14.32 M	9.95 M	14.38M		We intend to use trade year book in our subsequent reporting to give a breakdown by destination (regional and

Impacts					
Performance Indicator	Baseline Value	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Dollar)					international).
% change in volume of milk conforming to quality standards increased	96.25%	30%	98%	98%	Currently, only 2% of milk is rejected due to of poor quality at the SBOs working with the program on average. About 98% purportedly confirms to the set quality standards. This could be attributed to drought and hence processors do not have the luxury to reject milk.
Total value of milk conforming to quality standards increased (US Dollar)	96.25%	30%	98%	98%	
% change in volume of milk and dairy products sold by processors	392,336 MT	6%	2%	2%	400,323 MT was processed in the year. However small, this presents a positive picture in terms of formal milk marketing (cold chain) and therefore improved quality of milk.
% change in value of milk/ dairy products sold by processors (Percent)	119.6M US\$	6%	2%	2%	
Number of jobs created in the value chain	0	13,000	5772	5772	306 new permanent jobs have been created in the SBOs and service provider firms' working with the program. Over 5466 full time equivalent hired labor on farm jobs were reported in the reporting period.
Firm Level Impacts					
Number of producers accessing/ receiving/ utilizing BDS services, inputs, technologies, and	0	80,000	79,830	79,830	Program has linked all farmer groups with service providers in the 8 milk sheds.

Impacts					
Performance Indicator	Baseline Value	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
management practices					
Number of farmers using improved technology	0	65,000	47,100	47,100	These are farmers using Artificial insemination in this year.
Change in annual productivity (Liters)	6.5	12	6.31	6.31	The ongoing draught has seriously impacted the industry leading to reduced productivity.
% change in gross margin per litre of milk	Kshs. 5.80	16%	22.4%	22.4%	Low supply of milk in the country has led to increased farm level prices. On average, farmers receive about 23.10/= per liter currently, compared to about 20/= observed during the baseline survey
% Reduction in cost of production	Kshs.14.20	-7%	22%	22%	Drought has wiped out any gains that would have been realized. The program however contributed a great deal towards minimizing cost increases by promoting other cheaper feed alternatives – crop residue treatment by molasses and molaplast, use of pineapple residues, among others.

Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
Number of industry policies and acts improved and enacted	0	1	19	19	Considerable progress has been realized:
Number of Quality certification frameworks (Milk product, Animal feeds) developed, implemented/enforced	0	1	1	2	<p>The Good Manufacturing Practices (GMP) document has been reviewed, edited and approved by the KEBS dairy technical committee. The document now has official KEBS recognition and has started the process of public review and when this process is completed, will be issued as an official KEBS Standard.</p> <p>Trained 38 KDB Regulatory Inspectors on Pasteurized Milk Ordinance and regulatory inspection</p> <p>Recruited a contractor to conduct the GMP training for between 1200-2000 dairy industry operators. The program aims to have KDB make adoption and implementation of GMP a business licensing requirement.</p>

Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
					Facilitated the development of a reader friendly version of the Kenya Standard Code of Hygiene for the Dairy Industry. The exercise will produce a 'user-friendly' version of the document, which as is, is very technical and not reader friendly, especially to the people working in the processing plants and the milk collection/bulking centers.
Number of dairy enterprises achieving national/international certifications and enforcing quality regulations on suppliers	MBC: 0 Processor: 0 Vendor: 0	22 5 TBD	0 0 0	0* 0* 0*	A GMP training will be conducted in the next year that targets to train between 1200-2000 industry players. Once this is finalized, we aim to make compliance a licensing requirement by the KDB.
% change in volume of feed marketed under new quality standards	0	20%	0	0*	Through the DTF, the feed and livestock feed policy review is at an advanced stage. A dairy related program (Smallholder Dairy Commercialization Program) is funding the final stages of the process.
% change in value of feed marketed under new quality standards	0	22%	0	0*	

Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
Total Value of non-project resources leveraged (US \$)	\$0m	\$10m	\$3.4M	\$3.4 M	This has mainly been leveraged through the Dairy Task Force, with a small (but significant) proportion coming from farmers.
% change in revenue collected by KDB and KEBS	US\$ 980,842	20%	2%	2%*	Total revenue reported was US\$ 1,000,006. The slight increment has mainly been attributed to a severe drought that has affected the country.
Number of new technologies or management practices under research as a result of program assistance	0	15	8	8*	These include: 6 Lucerne varieties; 1 fodder sorghum; and one variety of dual maize – for both grain and forage. The program is collaborating with KARI on this.
Component 2 - Dairy Smallholder Business Organization (SBO) Development					
Number of producer organizations strengthened	0	50	63	63	The program is working with 63 SBOs in the eight milk sheds. All the SBOs and 3 sector wide organizations were capacity built in the reporting period.
Number of SBOs/MBCs with HACCP and/or national certification	0	22	0	0	GMP training is planned for the next quarter that targets to train all the SBOs working with the program. Once this is finalized, we aim to make compliance a

Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
					licensing requirement by the KDB.
% change in volume of raw milk sold by SBOs under agreements that pay premiums for quality	0	10%	0	0*	The program has submitted a discussion paper on differential graded payment for raw quality milk to industry stakeholders for discussion and possible adoption. If this adopted, then all milk passing through the formal chain will be paid for based on quality.
% change in value of raw milk sold by SBOs under agreements that pay premiums for quality	0	10%	0	0*	
% change in gross revenue of SBO/MBCs from sale of inputs and services other than milk cooling (US \$)	US \$ 715,209	22%	13%	13%	Program activities have also focused on embedded service provision where farmers pay on a check off system from their dues at the end of the month.
Number of SBO/MBCs transformed into sustainable business entities	0	25	62	62	Only one farmer group engaged with the program has so far reported a negative profit and loss account. All other 62 are operating profitably.
Number of cooling units installed/rehabilitated in SBO/MBCs (Number)	0	15	5	5	Brookside dairy has installed a 10,000 liter cooler; New KCC has installed 2 in Muranga, and Nyeri. 2 coolers have been rehabilitated in Tongaren and Naitiri.
Component 3 - Availability of Dairy Business Development Services					

Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
Number of firms providing new business services to producers (Number)	0	150	289	289	Program activities have focused on embedded service provision to increase the revenues for the providers. All providers are trained on feeds & feeding and feed conservation.
% change in value of Services/inputs provided by BSP (US Dollar)	US\$ 32,026.70	10%	-5%	-5%	This decrease is likely due to the draught. Overall, service providers have reported a decrease in business volumes as a result in drought.
Number of smallholders purchasing private sector services at full commercial rates	0	44,000	47,100		These are farmers who purchased inputs during the year from the service providers working with the program.
Number of new technologies or management practices made available for transfer	0	15	18	18	Include milk quality systems – component analyzer, tit dips, porta check, mastis kits (3); new breed (distributed by fleckvieh East africa); ICT – data capture systems; new feeds – silage, hay, mola plus; fodder-Lucerne, ; Grasses- oats, Rhodes; microbes;
Number of producers receiving loans from financial service providers	0	18,000	20,158	20,158	Financial service providers currently working with the program include Faulu Kenya, Equity; Co operative bank; Family

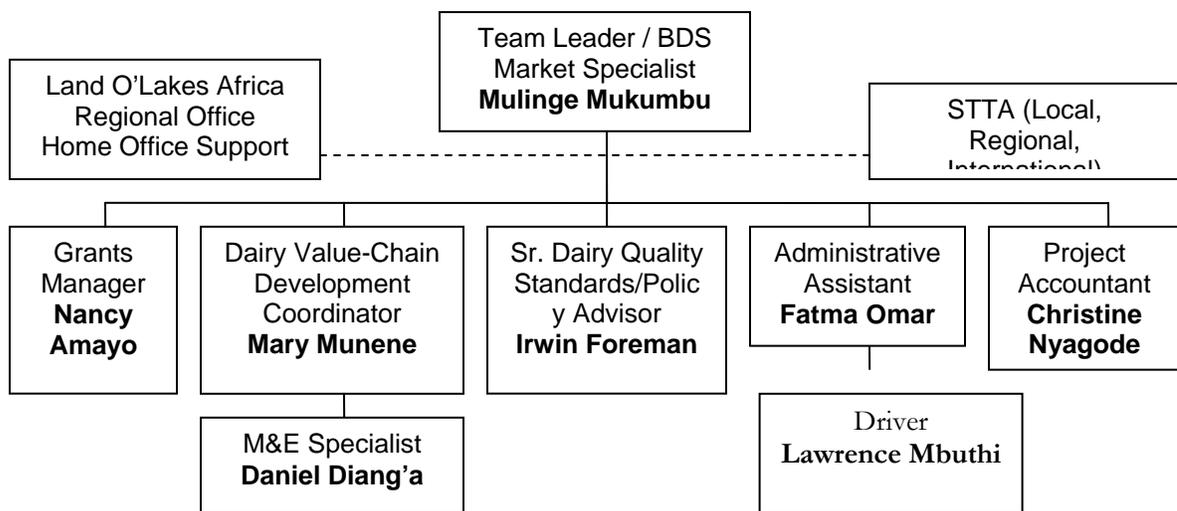
Outcomes					
Performance Indicator	Baseline Value (2008)	Year 2		Status/ Cumulative Realized	Comments
		Target	Actual	Actual	
Component 1 - Enhance Capacity for Milk and Production Input Quality Certification and Market Promotion					
					finance; Unity bank; and local farmer SACCOs and cooperatives.
% change in value of loans received from financial service providers	150,000	10%	38%	38%	Farmers especially from the milk sheds close to Nairobi have aggressively taken up this opportunity.
Number of smallholders engaged in new, diversified dairy-related enterprises	0	12,600	1,400	1,400	The program focused on sensitizing farmers to provide additional services – including selling forage, becoming demonstration farmers, among others. This however did not seriously pick up in the reporting period. We expect to meet and surpass this target by end of year two of program implementation.
Number of producers receiving short-term training	0	54,000	24,736	24,736	In the reporting period, 1300 farmers attended an international breeder's show.

The observed variances can be explained by the fact that the program has just begun the second year of implementation (from May 2009) and many are also affected by the severe drought. The first year was mainly spent on ground working, (sector assessment studies) and roll out. The program aims to achieve and surpass the set targets by end of Year 2 of implementation – end of May 2010.

5.0 Administration and Program Management

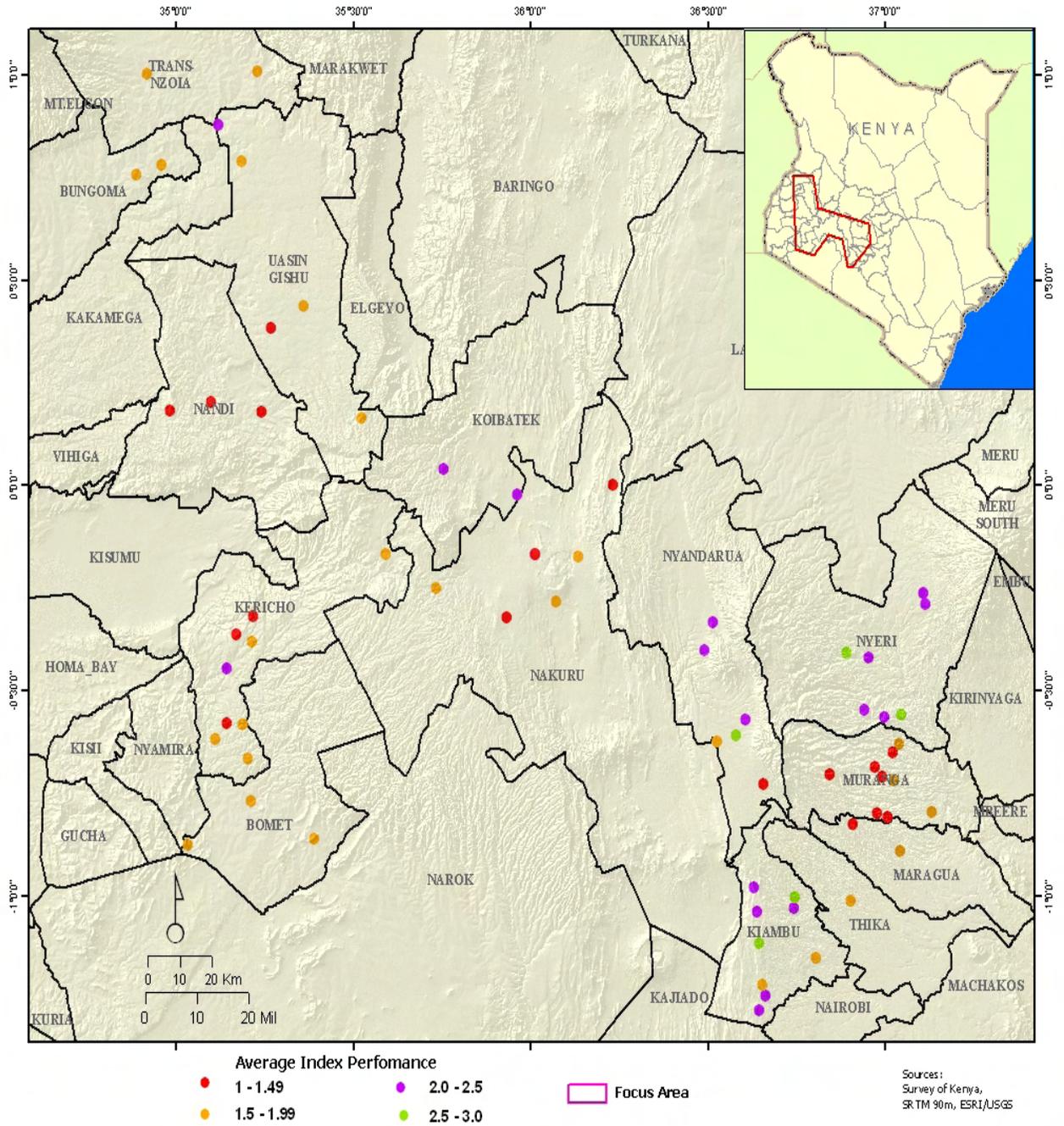
The program has a dedicated team that provides strong policy, standards, industry competitiveness, and BDS experience with the Kenyan dairy industry. With the leadership of Mr. Mulinge Mukumbu, Team Leader, our personnel have the proven ability to forge collaborative relationships with host country counterparts and to build effective private-public sector partnerships and market and business linkages throughout the sector. Below, is the program staffing.

Kenya Dairy Sector Competitiveness Program Organizational Chart



6.0 Annexes

Annex 1: Mapping of Kenya Dairy Sector Competitiveness farmer groups and their capacity indices



Annex 2: Success stories

From casual employee to employer: How the dairy industry is creating livelihood opportunities and improving wellbeing in Kangema

To one Mr. John Maina, life has changed so much in the last few months that it is almost a dream to him and family. Married with four children, Mr. Maina trained at Murang'a Technical college in carpentry and joinery and got his first job as a casual employee selling motor vehicle spares in Nairobi. His job did not provide enough for him and family to enable subsistence in the city. He then moved to Kangema where he started dairy farming - in partnership with a friend - with only one cow, and continued selling motor vehicle spares on the side. "Before I started dairy farming, I had to convince my partner that the cow would get enough feeds. I came here and prepared 5 bags of silage before my partner agreed to release the cow to me" he says. This he was able to do using the silage preparation manuals prepared by Land O' Lakes. "That marked the turning point in my life" says Mr. Maina. Today Mr. Maina is an employer of 5 people, including his wife who has now "graduated" from being a housewife to a business woman. He has also ditched selling spares for dairy products. He pays his employees Kshs. 200 per day.

"Dairy farmers neighboring my farm used to come to see whether a cow can feed on silage. On ascertaining that this is true, they then would ask whether I can help them make silage. This is when I first had the idea of becoming a service provider on feed conservation. Around this time, I heard of a development program that was just starting in the area and was educating both dairy farmers and service providers on animal husbandry, feed conservation, among other skills. I registered with the program and have attended a number of capacity building forums with them. The program staff also introduced me to more farmers, especially when conducting field days. I also got technical knowhow on feed mixing and business skills training. After this exposure and linkages with farmers, farmers started asking me where they can buy silage bags, molasses and other ingredients of making silage. It was then that program staff advised me to open a small shop where farmers could find me." Today, three months later, Mr. Maina stocks dairy meal, minerals, and also sells silage in his shop. An interesting twist is his focus on chaff cutters. With his background partly on machines, he currently repairs and also modifies chuff cutters and sells to dairy farmers and even to other service providers in the town.

Mr. Maina says that the training facilitated by the program has given him a better focus in business. He appreciates the alphabet of business skills which has opened his eyes to see things differently and run his business in a unique manner. "I was advised to focus on a unique business. That is what convinced me to start selling dairy products." He feels more confident about the future since the Program has made many farmers to focus on dairy enterprise more thus increasing demand for his services more. Today, Mr Maina has chosen to put his time and effort in developing the chuff cutter business while his wife assists him in the shop where he is selling concentrates and minerals, among other dairy products. His other four

employees are in high demand in the area. He proudly says that he has sold 25 chuff cutters and made Kshs. 900,000 (sell at Kshs. 36,000 per chuff cutter) in the three months he has been operating.

Mr. Maina started his animal feeds shop after attending the stakeholder forums organized by the program. Before that he used to operate from his home where people who wanted to make silage would contact him. He has now positioned his shop strategically near a milk bulking centre to target farmers delivering milk to Mr. Maina Njire's milk processing plant as they have a good business relationship with him. Though he started with a stock of about Ksh 24,000 he now has a stock of approximately Ksh 300,000 which he believes will double in a few years to come with the knowledge he has gained. He says he earns about Kshs. 40,000 per month. Mr Maina now says wants to go green and utilize cow dung for the domestic use. He believes he will be in a position to use the gas even to operate his chuff cutter as he aims at having 10 mature dairy cows in two years to come. Currently he has 2 mature dairy cows, one heifer and one bull.

His business has grown tremendously since his services and products that are now in higher demand than before - molasses, and good quality paper for silage making. He has also started making silage for sale to farmers. He is selling 10kg of silage at Kshs. 50 and farmers buy. He is invited by such farmers who test whether their cows will feed on it. To date he has sold 1,400kg of Silage to farmers thus earning a total of Kshs. 70,000 from silage alone in the last three months. He also made silage for his cows to last him up to January 2010.

He says that after interacting with the program during the field days and training, he has realized that dairy enterprise can support and sustain his family if his dairy animals are well managed. He says he will be able to educate his daughter at Alliance Girls High School and a son at Kerugoya Boys High School without having to borrow school fees like in the past.



Mr. Maina next to one chuff cutter that is almost ready for sale in his shop.



Mr. Maina and his wife and last born outside his shop. He says his son now has a bright future.

ii) Enhancing livelihoods through dairy farming: How one woman is changing her community

Rift Valley Province has always been the bread basket of Kenya. This could apply to the dairy industry perhaps more than it does with other staple foods. Not so long ago when Kenya Cooperative Creameries (KCC) was the dominant processor in the country, the region contributed up to 65% of all milk produced in the country. With the collapse of the giant processor in the mid 1990s, farmers found themselves with no guaranteed market outlet. This was the start of the down turn of the industry in the province. From being the most developed in the country - with the best herd genetics and herd productivity- farmers had neglected their dairy animals. Instead of using Artificial Insemination (AI) to improve herd genetics and productivity, a large proportion of farmers use bulls, while fodder establishment and feed conservation have not been given due attention. It is common to see dairy cows grazing on the roadside. This was Mrs. Esther Koskei's situation, a farmer currently with Mosoriot Dairy farmers Cooperative Society before the Kenya Dairy Sector Competitiveness program began operations in Lessos Milk shed.

Mrs. Koskei currently has 4 lactating cows, three calves and two heifers. She is however has a big portion of land on which she mainly grows maize. In her own words, she lacked information about feed conservation, fodder establishment and was selling milk individually to the New KCC after pulling out of a bulking group because of corruption by group officials. She was being paid 21 shillings per kilogram of milk. "This was not even adequate to pay for AI services sometimes" she says. Indeed she has a calf that was sired by a local bull in the month (September, 2009). I did not give dairy a lot of attention because of the problems we have had before the program. This changed for her when she attended a field day facilitated by the program early 2009, where an analysis of earnings and other benefits from the dairy and maize were compared.

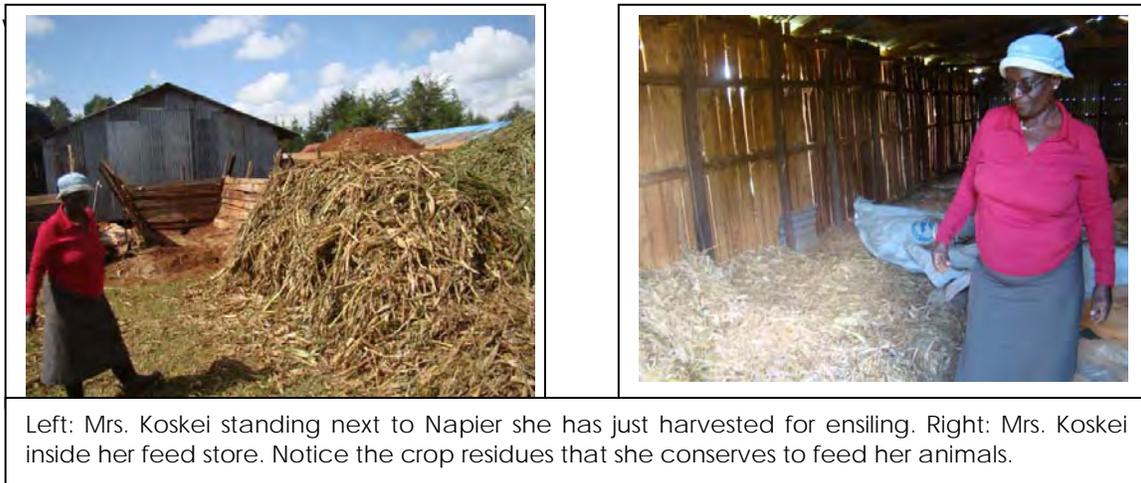
Through the program facilitated training on productivity enhancing dairy husbandry practices covering, feed conservation, feeding, disease management, cow evaluation and breeding, management of in calf cows, among other topics, Mrs. Koskei has learnt a lot but most importantly, adopted the program promoted improved husbandry practices. "The program has done a lot for me. I now sell my milk through our group (Mosoriot Dairy farmers Cooperative Society) and get paid 24 shillings per kilogram after deductions. This we have managed to achieve with the help of the Program, facilitated negotiate the price with New KCC" she says. In addition, Mrs. Koskei has planted 2 acres of maize for silage making, planted 1½ acres of Boma Rhodes, planted and ½ acre of sweet potatoes We caught up with her while making silage from 1 acre of Napier grass she planted after attending a demonstration on silage making organized by the Program.

To ensure farmers like Mrs. Koskei have access to productivity enhancing animal husbandry technologies, including Artificial Insemination, the program has linked two (2) service providers to the group. The service providers have received training on business management and embedded service provision. They have reported considerable growth in business volumes. The program is in addition training the

group leaders on good management practices to ensure they do not repeat the mistakes of the former leaders.

“I now do not complain of lack of money to pay for AI services anymore” she says. “The service provider attached to our group can serve my cow and get paid by our group at the end of the month. Most important is the resultant raise in income. I am now able to feed my family. My kids go to school with full stomachs, and are healthy. With the technologies the program is promoting, I am sure I will attain 15 liters per cow per day before end of this year.” She now does an average of 7 liters per cow from her 4 cows. She is now exploring the possibility of installing a biogas digester in her farm.

Being the group vice chairperson (in a community where leadership was a preserve of men is attributable to gender sensitization by the program), she has volunteered to have her dairy farm designated as a demonstration farm so that other farmers can learn from her. “I believe I will be giving something back to society, just as some people have done”.



Annex 3: List of Beneficiaries

Kenya Dairy Board (KDB): Is the key public agency that both regulates and promotes the dairy industry. The main functions of KDB are the enforcement of national standards for the dairy industry, training for the industry, facilitation of stakeholders' activities, maintenance of a databank for the industry, and regulation of imports.

The KDB has perhaps been the most active Dairy Task Force (DTF) member, and has received a number of sub awards to carry out a number of activities on behalf of the task force. Some of the activities are:

- Organizing out the peace field days on behalf of the DTF. They organized four field days in the reporting period
- The Board is engaged in writing and/or reviewing the industry codes of practice, including the food safety manual, milk ordinance, dairy code of practice, among others

Kenya Bureau of Standards (KEBS): Is a Government of Kenya (GoK) agency that has a major role in the regulation of the dairy industry as the statutory body charged with the enforcement of standards and certification of quality standards of all products and services in the country. The agency is actively engaged in the development of industry standards, specifically the Good Manufacturing Practices (GMP) with other DTF members. The KEBS will be actively engaged in the November working retreat and is expected to play a major role in the writing of the six quality standards targeted for completion.

Kenya Dairy Producers Organization (KENDAPO): KENDAPO is a national association of dairy producers who have an interest in the development and promotion of the dairy sector, and was formally registered in 2007.

Kenya Livestock Breeders Organization (KLBO): The KLBO is an Independent organization formed under the auspices of the Agricultural Society of Kenya (ASK). It is responsible for the collection, analysis and maintenance of livestock pedigree and performance data and its subsequent certification. The organization provides two services: Livestock registration with accurate and authentic ancestral and identification information of animals (including date of births and pedigree details); and Dairy recording services, which details dairy milk yields and milk quality analysis. These services are essential if sector competitiveness is to be achieved. The KLBO has benefited from support from a number of development partners, which has led to the development of a strategic plan and modernization of its data systems. However, use of these services is still very low, with a program survey showing that majority of dairy farmers (over 50%) do not know what KLBO does.

Kenya Livestock Producers Association (KLPA): The KLPA is an apex organization that provides a voice for small-scale livestock producers at the policy making level. The organization's mission is to ensure improved livelihood of livestock

producers through formulation of appropriate policy, stimulating reforms, promotion of good livestock husbandry practices, collecting and disseminating information, and promotion of general interest of its members.

Smallholder Business Organizations (SBOs): The program carried out a capacity assessment and action planning for 77 groups in the 8 milksheds. The program has however been working closely with 63 of the 77 with the possibility of extending coverage to all the 77 in the next Financial Year. The program has also been reaching these other groups through field days. The complete list, together with membership is attached (Annex 4).

Dairy Task Force: The DTF operates like the program and sector advisory committee, and is composed of all industry stakeholders. The program only addresses issues (review of legislation, etc) that have been prioritized by the Dairy Task Force as meriting review due to their importance to the sector and/or the export market. The DTF, through the Dairy Technical Committee of the Kenya Bureau of Standards must submit a letter of request for support before the program initiates any such review. See list of composition in Annex 5.

Central Artificial Insemination Station (CAIS): CAIS is a national institution responsible for the following among other duties: Recruitment and rearing of bulls for semen production; Production and distribution of superior quality disease free semen; Availing A.I equipment to customers at cost; Rendering specialized services to customers such as own-farm semen collection and collection of samples for testing of reproductive diseases; Collaboration with other institutions in training and research on semen production and handling; Marketing and distribution of semen, Liquid Nitrogen and equipments to A.I. Service providers.

Dairy processors: Have been actively engaged with national processors in program implementation. The nature of our engagement has been through organizing farmers to help reduce cost of operations – mainly transport costs – for optimal resource - time and money - use. A number of these processors are Dairy Task Force members.

Service Providers: The program is currently working with a total of 289 private service providers. These are providers who have signed a Memorandum of Understanding (MoU) with us and have linked to the farmer groups working with the program. A sample of the benefits accruing to a number of providers in Kinangop Milk shed is appended (Annex 6).

Annex 4: Kenya Dairy Sector Competitiveness Program Beneficiaries (Smallholder Business Organizations)

	COOPERATIVE	ACTIVE MEMBERS	REGISTERED MEMBERS	Provide credit to members (dairy inputs)	MILKSHED
1	Nderi	1022	1652	No	Kabete
2	Kikuyu	1380	1971	Yes	
3	Gatundu	200	400	No	
4	Limuru	6000	9500	Yes	
5	Kiganjo	3000	4000	No	
6	Sigona	40	100	Yes	
7	Gikambura DFCS	127	347	Yes	
8	Hexagon SHG	230	27	No	
9	Dairymen Sacco	400	700	Yes	Kinangop
10	Wanjohi FCS	470	622	Yes	
11	Tulaga FCS	2800	3000	Yes	
12	Gatamaiyu FCS	2900	3752	Yes	
13	Nyambini FCS	260	520	Yes	
14	Miharati FCS	1350	1700	Yes	
15	Lari DFCS	250	580	Yes	
16	Kiriita FCS	3050	5984	Yes	
17	Kitiri FCS	450	650	Yes	
18	Kamahia FCS	1970	2790	Yes	Gatanga
19	Boyo DFCS	1070	6280	Yes	
20	Gika FCS	1056	1500	No	
21	New Nginda DSHG	800	1200	Yes	
22	Kirere Dairy farmers	1500	1500	No	
23	Wanjeye DSHG	400	700	Yes	
24	Ichichi DSHG	800	1790	Yes	
25	Sakuma DSHG	980	1400	Yes	
26	Thakumi DSHG	550	800	No	
27	Mugi Elite Dairy	147	170	No	
28	Kangundu-ini farmers	18	41	Yes	
29	Gaturi Kamacharia FCS	600	7000	Yes	
30	Magomano DFCS	250	600	No	
31	Ilanda FCS	313	900	Yes	

32	Ngukurani FCS	256	663	No	Nyeri
33	Gakindu DFCS	500	6202	Yes	
34	Mathira SHG	4000	4000	No	
35	Othaya DCS	2000	10280	Yes	
36	Ihururu DFCS	1200	3584	Yes	
37	Mukurwe-ini Wakullima DCS	9000	14000	Yes	
38	Tetu DCS	8090	9326	No	
39	Ainabkoi FCS	616	616	No	Lessos
40	Emgwen FCS	15	1028	No	
41	Kamno FCS	143	400	No	
42	Kipchamo Farmers Group	800	800	No	
43	Lelwak Farmer Group	200	800	No	
44	Kipsamo Farmers Group	2000	2000	No	
45	Tarakwa FCS	57	240	No	
46	Seum FCS	40	61	No	Transzoia
47	Naitiri Dairy development project	120	400	No	
48	Tongaren CBO	400	572	No	
49	Naumini CBO	55	55	No	
50	Moi's bridge Dairy	6000	6000	No	
51	Serungai DFSHG	32	32	No	
52	Meebot SHG	46	46	No	
53	Sabatia FCS	2400	2400	Yes	Nakuru
54	Mogotio FCS	400	1115	No	
55	Ngorika dairy investment co ltd	390	600	Yes	
56	Mutungati FCS	370	392	No	
57	Molo FCS	100	650	No	
58	Kiplombe FCS	978	1154	Yes	
59	Suka FCS	360	500	No	
60	Njoro FCS	202	268	No	Kericho
61	Kiptoim FCS	300	800	Yes	
62	Tulwobmoi FCS	40	50	Yes	
63	Sotik DFCS	162	1002	No	
64	Tenwek FCS	287	4067	Yes	
65	Ketengeret FCS	176	840	Yes	
66	Sosiot FCS	50	200	No	
67	Mutarakwa Farmers	20	20	Yes	
68	Kabianga FCS	176	840	Yes	Kericho
69	Kipagenge FCS	200	3164	No	
70	Longisa FCS	53	114	Yes	

71	Mogogosiek Dairy Farmers Group	24	39	Yes
72	Chemosu Dairies	28	28	Yes
73	Chesilyot SHG	32	32	No
74	Gelegele FCS	66	147	Yes
75	Mosop FCS	1500	2700	No
76	Londiani FCS	63	80	No
77	Cheborgei FCS	1500	3000	No
Total		79,830	147,483	

Annex 5: Members of the Dairy Task Force

No	Name	Organization	Telephone	E-mail
1	Machira Gichohi - Chairing	KDB	0722-700717	pgichohi@kdb.co.ke
2	Mulinge Mukumbu	L'O'L	0722-703602	mulinge@landolakes.co.ke
3	J. P. Cheruiyot	MOLD	0733-924492	pmedivision@yahoo.com
4	Valentine Miheso	Technoserve Inc	0722-527552	vmiheso@tus.org
5	Muhika Mutahi	KENDAPO	0722-901814	dmutahi@yahoo.com
6	Musyoka Duncan	KLBO	0723-379048	musyokambai@yahoo.com
7	Nathaniel Makoni	ABSTCM Ltd	0722-700355	abstcm@iconnect.co.ke , nmakoni@yahoo.com
8	Alex Kirui	HPI Ltd	0721-664611	Alex.kirui@heiferkenya.org
9	John Gethi	Brookside Dairy	0722130000	johng@brookside.co.ke
10	Dr. Murekefu, WK	MOLD(DVS)	0722-895983	wkmurekefu@yahoo.com
11	Simon Kimenju	Tegemeo Ins.	0722-425707	skimenju@tegemeo.org
12	Judy Kithinji	SITE	0720-832437	Judith-kithinji@sitenet.org
13	Dr. Josh Odhiambo	World Wide Sires EA Ltd	0722-452173	josh@wwsiresed.co.ke , owiajoss@yahoo.com
14	Boniface Mburu	Consultant	0733-223558	bonifacemburu@yahoo.com
15	P. K. Cheron	KDB	0725-700962	pcherono@kdb.co.ke
16	Dr. Kipkirui Arap Langat	ESADA	0727-305069	klangat@dairyafrika.com
17	Lawrence Were	New KCC	0727-200278	werelawre@yahoo.com
18	Dr. Wamukuru H. K.	CAIS	0722-370231	cais@africaonline.co.ke
19	S Murimi –Taking minutes	KDB	0722-901345	smurimi@kdb.co.ke
20	General Manager Spinknit Dairy	Spin knit		
21	Plant manger Githunguri Dairy	Githunguri Dairy		
22	Cooper (K) L	Cooper (K) L		

Annex 6: Benefits accruing to program service providers after capacity building

Dr.Mungai-a vet based in Jabini Town.Tel.0722793495.

- Trained on Business Management by the program.
- Represents BSPs in the Milk-shed working group.
- Trained on Cattle linear classification.
- Stocklist of agro-vet products.
- Distributes CAIS semen in the area.
- Works with 12 A.I and Animal Health Service providers.
- Through the program he has introduced a computer based A.I. mating programme for his Customers (Service Providers) to tackle in-breeding.
- His customer-base has increased from 4 service providers to 12.
- He and his service men cover farmers who mainly sell milk to both Tulaga and Dairy-men Sacco.

Muchiri Joseph-an A.H.A /A.I. Service provider based in Kamburu.Lari district.Tel.0721718963.

- Trained on Cow fertility by the program.
- Trained on cattle feeding by the program.
- Trained on udder health by the program.
- Has been made a trainer of farmer dairy learning groups in his catchment area.
- His customer base has increased.
- Was doing less than 50 inseminations per month but now he is doing an average of 80.
- Is affiliated to Kamahia Dairy co-op.

Maina Muugi-an A.H.A/A.I. Service Provider based in Engineer.Tel.0725688666.

- Started in 2003
- Trained on Cow fertility by the program.
- Trained on fodders establishment and conservation.
- Trained on udder health by the program.
- Has been made a trainer of farmer dairy learning groups in his catchment area.
- Has been assisted by the project to develop a contract with Kitiri Dairy co-op to offer A.I. Services.
- He serves about 150 farmers both animal health and A.I.
- By Dec 2008 he was doing an average of 12 inseminations but currently he is doing an average of 45 monthly.

Njeri -Wakulima Agrovvet based in Wanjohi town: Animal Health Asistant.Tel.0724650657.

- Runs an agro-vet shop.
- Has no A.I.
- Has been trained by the program on Fodder establishment and conservation.
- Her sales have increased from Kshs. 200,000 when we started to an average of 350,000 monthly out of which livestock related sales account for more than 50%.
- The project has facilitated a joint farmer's field day between her and Wanjohi Dairy co-op.
- She has signed a contract to supply the society members with farm in-puts on credit basis.

-She started with an average of Kshs. 6000 monthly to the current 18,000 per month.

-Plans are underway to train her staff on customer care to build their capacity.

Stanley Kuria .based in Matundura in Nyandarua South: Animal Health Assistant and A.I/ Tel.070720952260.

-Started in 2007.

-Has been trained by the project on cattle feeding, cow fertility and udder health.

-Runs an agro-vet inside Dairy men coop.

-Have a contract with dairymen coop to supply drugs, minerals and A.I Services on credit to their members who are delivering milk.

-Started with about 18 inseminations per month, now the current average is 80.

-He has also risen from attending an average of 60 clinical cases to 100 per month by extending his area of coverage and being the preferred service provider.

Annex 7: Reports prepared during the year

A number of assessments were conducted in the year. Some of the assessments include:

1. Business Development Services (BDS) Diagnostic surveys 1 and 2
2. Small holder Business Organizations Capacity and Performance Assessments 1 and 2
3. Good Manufacturing Practices Manual
4. Dairy Institutions/Organizations capacity Assessment, among others

Reports of the finalized assessments can be accessed at:
<http://www.kdairyscp.co.ke/publications.asp?DocumentTypeID=1&formpost=1> .

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