	Rwanda Dairy Competitiveness Program II	

RWANDA DAIRY COMPETITIVENESS PROGRAM II

Quarterly Report

January 1– March 31, 2014

CA# USAID-696-A-12-00002

Submitted to

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RWANDA DAIRY COMPETITIVENESS PROGRAM II

CA# USAID-696-A-12-00002

QUARTERLY REPORT

January 1, 2014 – March 31, 2014

Name of Project:	Rwanda Dairy Competitiveness Program II
Regions:	Northern, Southern, Eastern and Kigali Milk Sheds
Dates of project:	January 6, 2012 – January 5, 2017
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Acronyms and Abbreviations

ABS	African Breeders Services, Total Cattle Management Limited
AI	Artificial Insemination
BDS	Business Development Services
COMESA	Common Market for Eastern and Southern Africa
COP	Chief of Party
DCA	Development Credit Authority
DCOP	Deputy Chief of Party
DPPD	Dairy Public Private Dialogue
DSWG	Dairy Sector Working Group
DQAL	Dairy Quality Assessment Laboratory
EADD	East Africa Dairy Development project
EDPRS	Economic Development and Poverty Reduction Strategy
EMMP	Environmental Mitigation and Monitoring Plan
ESADA	East and Southern Africa Dairy Association
IEE	Initial Environmental Examination
INGO	International Non-Governmental Organization
GoR	Government of Rwanda
MCC	Milk Collection Center
MINAGRI	Ministry of Agriculture and Animal Resources
MINECOFIN	Ministry of Economic Planning and Finance
MINEDUC	Ministry of Education
MINICOM	Ministry of Trade and Industry
MINALOC	Ministry of Local Government
MINISANTE	Ministry of Health
MS – DSWG's	Milk Shed – Dairy Sector Working Groups
MSME	Micro, Small and Medium Enterprise
NDS	National Dairy Strategy
PLWHA	People Living with HIV and AIDS
PMP	Performance Management Plan
PSF	Private Sector Federation
PSTA III	Strategic Plan for the Transformation of Agriculture in Rwanda – Phase
RAB	Rwanda Agriculture Board
RALIS	Rwanda Agriculture and Livestock Inspection Services
RARDA	Rwanda Animal Resources Development Authority
RBS	Rwanda Bureau of Standards
RDB	Rwanda Development Board
RDCP II	Rwanda Dairy Competitiveness Program II
RMSA	Rwanda Milk Sellers Association
RNDB	Rwanda National Dairy Board
SOQ	Seal of Quality
SP	Service Providers
TOT	Training of Trainers
UCD	University of California – Davis

Introduction and Highlights

This is the quarterly report for the period January 1, 2014 to March 31, 2014. The Rwanda Dairy Competitiveness Program II (RDCP II) was designed to reduce poverty through expanded marketing of good quality milk that generates income and employment, and improves nutrition of rural households. RDCP II aims to achieve this by linking existing and new smallholder dairy producers to expanding market demand driven by improved quality, reduced transaction costs and increased investment all along the dairy value chain.

As RDCP II approaches the mid point of implementation it is worth noting significant momentum both in term of project performance and visibility. The M&E team carried out a detailed survey during the quarter to specifically look at jobs created and it was observed that this key outcome indicator has shown strong performance with a total of 2,258 jobs created to date. There were numerous articles in the Rwanda press about issues related to milk quality and safety (please see annex). This has served to raise the profile of RDCP II activities on milk quality and has provided an impetus to GoR gazetting the Ministerial Instructions on milk handling which is expected to be completed by June 2014. This major policy achievement provides a solid foundation for the upcoming certification stage of the Seal of Quality program and provides added credibility to this important initiative. Also notable is the level and quality of response of service providers to the RDCP II call for grants. SPs have become more aware of the specific needs of the sector thereby preparing appropriate interventions that are both feasible and sustainable. This is an achievement considering that two years ago the program struggled to enroll SPs.

Highlights for the past quarter ending March 2014 include the following:

Jobs created soar across three major categories

Based on results from a survey conducted this quarter and improved jobs tracking, particularly on-farm jobs, 2,258 full-time equivalent jobs were identified this quarter as being created as a result of the program. Three

Figure 1: The youthful bike rider shown above acquired a job to transport milk in the southern province RDCP II granted Hajji Dairy Enterprise two tricycles to boost its transportation sysment

categories within which jobs are created were found to be trained farmers (the majority are small farmers), farmers supplying relatively large quantity of milk to MCCs (>10 liters/day), and the dairy value players from MCCs to retail outlets. In general, 11% of the first category (small farmers) created jobs while 76% of the second category created jobs. Also in general, job creation is associated with increased milk deliveries to MCCs.

Service providers achieve high cow pregnacy rates

Figure 3: ERAGIC Vet staff shown whilst executing the grant extened to them under RDCP II program with funds from USAID

The AI activities for both ERAGIC and Nyamata Agri-inputs, service providers (SPs) who have been engaged by RDCP II over the last 12 months have either been completed or are near completion. Cumulatively, since RDCP II grant receipt ERAGIC inseminated 1,200 cows across four districts of Nyagatare, Gatsibo, Rwamagana and Kayonza. At pregnancy diagnosis 67% of the cows were pregnant after the first insemination. This is generally above national average for small holder farm systems which stands at just over 45% (RAB, 2011) for first insemination. During this quarter, SPs re-inseminated the cows found not to have conceived at pregnancy diagnosis. This re-insemination will improve the rate of positive results for pregnancy.

Figure 2: RDCP II has continued to support of the country's efforts to improve cattle breed in Rwanda as part of ways to increase milk yields

New Service providers contracted

During this quarter, 11 service providers (SPs) were approved by USAID and subsequently contracted to train 9,350 farmers and will, in the next six months, inseminate a total of 5,347 cows across 16 of the 17 districts of RDCP II operation, exclusively to support the vulnerable farmers under the "One Cow per Poor household program" a Rwandan

Government program, also known as Girinka.

KCB launches new dairy financial product "ZAMUKA MWOROZI"

Kenya Commercial Bank (KCB) Rwanda, one of the banks that have benefited from the RDCP II/INSPIRED financial products development initiative, launched their dairy product, ZAMUKA MWOROZI, on March 27, 2014 at DEREVA Hotel in Rwamagana in the presence of Rwamagana District officials, dairy cooperative representatives and other dairy chain actors including input traders, and partners in dairy development. KCB Rwanda was lauded by speakers at the event as a leading bank which took time to understand the needs of Rwanda's dairy farmers. On their part KCB Rwanda management acknowledged RDCP II support who through INSPIRED technical assistance provided them a unique opportunity to understand specific dairy financing needs and further assisted to develop an appropriate product to its eventual launch. The product ZAMUKA MWOROZI will provide finance to all dairy value chain actors.

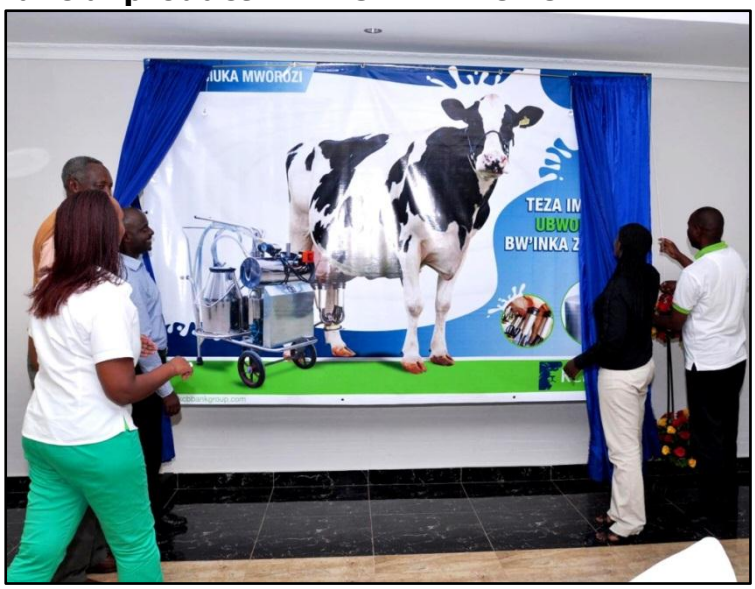


Figure 3: KCB Rwanda officials together with RDCP II and Rwamagana district officials launching dairy financial products

Collaboration with Inyange Industries

During this period, RDCP II continued to link suppliers to Inyange industries (Inyange) to both reward observing quality control measures and also serve the growing demand for milk by Inyange. As at end of March, Inyange received 55,000 liters daily from various suppliers. Inyange expects the demand for raw chilled high quality milk to increase to a total of 80,000liters in the next quarter. This creates further opportunity to link dairy coops to the processor. In addition, the number of Milk Zones increased to 23 operating centers up from 21 in the previous quarter with a plan to increase to 43 by the end of the year.

Figure 4: The recently lunched 'Milk Zones' by Inyange Industries have significantly boosted delivery and consumption of milk

Private Sector Federation (PSF) conducts Rwanda National Dairy Platform (RNDP) grassroot elections

During this quarter, Private Sector Federation (PSF) hosted several value chain actors' meetings in various districts in line with their mandate to facilitate elections of representatives to the Rwanda National Dairy Platform (RNDP). Elections of representatives which commenced during this quarter will be finalized in the next quarter. Value chain actors are excited at the opportunity to participate in the creation of RNDP as an all-inclusive platform. Consistent with this interest, and the PSF-organized forums have been well attended across all milks sheds.

Cheese makers business management training

RDCP II organized and conducted a one day business training session for cheese makers in Musanze. The training focused on the following subjects: business start-up, business planning, as well as record keeping and reporting. The training was attended by 10 cheese makers (6 of them new with the program), who came from Kicukiro, Gicumbi, Musanze, Nyabihu and Rubavu. The training was also attended by one agro-vet and AI services SPs from Musanze.

UC Davis Training on mastitis microbiology and diagnostics

Figure 5: These were part of the country's top dairy sector technicians undergoing a high level training conducted by UC Davis held in Rwanda

As part of the Dairy Dynamic Management (DDM) Training Program, a "Train the Trainer" clinical microbiology training in which 14 trainees participated, took place from March 10 to March 21, 2014 at the RAB laboratory, in Rubirizi, Kigali. The training was organized and facilitated by UC-Davis, RAB and RDCP II. The 14 participants (11Male & 3 Female) trained are microbiologists and veterinary doctors from RAB, University of Rwanda College of Agriculture, Animal Sciences and Veterinary Medicine (Nyagatare & Busogo campuses), RBS, DQAL and the Mountain Gorilla Project. The trainers consisted of the academic team from University of California, Davis in California and RAB scientists. The training aimed at imparting practical skills on mastitis diagnosis, and is a preamble to the forthcoming 16-week on-farm dairy production medicine and DDM program which will include farm milk sample collection, testing for mastitis and implementing mastitis control strategies.

USAID and RDCP II management field visits

Figure 6: USAID Rwanda mission officials pay a visit to one of the RDCP II benefeciries in Southern Province

During this period, USAID visited field activities in the Western Province with RDCP II partners to assess progress on the implementation of the program. This visit was an opportunity for the Project Management team to exchange ideas and information with the AOR and other staff from USAID Rwanda office about the range of enterprises that the project supports. The visit focused on dairy businesses particularly showcasing the potential of the informal sector.

The team visited the border with Democratic Republic of Congo(DRC) before meeting management of Uprocenya Dairy Coop, Ingabo Dairies, and MAHOKO Dairy Marketing Cooperative. The visit further provided insights into the immense opportunity that lies within the Gishwati milk basin and how RDCP II is supporting to nurture the businesses in their unique status. Notably, the DRC market which neighbours the area has a high demand for milk and milk products from Rwanda placing little to no quality requirements for transporters and milk sellers into the Congo. While this presents an export opportunity, efforts to achieve high quality of milk by RDCP II and partners are constrained with traders attempting to by-pass the organized collection systems. Collaboration with district officials and cooperative leaders has played a critical role to curb the vice through joint efforts to sensitive the traders.

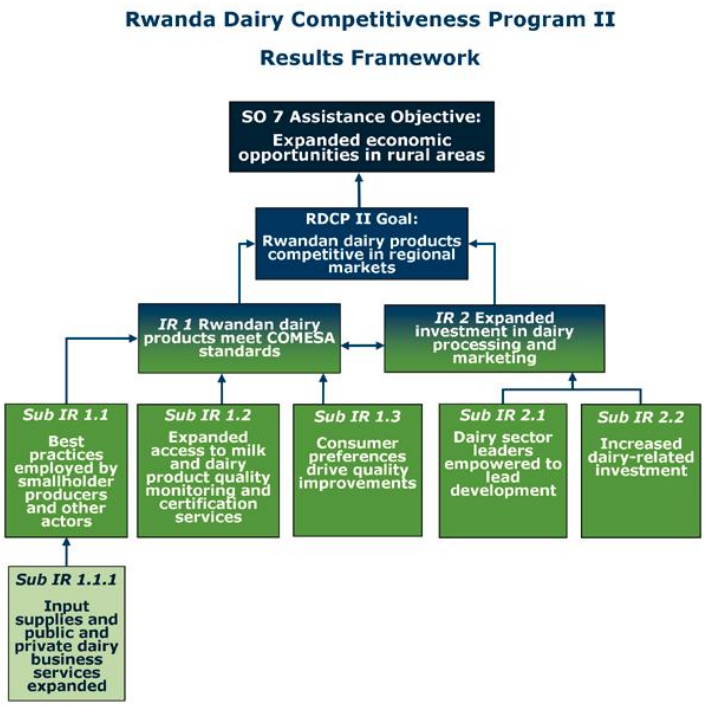
Figure 7: Members of press were invited by USAID to various field visits that included one RDCP II beneficiary – KIDACO Milk Collection Center

USAID press tour celebrating 50 years anniversary

In order to celebrate USAID 50 years of operations in Rwanda, RDCP II facilitated the visit of USAID officials and a team of journalists to Kidaco MCC in Huye District to highlight some of the USAID-funded work in Rwanda. Kidaco highlighted its achievements and those of the the

surrounding community including milk collection that has increased from 3,000 to 5,000 liters a day over the past 12 months of itsr collaboration with RDCP II. The coop is now processing an improved fermented milk product

Figure 1: RDCP II Results Framework



IR 1: Rwandan Dairy Products Meet COMESA Standards

Figure 8: Seal of Quality program is a quality based initiative that RDCP II has designed for government and other stakeholders to adopt in the sector interest to improve milk quality and productivity

Rwanda produces over 450 MT of milk annually which is largely marketed through poorly regulated informal routes. This results in losses to the dairy sector, both in volume and value of dairy products marketed. RDCP II aims to position Rwanda as a hub for high quality dairy products by benchmarking local standards to regional COMESA standards and working with sector actors to achieve the same through a reward mechanism for implementing a range of best practices under the Rwanda SoQ program.

Progress has been made across the points in the dairy value chain in terms of dairy farmers trained and milk transporters engaged, as well as dairy processors and MCCs enrolled and encouraged to drive this process. RDCP II has worked closely with RBS, RAB and RALIS to ensure these agencies are well prepared to support this shift. The draft Ministerial Instructions developed during the last two quarters are at an advanced government legal review stage that is now beyond MINAGRI. The Instructions will provide the legal basis to enforce best dairy practices across the entire dairy value chain from production through transportation and handling and processing. This will be the basis for a fully functional national inspection and certification program under RALIS.

IR1.1 Best practices employed by small holder producers and other actors

Key achievements:

- 3,338 (1,233 female and 2,105 male) individuals (producers) trained in addition to 11,487 trained up to the end of last quarter giving a cumulative total of 14,825 individuals trained equivalent to 32.8% of the program LOP target (see FTFMS table for disaggregation details).

- 2,258 full-time equivalent jobs were identified this quarter in addition to 440 captured up to the end of last quarter, corresponding to a cumulative achievement of 2,698 new jobs (35.9% of LOP target) attributed to RDCP II implementation.

- 236 milk transporters (9 female and 227 male) were trained by IAKIB RDCP II trained service providers and through RDCP II facilitation.

- 341 individuals (66 male; 275 female) benefited from a training on gender mainstreaming in dairy sector in Nyagatare and Gatsibo District

Figure 9: Two senior government officials – Director General (Left) at Rwanda Agriculture Board, Prof Jean Jacques MBONIGABA Muhinda and Director General at Rwanda Bureau of Standards, Dr. Mark Bagabe – attended closing ceremony of the UC Davis training

- 14 individuals participated in a "Train the Trainer" clinical microbiology training organized by UC-Davis.

- 10 cheese makers received a one day BDS training of which 6 of them (5 males; 1 female) are new in the program

Artificial insemination services-best practices employed

- After conducting pregnancy diagnosis, ERAGIC, a RDCP II trained service provider and grant recipient, re-inseminated 350 cows while ITABAZA, another RDCP II trained grant recipient, inseminated 123 cows (50 after natural heat + 73 after synchronized heat) in Gatsibo, Kayonza, Nyagatare and Rwamagana districts.

- In Kicukiro District, Nyamata Agri-inputs also diagnosed pregnancy in 42 cows that were re-inseminated during the last quarter; 27 cows (64%) were pregnant while 15 were not pregnant.

- 11 AI service providers were contracted and began training farmers and will, in the next quarter, inseminate prescribed numbers of cows across districts of RDCP II operation, except Nyagatare where similar services are being offered by ERAGIC and ITABAZA (Table 2).

Training and farmer follow-up

- 2,811 farmers and others followed-up this quarter, but trained up to the end of the last quarter, applied improved technologies and management practices giving a cumulative total of 11,487 farmers applying technologies and best practices, equivalent to an achievement of 40% of LOP target

Figure 10: A farmer displaying mucuna harvested following a training on best practices and new technology

- 1,234 new vulnerable households benefited from the program, during the quarter, making a cumulative total of 6,872, equivalent to 49% of the LOP target

- 1,388 new micro and small enterprises were supported during the quarter, making a cumulative total of 3,110 micro and small enterprises supported, corresponding to an overachievement of 207 % compared to the program target of 1500

Consistent with achieving the four core products/activities in relation to best practices i.e., the Feed Flow Plan, the Herd Health Plan, the Reproduction Plan, and the Clean Milk Production Plan and the SoQ, RDCP II continued farmer training using trained service providers. The approach taken was as described in previous reports in which selected service providers were trained on the best practices and then used as TOTs to train farmers. For this quarter, the service providers or partners were largely the 11 AI service providers, and other grant recipients including ITABAZA veterinary cooperative.

Implementation of Activities

Training Updates

As previously reported, farmers' training topics included feeding and conservation of forage, and disease control. Farmers were trained on hay and silage making, impoving the quality of crop residues and conserved forages using molasses and urea treatment, making concentrates at home using home grown crops such as field beans, soybean and maize, and feed flow planning in order to maintain milk production across seasons.

During this quarter, RDCP II facilitated training, through service providers and grant recipients (Table 2), in 12 districts of RDCP II operation and followed-up farmers in six districts (Gicumbi, Huye, Kamonyi, Nyagatare, and Musanze & Rulindo). Partly in this regard, 3,338 farmers were trained. The farmers trained were largely from new sectors across the 12 districts (Gasabo, Gatsibo, Gicumbi, Gisagara, Huye, Kamonyi, Kayonza, Musanze, Nyabihu, Nyanza, Ruhango and Rwamagana). For example, the new sectors recommended for RDCP II facilitated training in Gicumbi District were five, Bwisige, Miyove, Manyagiro, Mukarange and Rwamiko. Out of the 3,338 trained farmers, 37% were women.

The 236 transporters trained in Gicumbi were from MCCs (Maya, Manyagiro, Ngondore and Cyuru) that had not been previously reached by RDCP II. They were trained over a two-day period and the training was on best practices for milk production and quality maintenance along the dairy value chain, dairy feeding technologies; common diseases, their control measures and treatment; business development services, record keeping, cooperative management and strengthening; and gender mainstreaming.

Some issues and recommendations raised by the trained transporters included assisting farmers to buy five-liter milk cans for delivery of milk to transporters instead of the plastic containers used by most farmers. While RDCP II has distributed forage legume seeds to some farmers in Gicumbi District and elsewhere, the trainees requested for assistance to source more seed. The trainees further noted that veterinary services were inadequate because sector veterinarians have multiple responsibilities that reduce their availability. They also requested support in getting early payment from milk buyers.

Women's Participation

Figure 11: A woman, one called Ms. Betty Abetesi trained on making feeds meant to improving milk yields from cattle.

Despite women having been consistently invited for training through MCCs and sector offices, women attendance was less than 20% in Gatsibo, Gisagara and Ruhango. Also while there are previously reported reasons for the low attendance including low women cattle ownership and dominance of husbands, the RDCP II Gender Advisor has circulated strategies to increase women participation. These include ensuring that women that attend register their names rather than the names of their husbands as has been noted in many instances. While this is a record keeping detail, it addresses the issue of representation ensuring participants understand that they benefit in their own merit. In addition, an appeal to men to bring their spouses for training could also increase women attendance. All grant recipients have been instructed to achieve a 50% quota for women participation. To this end, in March ITABAZA (a grant recipient) reported that out of 133 farmers that attended training, 102 (77%) were female.

Adoption and utilization of services

The farmer in Busogo Sector of Musanze who was selected during the last quarter to produce Calliandra seedlings from seed for distribution to other farmers successfully produced 2,700 seedlings. The seedlings will be distributed to 80 model farmers across the Northern Milk Shed districts (Musanze, Nyabihu, Rubavu & Rulindo) during the next quarter.

Farmer groups that have engaged in commercial fodder production reported in the last quarter began fodder selling or continued to expand production. In this regard, Urwurirwiza limited company in Rwamagana District has so far harvested and marketed 1 tonne of *Chloris gayana* hay at a price of 100 Rwf/kg (USD 0.15/kg). The company intends to expand the pasture hectarage and arrange supply contracts with buyers. Abadahigwa Farmers Cooperative at Nyamiyaga MCC in Kayonza, which is also engaged in fodder production, harvested 400 kg of *Chloris gayana* hay and sold the hay to members of the cooperative at 125 Rwf/kg (USD 0.18/kg). Demand for the hay currently exceeds supply. In addition to the *Chloris gayana* hay, from about 8 kg pooled from individual member seed donations from RDCP II that were planted on a common plot, the cooperative harvested 40 kg of Mucuna legume seed. It has planted the 40 kg of Mucuna on a larger hectarage (0.4 ha) to increase the quantity before it begins selling some of the seed.

A 2,000-litre milk cooling tank with a generator donated to IAKIB through a RDCP II grant is being filled to capacity to the benefit of transporters and farmers of Ngondore MCC. Specifically, 12 milk transporters and 464 farmers (393 males & 71 females) are daily delivering milk to fill the MCC tank. This market was previously unavailable to the farmers and transporters.

Figure 12: LOL IDD Vice President Jon Halverson handing over a mobile insultanted and 2000 litre milk coolng tank to a cooperative in northern Rwanda

The AI activities for ERAGIC and Nyamata Agri-inputs have either been completed or are near completion. Cumulatively, since RDCP II grant receipt ERAGIC inseminated 1,200 cows belonging to 1,139 farmers (462 female & 677 male) across the latter four districts. When diagnosed for pregnancy, 67% of the cows were pregnant after the first insemination. As reported above, ERAGIC re-inseminated the last 350 cows this quarter.

After the last pregnancy diagnosis of 42 cows reported above, Nyamata Agri-inputs Ltd completed insemination of 120 cows. Overall, after the first and second inseminations, 96 cows (86%) conceived out of the 111 cows that were available for pregnancy diagnosis. The overall pregnancy rate of 86% is high and confirms the value of re-inseminating non-pregant cows after the first insemination.

Table 1: Service providers engaged to conduct training and AI in 16 districts.	
District	Service Provider
Bugesera	Nyamata Agri- Inputs
Gasabo	COOVIG
Gatsibo	AGROJOY Ltd
Gicumbi	COOVIG
Gisagara	SPAD
Huye	SPAD
Kamonyi	NIR HOPE
Kayonza	HOBAS
Kicukiro	Nyamata Agi-Inputs
Musanze	A.T.VET
Nyabihu	UPROCENYA
Nyanza	Nyanza Agro Center
Rubavu	BAIR
Ruhango	Nyanza Agro Center
Rulindo	A.T.VET
Rwamagana	BARICE

Farmer follow-up

Figure 13: These two women were being interviewed by RDCP II team during the farmers' follow up exercise to establish how best they have adopted best farming practices since they were engaged by RDCP II

By the end of this quarter, post training farmer follow-ups were conducted in Bugesera, Gisagara, Huye, Kamonyi, Musanze, Rubavu, Rulindo and Ruhango districts. Across the districts, 630 trained farmers (264 female and 366 male) were reached. All the farmers followed-up applied at least one technology or best practice with the mean number applied being 10 ± 6 out of 28 total technologies and best practices disseminated. The maximum number of technologies applied per farmer was 26.

Milk production per farm per day increased by 12% after the training and adoption of technologies. In general, not surprising, farmers that did not have milking cows applied the least number of technologies. As observed previously, farmers applied technologies and best practices that did not require spending money such as the milking hygiene and milk handling and disease control best practices.

The total number of farmers and others that have applied improved technologies or management practices during this quarter is 6,142 in addition to the cumulative total of 5,345 reported at the end of the last quarter, making an updated cumulative total of 11,487. Based on the follow-up survey results, farmers interviewed indicated they had adopted at least one technology or best practice. As in the past, improved technologies included silage and hay making, use of treated crop residues, minerals, feed concentrates, cow vaccination, milking hygiene, and record keeping.

Based on results from a survey conducted this quarter and improved jobs tracking, particularly on-farm jobs, 2,258 full-time equivalent jobs were identified this quarter (see FTMS Table). Three categories within which jobs are created were found to be as follows:

- Trained farmers (the majority are small farmers),
- Farmers supplying relatively large quantities of milk to MCCs (>10 litres/day), and
- Dairy value chain players from MCCs to retail outlets.

In general, 11% of the first category (small farmers) created jobs while 76% of the second category created jobs. Also, in general, job creation is associated with increased milk deliveries to MCCs. For example, at transporter level, it was noted that when milk quantity to be hauled exceeds 100 liters per day,a bicycle transporter would hire a helper (sub-contract) for each additional 100 liters. Given this observation, there is potential to identify more jobs created within the regisitered transporters. In addition, the on-farm jobs reported this quarter are from the Northern Milk Shed only; hence, the jobs created are likely to be more than reported this quarter. RDCP II will conduct a second survey for this category to further establish the number of jobs created across the four milk sheds.

IR 1.1.1 Input supplies and public and private dairy business services expanded

Figure 14: Arron Bihozagara pictured whilst supervising his mucuna field is one of the selected model farmers in Nyanza District, Southern Rwanda

383 model dairy farmers (221 male, 162 female) were identified after initiation of a program to identify and work with at least 20 model farmers in each district to enhance extension delivery. The agricultural profiles of at least 50% of the identified farmers have been compiled. A training centre –Gako Organic Farmers' Training Center (GOFTC) has been identified to host the model farmers' training dueto commence in May. The centre located is in Masaka sector, Kicukiro district and has a high reputation for both its facilities and training services.

Figure 15: Vetoprox, a small scale feeds processor, received the above equipment as a grant from RDCP II

One of the two RDCP II grant recipients, Vetoprox in the Southern Milk Shed, that received animal feed processing equipment has been able to sell larger quantities of stockfeeds progressively. From initial monthly sales of 200 kg dairy feed, sales have increased per month though at a slower pace than earlier anticipated.In the month of March Vetoprox sold 1,500 kg of dairy feed and diversified production to poultry and hog feeds to increase economies of scale for business. The marketing of feed strategies that VETOPROX was advised by RDCP II to use including linkages with MCCs are yielding positive results with some MCCs being adopted as agencies at which feeds may be purchased.

The other feed mill grant recipient, Nyagatare Agronomist Development Cooperative (NADCO) in the Eastern Milk Shed, began operations but the quantity of stockfeed is still low (250 kg/month). Unlike other RDCP II grant recipients, NADCO was not available for training before implementing its activities; as a result, it has requested for training in, among others, business management and stockfeed processing. RDCP II will offer the training in the next quarter.

One service provider, Veterinary Yield Entrepreneurs Cooperative (ITABAZA) that received a capacity building grant for delivery of AI and veterinary extension services has continued offering commercial veterinary services. Demand for ITABAZA services including AI, veterinary drug supply and emergency veterinary services, and animal production consultancy services has continued increasing.

Emergency veterinary service cases handled by ITABAZA increased from 3 cases/month during the last quarter to 6 cases per month during this quarter. Gross revenue from services to attend to the cases exceeded USD 450 during the quarter while sales revenue from veterinary remedy sales more than doubled compared to the last quarter. The revenues may not be high enough to cover overheads but the business growth trajectory is promising. ITABAZA will receive support from RDCP II staff to review their business plan to devise strategies for growth towards achieving break even sales. This review will include establishment of clear break-even sales volume as a motivation for business expansion.

However, challenges still exist including the expectation of free services by smallholder farmers, lack of a confirmatory disease diagnosis laboratory, and failure by farmes to address important diseases, particularly mastitis. Out of 40 cows tested for mastitis for free, 22 (55%) had subclinical and clinical mastitis. Most of the cases were treated with antibiotics but the antibiotics used including gentamycin are banned from use in developed countries. This is an area where grant recipients and those in veterinary services require more guidance. RDCP II with collaboration from RAB and UC Davis will explore alternatives for treatment of mastitis that aim to replace gentamycin as the drug of choice. Efforts will include advising on available alternatives on the market and sensitization of the service providers.

Through use of heat synchronization hormones obtained from RAB, inseminations undertaken by ITABAZA increased from 16 during the last quarter to 123. The profile of ITABAZA has been raised through RDCP II facilitation that has led to recognition by government institutions and others. Apart from securing synchronization hormones free of charge from RAB, 13 members of ITABAZA received a 12-day AI training course at RAB Mulindi and Songa research stations. The ITABAZA participants received certificates after passing the AI theory and practical tests.

ITABAZA has continued receiving local and international high profile visitors that are interested in its activities. Of note was the visit by the One Health East and Central Africa project (OCHEA) team that had representatives from the University of California (Davis Campus) and Harvard University in the USA.

In order to improve dairy extension services delivery, RDCP II has selected 383 model dairy farmers, about 23 in each district of operation. In the last report, there was concern over the low number of female model farmers. This number has been affirmatively increased by adjusting the criteria. The percentage of women model farmers is now 42%, up from less than 20% during the last quarter.

IR 1.2 Expanded access to milk and dairy product quality monitoring and certification services

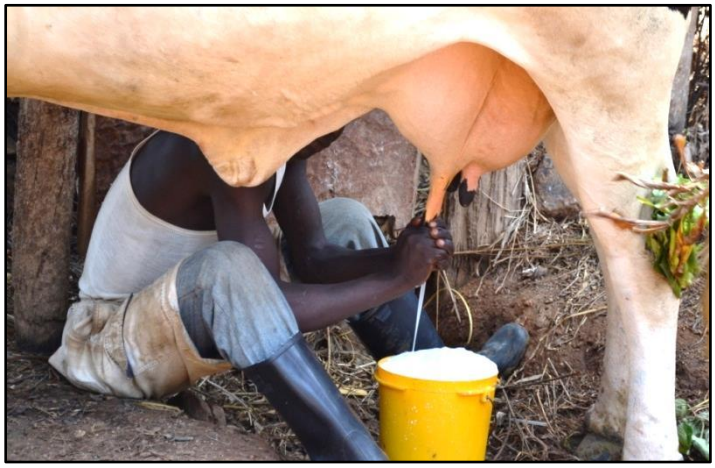


Figure 16: RDCP II has in various ways expressed keenness on initiatives designed to reduce mastitis in milk as a way of improving

Mastitis continues to be one of the major contributing factors to Rwanda's poor milk quality if not the major one. It is on this note that RDCP II facilitated the capacity building of all critical players through a two week training of trainers in clinical microbiology specifically mastitis testing for microbiologists/laboratory technicians from RAB, DQAL, RBS, University of Rwanda (Nyagatare and Busogo campuses) and the Mountain Gorilla Veterinary Project. They obtained training by UC Davis technical team and by RDCP II facilitation through the grants program.

Initially, 4 trainees, 2 from University of Rwanda-Nyagatare and Busogo campuses, 1 each from RAB and DQAL had been selected for training at the UC Davis campus in USA. Regrettably, three of the selected participants failed to get US VISAs; as an alternative, it was decided that the UC Davis team conduct the training in Kigali. The RAB laboratory in Rubirizi hosted the training in which 14 individuals from various institutions were trained (Table 3).:

Below is a table showing the number of individuals who participated in the training by institution:

Table 2: Number and sex of individuals who attended the UC Davis microbiology training at RAB Rubirizi laboratory

Organisation	**Number**	**Sex**	
		Male	**Female**
Rwanda Agricultural Board (RAB)	5	3	2
Dairy Quality Assurance Laboratory (DQAL)	1	1	0
Rwanda Bureau of Standards (RBS)	1	1	0
University of Rwanda-Busogo campus(ISAE)	2	2	0
University of Rwanda-Nyagatare campus (Umutara Pplytechnic)	3	2	1
Mountain Gorilla Veterinary Project	1	1	0
RDCP II/Land O'Lakes	1	1	0
Total	**14**	**11**	**3**

The overarching goal was to scale up the "train the trainer" process to benefit a large number of small holder dairy farmers through proper identification and management of mastitis. Determining the presence and identity of harmful pathogens in milk is a critical step towards improving the health of the cow and increasing the supply of safe, good quality milk.

Knowledge and skills learned during the workshop include:

- Agar plate preparation
- Plating milk samples
- Single colony isolation techniques
- Serial dilution and calculation of Colony-Forming Units (CFU)/ml
- Data recording
- Laboratory analysis & data management
- Disposal of biohazard wastes
- Reporting results
- Mastitis control measures

Tests for pathogen identification:

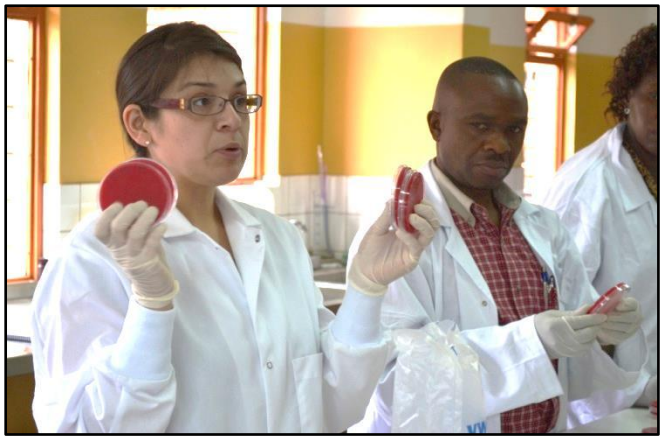


Figure 17: UC Davis trainer demonstrating how to manipulate blood agar plates during the mastitis diagnoss training

Participants were trained on the following tests to identify *Staphyloccus aureus* and other Staphylococcus species, *Streptococcus agalactiae* and other Streptococcus species, gram negative and Bacillus species: Potassium hydroxide test, catalase (hydrogen peroxide) test, CAMP test, gGram staining technique, microscopic identification of mastitis-causing organisms and the California Mastitis Test (CMT) test.

During the next quarter the field activity will be rolled out and will involve 16 fourth year vet students from both campuses being actively engaged smallholder dairy farmer in community outreach. This will include milk sample collection and analysis and utilizing the results to monitor and promote best milk production and handling practices at farm level.

IR 1.3 Consumer preferences drive quality improvements

Ministerial Instructions on milk quality control are in the final stages of being approved and gazetted by the Government of Rwanda. At the end of the quarter, a final review of the translated orders was being prepared by the Ministry of Justice before submission to the Prime Minister's office in prepartion for cabinet review and approval. The main purpose of these Ministerial Instructions is to determine guidelines for milk handling from the farm to the consumer which will be the legal basis for implementing hygiene in the dairy sector by all concerned actors. RDCP II actively participated in the drafting and offered technical guidance to the Government regarding the content of the Instructions. Once in place, all actors along the whole value chain will have prescribed roles and non-compliance penalties clearly stated.

Due to use of SoQ kits from the farm up to processing factories, milk quality and quantity supplied to Inyange has continued to increase. To this end, RDCP II has linked new coops to Inyange this quarter. For example, Agiragitereka (Huye District) and COOPAG (Rwamagana District) secured contracts to daily supply 2,500 liters and 2,000 liters, respectively, while the supply contract for Dukundamatungo (Rwamagana District) was increased from 1,600 to 2,500 liters per day.

Traditional milk kiosks typically sell milk with bacteria counts of 3 million cfu/ml whereas milk sold by Milk Zones have bacterial counts of 10,000 cfu/ml. This is largely a positive result from pasteurization and selling milk from hygienic surroundings. Consumers in Kigali are showing strong preference for milk from Milk Zones, which is driving Inyange to introduce more Milk Zones. The challenge continues to be the logistics for prompt milk delivery to the Milk Zones

to maintain demand. Regrettably, it has been observed that many Milk Zones run out of milk during the day.

New and improved products have been put on the market on a routine basis and with improved quality and packaging due to assistance from RDCP II. Such products include Yami yoghurt, KIDACO pasteurized milk and Zirakamwa Meza Dairies products in Nyanza.

Several milk processing units that had been closed down by RBS in December 2013 have re-opened due to RDCP II technical assistance. These include Blessed Dairy, Ingabo Dairy, and Zirakamwa Meza. RDCP II intervened and advised them on the corrective actions. Specifically, the actions primarily focused on improved sanitation and hygiene, development of standard operating procedures (SOPs), and linkages to milk cooperatives that were trained by RDCP II and enrolled on the SoQ program and, as a result, regularly test milk for quality.

These processors are now selling milk products that are consistently passing routine compliancetests at the RBS.

IR 2: Expanded Investment in Dairy Processing and Marketing

Key achievements:

- 998,497 USD leveraged through partnership with investors in private sector, in addition to 1,038,437 realizing a cumulative achievement of 2,036,934 USD equivalent to 10% of 20 Million program target;
- 161,142 USD loan value approved by financial institutions for the dairy enterprises in addition to 73,289 achieved up to the end of last quarter, making a cumulative total of 234,430.78 corresponding to 23% of the program target
- 9,349,403 litres of milk from farms were marketed by Milk collection Cooperatives during the last quarter in addition to 29,917,796 liters channeled by MCCs until the end of last quarter, making a cumulative achievement of 152.7% of the program target of 25,707,404 liters.

The predominantly informal dairy marketing in Rwanda presents an opportunity for investment in dairy processing and marketing. RDCP II aims to identify and profile these opportunities to attract appropriate

Figure 18: These well-branded dairy products have just introduced to market by small scale processor who has embraced the need to invest in processing high quality products as a means of elevating the business

investment into the sector.

RDCP II is encouraging existing local processors to increase processing capacity and upgrade facilities as well as ensuring that newcomers find the ground prepared for investment. In doing so, the program has adopted a multi-faceted approach combining evidence based research and dissemination of information through various stakeholder forums. In addition, RDCP II provides support to interested entities including banks and financial institutions that provide capital. This support ranges from product development, relationship building and confidence building between institutions to nurture new relationships.

RDCP II aims to increase public and private investment in human, asset and financial capital to enable Rwandan dairy products to become locally and regionally competitive. This calls for concerted efforts and increased stakeholder engagement to improve both policy advocacy and leadership development within dairy organizations and businesses.

IR 2.1 Dairy Sector Leaders Empowered to Lead Development

Private Sector Federation of Rwanda (PSF) has made commendable progress in the establishment of the Rwanda National Dairy Platform (RNDP) over the last quarter.

Figure 19: Private Sector Federation of Rwanda (PSF) continues to make remarkable strides in regard to establishing a functioning dairy platform – the Rwanda National Dairy Platform (RNDP)

However, due to unforeseen issues with scheduling of events PSF is behind the implementation time frame schedule . Amendments have been proposed for PSF to complete the activities by the end of June 2014. PSF has undertaken to work with RDCP II to reinforce dairy leadership nationally, with key engagement both centrally and at milk shed level. To this effect, PSF received a grant to facilitate grassroots mobilization of the various categories of groups that make up the RNDP as stipulated in the NDS. Activities under this grant are already underway and it is anticipated that PSF will both guide and facilitate the formation of a fully representative and accountable institution that upholds the values of the membership and the wider dairy sector. This will also enable the alignment of the new RNDP with the broader PSF mandate of ensuring high level advocacy for the associations under its umbrella. This activity is aligned with the NDS recommendation of the importance of having a body that represents the dairy sector in a professional and credible manner.Partners under this umbrella include producer associations, processors, input and service Providers, traders/milk sellers and transporters.

Build capacity of RNDP and DSWG

PSF has undertaken several initiatives since receipt of the RNDP restructuring grant including the following.

- **Election of RNDP representatives**

Field level mobilization awareness campaigns and elections dominated the activities conducted during the quarter. The provincial level and City of Kigali mobilization campaigns brought together private sector practitioners along the dairy sector value chain and as a result members of the platform were informed about the on-going process of creating the RNDP. Awareness campaigns focused on the benefits of the platform that brings together participants along dairy value chain (producers, processors, milk sellers, service providers and consumers). In addition, the awareness campaigns discussed the draft statutes with emphasis on inclusiveness and democratic elections at provincial level.

Of the proposed 35 delegates to the general assembly of the platform (that is, 7 delegates from each cluster); 19 have been elected - 5 representing the milk sellers, 7 representing the processors and 7 from the Producers cluster (specified in the draft statute). The process of electing delegates is still on going to ensure that all clusters and all the provinces are fully represented and is expected to be completed by the end of April 2014.

A total of 371(284 male and 87 female) dairy value chain actors, from different chains namely; farmers/producers, milk sellers, service providers and processors were reached and introduced to the RNDP.They actively participated in their respective clusters and elected representatives of each chain to represent their interests on the platform. The Platform is being strengthened and nurtured by PSF under USAID/RDCPII grant funding.

- **New institutions aligned to RNDP**

These new institutions are numerous and include primary cooperatives (these are under unions and federations), local NGOs, limited companies and individual businesses and consultants in the sector.

A total of **20** new institutions that are now aligned to RNDP consist of 11 unions, 1 federation of dairy farmers, 1 local NGO, and 7 Companies. In addition new dairy processors and milk sellers were all aligned to the RNDP after the awareness campaigns although most of them have just been formed and need to be strengthened to operate.

- **Recruitment of consultant to develop strategic and operational procedures for RNDP**

PSF hired a consulting company – MADO Livestock Development Company to develop both a draft strategic plan and Operating procedures for the new RNDP. The consultants took part in the on-going provincial consultative meetings and elections of delegates to the board. This provided them an opportunity to engage with the various value chain groups under the RNDP. They will present their draft report to the RNDP delegates at the end of April.

- **Consultative meetings with PSF**

In order to ensure activities under the PSF grant for restructuring RNDP are on track, RDCP II conducted a review in collaboration with the management of PSF. Overall, the implementation of the program is behind schedule due to issues unforeseen regarding the registration of an organization with a diverse membership. For this reason, PSF is currently revising their implementation plan to request for a no-cost extension to end of June 2014.

Dairy Sub working Group Meetings

RDCP II remains active at various levels of intervention-national and provincial. The team continues to participate at the Minagri working group level and further delivers topical issues for discussions to the milk shed level. During this quarter, RDCP II facilitated the quarterly Milk ShedDairy Sub-Working Group(MS-DSWG) meetings in the four milk sheds. The discussions focused on progress that has been registered by RDCP II and partners in the last one year and also some of the issues that still affect the sector. Some of the issues that were discussed include the informal milk market, untracked milk volumes and revenues, poor milk quality,and among others cooperative and MCC management.. Members also discussed strategies that could be adopted to address some of the issues raised.

Across the milk sheds, some action points discussed were as follows;

- Policy on packaging to improve dairy product marketing particularly for cheese. Participants proposed to engage Rwanda Environment Management Authority (REMA) and MINICOM as key policy makers regarding use of plastics.
- Consolidation of farmer training materials among stakeholders. MINAGRI/LISP shall share topics and follow up with all stakeholders.
- Exchange visits amongst stakeholders. Stakeholders should share information on upcoming learning trips, so that members can quickly assess possibilities of cost sharing for the same trip.
- Improved cooperative and enterprise management practices need wider dissemination.
- Improving milk quality and market expansion.
- Need for generic campaigns to increase milk consumption.

Facilitate institutional and association capacity building

During this quarter RDCP II continued to build on the positive energies of key associations, cooperatives and institutions involved in the dairy sector. RDCP II has continued to mobilize different cooperatives to submit applications to Rwanda Cooperative Agency (RCA) as a step towards legal registration as cooperatives. Cooperatives that were facilitated to get legal registration include the following:

- Indakemwa Mugandamuri milk seller's cooperative
- Cooperative d'Elevage Moderne de Bukure (COOPEMOBU)
- Clarified with RCA on whether Nyagatare Dairy Farmers Cooperative Society (NDMCS) was fully registered because they had lost their original certificate
- Followed up on Agiragitereka Huye to equip their primary cooperative and formalize their Union as requested by RCA.

Other cooperatives that are being facilitated to operate include the following:

- Zirahumuje cooperative of Nyagatare, KAMADAMACO of Nyagatare, CTBK Rubavu, KOZAMGI of Gicumbi, COTEGI Rulindo , Ntarabana dairy farmers cooperative, Karenzi milk selling company, Uruhimbi Rwizihiweya Rukoma Kamonyi, DUFACO, Aborozi Twisungane Kabuga in Nyamiyaga sector of Gicumbi district. Agiragitereka in Huye and CTSOR cooperative were also facilitated to re-ignite their operations because there were mismanagement issues that had caused difficulty in cooperative operations.

Technical Support to Processors

Figure 20:KIDACO is one of the small scale processors that have been equipped and encouraged by RDCP II to utilize their installed capacity to ensure progress

RDCP II engaged Dairy processing consultants Irwin Foreman and Cossam Muhatsi to inspect dairy processing plants supported by the program and assess their capacity to utilize installed equipment as well as explore opportunities for growth. Dairy plants visited include Blessed Dairies in Gicumbi, KIDACO in Huye, Zirakamwa Meza-Nyanza, Muhe Cheese Farm and Hajji Dairy Enterprise. The consultants provided guidelines for a development roadmap to support the processors visited as a key output of their assignment. The processors visited were selected on the basis that they are the most progressive among small and medium processors that RDCP II supports. Both consultants working with RDCP II National Milk Quality Specialist-Shukuru Bizimungu spent 1-2 working days at the dairy plants above. Through focused discussions, the team jointly identified critical points for each processor to focus their attention in order to achieve their full potential. These include improving sanitation measures, improving process flows, diversifying products processed and measures to save energy consumed at the plants. Respective dairy plant owners appreciated the caliber on consultants and the quality of technical advice they received from them. The consultancy report will guide RDCP II in determining appropriate support to each of the processors.

RDCP II organized and conducted a one day business training session for cheese makers in Musanze. The training focused on the following subjects: Business startup, business planning, as well as record keeping and reporting. This training was attended by 10 cheese makers, who came from Kicukiro, Gicumbi, Musanze, Nyabihu and Rubanvu. The training was also attended by one agro-vet and AI services SPs from Musanze.

Milk Zone franchising progress

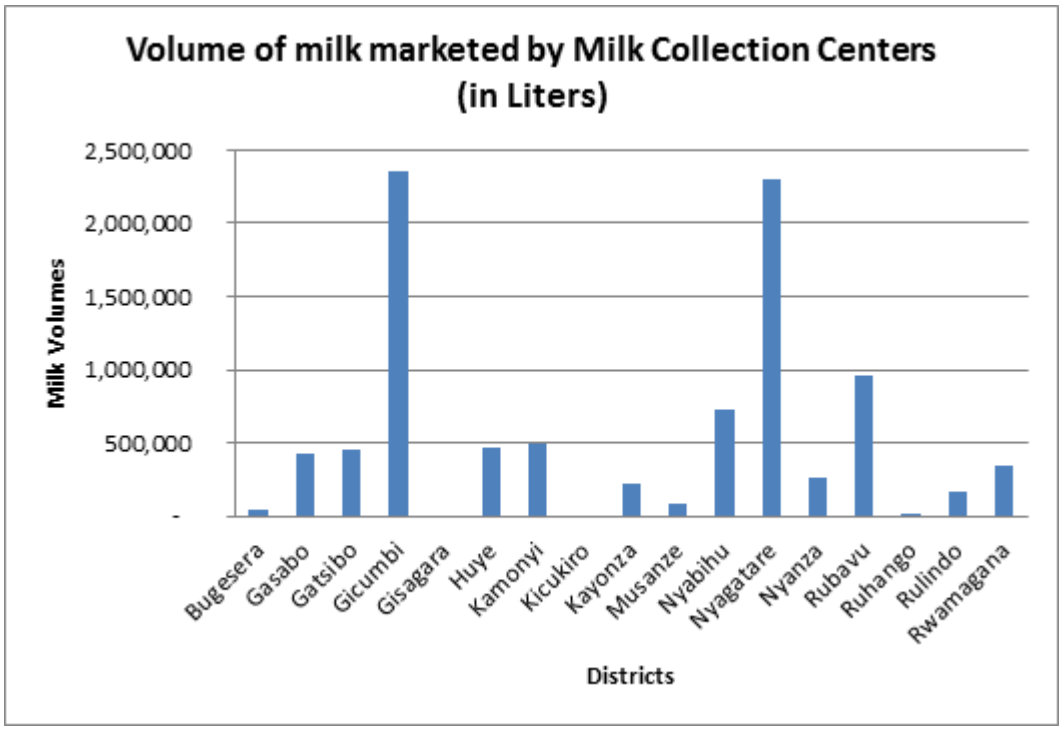
Figure 21: The introduction of Milk Zones has proved to be a key driver for increased consumption because of their easier accessivility and more affordable retail prices

Over the last quarter, **2** additional new milk zones have been opened under the arrangement previously explained with the milk vendors.This makes the cumulative number of milk zones 23 by the close of March 2014.

Improved milk supply linkages and potential partnerships

Dialogue between several large milk haulers and Inyange continued in this quarter, COOPAG a dairy cooperative in Rwamagana signed a contract to supply 2,000 litres of milk while Agiragitereka in Huye district signed a contract to supply 2,500litres daily to Inyange. The above two cooperatives received an equipment grant in the previous quarter and the supply contracts have increased their milk sales significantly up from 500liters and 800liters respectively, and previously sold informally to milk traders.

Figure 2: Volume of milk marketed by Milk collection centers

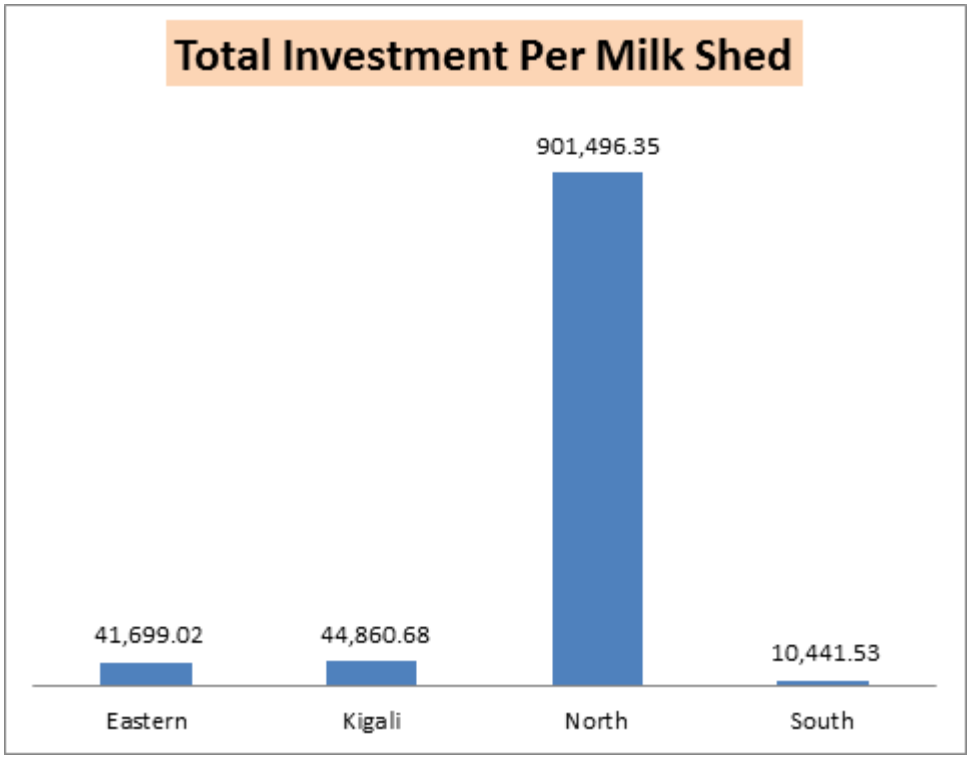


IR 2.2 Increased Dairy-Related Investment

Coordinate and leverage industry investment

During the last quarter, leverage amounts to a total 998,497 USD. Most leverage has been generated in Northern province from MUKAMIRA dairy plant with dairy farmers' shares amounting to 783,114.55 USD. Other investments in Northern province were from LISP investment in COTEGI MCC in Ntarabana-Rulindo district and CTBK a cooperative in Rubavu which mobilized investment through purchase of an additional milk cooling plant with funds equivalent to 2,983.29 USD from farmer equity. Northern province has seen active investment in the dairy sector as a result of it's proximity to the Eastern DRC market, good market linkages to the Kigaliu market and excellent dairy production climatic conditions that prevail in Gishwati and surrounding areas. In addition, loans during this period equivalent to 161,142 USD were invested into dairy businesses by a variety of value chain actors during this quarter.

Figure 3: Value of dairy investment by milkshed



Promote investment

Investment promotion is a key milestone for RDCP II. INSPIRED International completed the initial phase of the Deep Dive for dairy value added investments and presented key findings to RDB and USAID in February. Based on the findings it was clear that significant value added opportunities exist in fermented milk products in the Rwandan marketplace and that there is also significant comparative advantage in supplying these products into Eastern DRC and Burundi.

Figure 22: Rwanda Development Board is a key government institution mandated to fast track economic progress through attracting Private Sector Investment . Therefore, working with RDB is paramount in RDCP's approach designed to ensure sustainable growth for the dairy sector.

Maintaining the quality of raw milk was identified as a key challenge and it was shown that Rwandan consumers show strong preferences for a hygienic product competitively priced. Phase 2 of the INSPIRED work will concentrate on the regulatory and enabling environment required to attract and maintain potential investors and will also complete detailed cost analysis of setting up large scale investments in the scenarios identified which demonstrate the greatest potential. Phase 3 will focus on developing promotional materials that RDB can use to effectively promote Rwanda as an investment destination for dairy. Both of the phases will be completed during the next quarter.

In March RDCP II contracted a processing consultants mentioned above to visit 5 processors including the grantees Muhe Farm and Kidaco to look closely at their existing operations. The objective was to achieve a greater understanding of how these processors wanted to develop their business and to understand which key challenges needed to be addressed in order for their ambitions to be achieved.

All businesses demonstrated potential to varying degrees but a key challenge is that most are entrepreneurs with limited, if any, dairy processing expertise. Introduction of standard operating procedures (SoP's) and adherence to these SOP's was seen as key. New value added products were discussed.These discussions revolved around the introduction of flavoured milks and milk/fruit cocktails. Although these products are commonplace in other African markets the processors were unfamiliar with the processing techniques required to produce these products locally. RDCP II will continue to engage with the processors on new product development and will explore how best to support introduction of new value added products over the next quarter. This will require additional investments from the processors both technical and financial if these options are to be pursued.

Milk consumption campaign

During the last quarter, RDCPII selected Creative Communications (CC) as the winning bidder, out of three interviewed, to manage the dairy consumer campaign due to start officially in June 2014. CC demonstrated thorough knowledge of the Rwandan consumer market and experience in managing similar campaigns. This was followed by approval by USAID of CC to conduct the campaign. The campaign is aimed at raising the profile of milk and dairy products and increasing per capita dairy consumption in Rwanda. In order to achieve maximum benefits from this campaign, RDCP II agreed with the contractor on a choice of two themes of the campaign as follows:

Theme 1 - Increased consumption: This theme will feature messages that are tailored to educate the consumers on the benefits of drinking more milk more regularly. It's primary goal is to increase per capita consumption of milk. This theme will feature between June and End of August 2014.
Theme 2 - Increased awareness of quality: This theme is aimed at building awareness of the need to observe quality along the entire dairy chain. It is aimed at the consumers to empower them to demand for more quality control. This theme will run between September and November 2014.

In addition to the above, a key outcome of this activity is the sustainability plan which will outline how future milk consumption campaigns will be continued beyond the life of RDCP II support. The sustainability is an integral part of this activity and will focus on identifying key partners both public and private, and from the NGO/donor community and how this activity will be funded in 2015 and beyond. RDCP II will provide support for the creative input and content of the 2015 campaign and will look to external partners to fund campaign visibility allowing the transition to external support to commence during the life of RDCP II.

Stimulate supply and demand for dairy-related financial services

INSPIRED supports three financial institutions on behalf of RDCPII. These are Duterimbere MFI (Duterimbere), KCB Rwanda (KCB) and Urwego Opportunity Bank (UOB). The relationships are summarized in the following table:

Table 3: Financial institutions and products developed

Financial Institution	Product(s)	Target by end of 2015
Duterimbere	Saving for Dairy Producers and Value Chain Loan	1000 savers, total portfolio of FRW 50M; 1000 borrowers, total portfolio of FRW 100M

KCB	Savings plus Credit for Dairy Producers and Value Chain Loan	1000 savers, total portfolio of FRW 100M; 1000 borrowers, total portfolio of FRW 500M
UOB	Savings plus Credit for Dairy Producers and Value Chain Loan	1000 savers, total portfolio of FRW 100M; 1000 borrowers, total portfolio of FRW 500M

Duterimbere

The bank has processed but has not yet disbursed 5 successful loan applications for farmers; The loans value is 15.2 M and is expected to be disbursed in the next quarter.

The branch management in Nyagatare has experienced turnover of key staff due to serious management issues following resignations, this has added further delays to the process of product rollout.

KCB

KCB BANK Rwanda Limited finally launched their long awaited product "ZAMUKA MWOROZI" at DEREVA Hotel in Rwamagana District on March 27, 2014 in the presence of District officials, dairy cooperative representatives and other dairy value chain actors including input traders, and partners in dairy development. KCB Rwanda was lauded by speakers at the event as a leading bank which took time to understand the needs of Rwanda's dairy farmers; although launched in Rwamagana the product will be available nationally.

Figure 23: KCB Rwanda is expected to give an impetus to the Rwandan dairy sector growth after launching a dairy financial product in collaboration with RDCP II

In addition KCB had activities in Rwamagana and Huye.In Rwamagana district, three dairy cooperatives COOPAG, DUKUNDAMATUNGO (CDA) and DUFACO opened accounts with the bank. 365 members had already opened accounts (305 from COOPAG and 60 from DUKUNDAMATUNGO). Both COOPAG AND DUKUNDAMATUNGO are now KCB operational agency branches. This means they operate savings and deposit services on behalf of KCB allowing members to bank easily with KCB as an agency.

In the KCB Huye Branch ZIRAKAMWA MEZA NYANZA DAIRY LTD opened an account with the KCB Huye Branch as a first step to building a relationship with the bank.

KCB will hold a meeting with Inyange in the next quarter to discuss specific opportunities on invoice discounting application;

Sales activation for the KCB product across branches is underway with flyers already sent to all branches countrywide. In the next quarter, KCB will organize a meeting with COOPAG for a line of invoice discount facility.

UOB

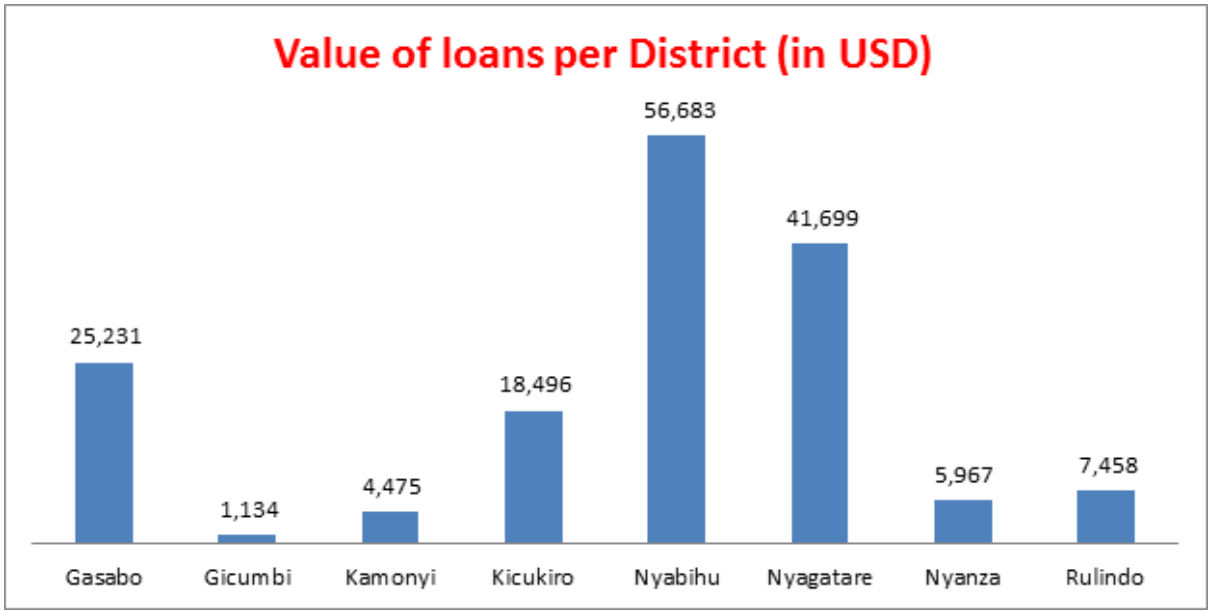
The bank remains optimistic at senior management level but the product roll out is yet to produce results. As a first step to enrolling members who will in due course be considered for loan applications, it conducted field level membership mobilization in Musanze, Rubavu and Rwamagana districtsfor loan applications.

Figure 24: Urwego Opportunity Bank remains optimistic in terms of doing good business with the dairy farmers

In addition to new product launched by UOB, dairy sector actors especially farmers, milk collection centers and small processors collaborated with other banks in rural areas to get funding for various dairy proposals.

A total of US $ 161,142 dairy loans was reported across the milk shed during this quarter. These funds have been disbursed by a number of institutions including Banque Populaire of Rwanda branches in Kamonyi and Nyagatare, Bank of Kigali Nyanza branch and four Saccos in Kicukiro, Rulindo and Gasabo. In all cases the loan recipients are actively engaged in RDCP II activities and their business outlook has improved as a result of this engagement, in turn leading to successful loan applications.

Figure 3: Below is a graph showing loan disbursements by district.



Monitoring & Evaluation and Knowledge Management

With regard to monitoring and evaluation of program activities, this quarter was mostly dedicated to close follow up of dairy practices implementation at farm level, and milk collection centers and small processors activities in different milk sheds. The changes in data tracking systems initiated in previous quarters were monitored and consolidated with more involvement of beneficiary organizations (grantees and other partners) in collecting and sharing information on their activities. In addition, RDCP II field staff monthly feedback meetings were maintained to ensure that issues encountered are discussed and resolved in time.

Also emphasis was put on more frequent farm follow ups through farm level quarterly surveys. These survey will allow progress tracking of farm level indicators such as milk production, values of milk sales and inputs, and improved technologies adoption.

The last farm level survey was conducted in 2013 and values for each outcome indicator were established and reported on in the FtFMS system and will serve as the reference to measure progress made by program beneficiaries. However, estimating the value of total annual production and value of inputs used by farmers posed some challenges. Most farm level estimates were based on farmers' information recall of the past 6 months or more. The most reliable source of data were milk collection centers which keep records of milk purchased

from farmers or milk aggregators, but there is a large quantity of milk which is channeled through private traders and milk kiosks, which is not captured by MCCs. This is the reason why mini surveys at farm level in various milk sheds were initiated this quarter as a solution to get more reliable data that will contribute to the annual survey data and information.

Substantial progress was realized in tracking new dairy jobs created which previously were inadequately captured. Currently our system allows allows data collection at farm, MCC, transporters/traders and processors level. More effort, however, should be devoted to tracking new jobs at milk collectors level, specifically, the category of individual traders who collect milk from farmers and resell it to either other traders/transporters or kiosks.

It's also worth mentioning that there has been a change in the way the indicator related to the value of dairy exports is being reported. Initially, only official formal dairy exports were supposed to be reported. But due to the increasing quantity of informal cross-border milk exports, it is prudent to include it in the total value of dairy exports. This is supported by the inclusion of informal exports in the national statistics by GoR institutions; in fact, a special team was put in place to track informal exports at all borders.

Finally, during this quarter, RDCP II in collaboration with USAID developed and submitted a scaling up plan for improved technologies and dairy best practices. Technologies for scaling up were agreed upon and the total number of dairy farmers to be reached is 50,000 including the RDCP II beneficiaries already targeted.

Gender Mainstreaming

In regard to the three gender indicators that the project implements, the following activities were completed.

Proportion of females who report increased self-efficacy at the conclusion of USG supported training/programming

- Zirakamwa Meza processing plant, an enterprise owned by a female member, benefited from consultancy services of a dairy processing expert, Irwin Foreman, during which industry knowledge was shared. Following this engagement, the processor is considering new products. This is considered an empowerment step for this ambitious and highly enterprising Rwandan woman.

- In Rulindo, at COTEGI, a cooperative of 213 members, 81 farmers were trained. Out of these trainees, 18 females were identified as ToTs who will train others on for a fee.

Figure 25: This woman is a female AI practitioner who has broken African traditional barriers that women don't conduct AI activities.

- Among the 11 AI service provider companies that received grants to conduct AI & farmer training, two of the companies are female owned. One is based in Gatsibo and the other is in Kamonyi.

- RDCP II facilitated a market linkage between KOAIBU and Tuzikamire Kabumba (a female dominated cooperative). As a result, Tuzikamire now has access to milk quality testing equipment through this collaboration with KOAIBU. During this quarter it sold 75,914 liters of milk at 130 Rwf per liter, up from 120 Rwf per liter in the last quarter. This milk quantity realized a total income of 9,868,820 Rwf over a three-month period and constituted an increase in income.

- The total number of women directly participating in the program by the end of this quarter is 3,910 (34% of all beneficiaries)

Proportion of females who report increased self-efficacy at the conclusion of USG supported training/programming

This indicator seeks to measure self-efficacy on proportion of females who report increased self-efficacy at the conclusion of USG supported training/programming. Activities relevant for this indicator are as follows:

- Following a survey on the impact of RDCP II's trainings and interventions on self-efficacy for women, 78% of the sampled women indicated that they have become strong to overcome life's struggles. Also when asked to respond on whether they agree with the statement that "At root I am a weak person" none of them agreed with the statement instead all of them indicated that they do not feel weak within themselves. However, despite the fact that they were in agreement that at root they are not weak, they did not score the "strongly agree" response on this component.

- When asked whether they were able to develop strategies to handle the situations `that life brings, 75% of the respondents said they can handle the situations that life brings. However, the remaining 25% indicated that they still have limitations in handling some of the situations that life brings. When asked why these limitations existed, the reasons given

were associated with low education levels and the patriarchal culture that put women in an inferior position.

The patriarchal cultural influence was not apparent in a widow/female headed households. Unlike those living with husbands, these households strongly agree with the statement that they are able to handle all life situations that life brings. In general, this information suggests that some weaknesses among females still exist; as a result, RDCP II should continuously mentor and facilitate them to become stronger in solving life issues and challenges that may come their way.

Proportion of target population reporting increased agreement with the concept that males and females should have equal access to social, economic, and political opportunities

- Through a farmers trained follow up survey, RDCP II determined the proportion of the target population that reported increased agreement with the concept that males and females should have equal access to social, economic, and political opportunities. 89% of respondents agreed with the concept that both females and males should have equal access to social, economic and political opportunities while 11% of the respondents did not agree. Notably, the high agreement in the survey is higher than prior to training when 49% did not agree with the concept. In the case of economic opportunities, initially the respondents believed that when a husband has a job or source of income it is not necessary for the wife to have a source of income or share equally on the resources of the household.
- **Grants and Investment**

  During this quarter, Land O'Lakes received USAID approval to provide sub-awards to 11 service providers to conduct farmer training and AI in 16 districts.
  Land O' Lakes issued subaward agreements to the following organizations listed in Table 1 above.

- As reported above, Land O'Lakes conducted clinical mastitis microbiology training for two weeks which was conducted by UC Davis but facilitated by RDCP II. The training was funded through the grants program that will further fund a dairy production medicine at two University of Rwanda campuses (Busogo & Nyagatare).

- Land O' Lakes procured some laboratory equipment for the two campuses which will be delivered to them in the next quarter. The equipment will be used during the Dynamic Dairy Management training under the dairy production medicine program which will start in May and run for a period of 16 weeks.

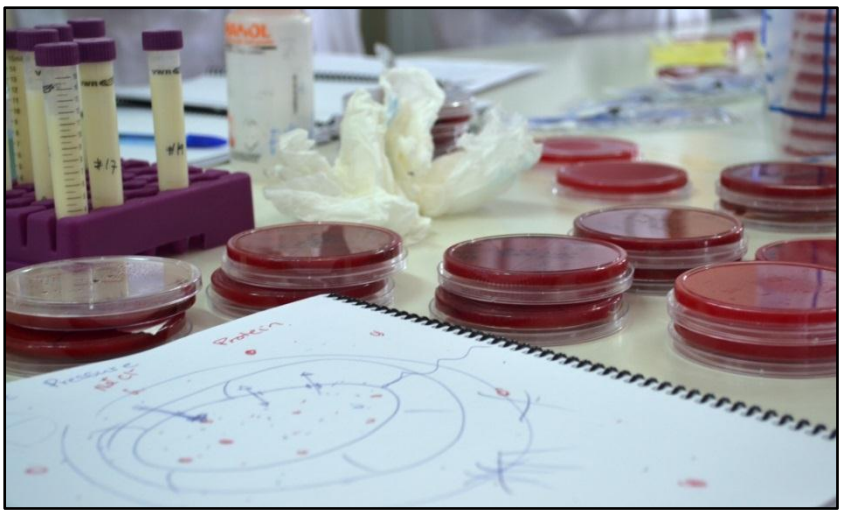


Figure 26: RDCP II procured laboratory equipment that was used during the Dynamic dairy Management training conducted by UC Davis

- Land O' Lakes received USAID approval for the second batch of the Seal of Quality kits and has started the procurement process.

Grant Monitoring

Land O'Lakes conducted regular visits to the existing subgrantees to monitor activity progress with regard to milk quantity changes, environmental compliance, milk quality improvement, and market linkages.

Examples of the monitoring activities are:

- CODECOL: This cooperative received grant equipment in September 2013 to facilitate milk collection and selling. Unfortunately, this cooperative suffered a milk supply decline from 2,000 liters to 150 liters per day, as a consequence of a local market loss (were supplying to army barracks that are no longer operating regularly). Several visits and meetings have been conducted with the cooperative to help them find an alternative market, and hence increase milk collection but no progress has been seen to date.
    - RDCP II has taken a decision to withdraw one Lifan tricycle and reduce the number of cans granted.
    - RDCP II will continue to mentor the cooperative and will collaborate with the district to work on cooperative governance. With good management, the cooperative can succeed.
- Coopag was delivering milk to individual suppliers which were unreliable. RDCP II linked Coopag to Inyange and their milk volume has increased from 300 liter per day in the last quarter to 2,000 liter per day in this quarter.
- RDCP II linked Bugesera Milk Collection Center (BMCC) to Inyange industries and a contract to supply milk is now under negotiation. Inyange industries Ltd requested to be supplied 2000 liters per day. RDCP II has

urged the MCC to mobilize new farmers to supply the MCC with more milk as their 5000l chilling capacity is underutilized and yet there is market for the milk. In doing so, the MCC will make best use of the grants received.

Key Activities for Next Quarter

Quarter three 2014 will see many key activities taking place:

- The milk consumption campaign will roll out in June to coincide with June milk month.

- RDCP II in collaboration with the Cheese makers Association will host in May, Rwanda's first ever National Cheese expo and Cheese competition. The objective will be to raise the profile of the Rwanda's cheese makers and introduce the latter to Rwanda's growing hospitality sector. These events will just precede the annual agricultural show which will commence in early June.

- The 386 model farmers selected across all milk sheds will receive a dedicated 3 day model farmer training commencing mid May. Training will focus on best practices as they relate to milk quality and productivity covering the key themes, dairy animal health, dairy nutrition and AI and record keeping. These model farmers have the potential to become change agents and ambassadors of dairy best practices in their respective sectors.

- University of Rwanda, Busogo and Nyagatare campuses will roll out the field activities of the Dairy Dynamic Management (DDM) in collaboration with UC Davis. This is the implementation phase of the mastitis microbiology training, which occurred in this last quarter, and will commence late May.

- As MINAGRI moves forward to gazetting of Ministerial instructions for milk handling, RDCP II and RALIS will complete the detail required to operationalize the SoQ field inspections and award processes. This gives additional credibility and impetus to the SoQ certification which will commence mid 2014.

- The Deep Dive study on dairy value added opportunities will be completed in collaboration with RDB.

Annexes

Annex I: FTF MS Table

Annex II: Success Story: The Multiplier Effect

Annex III: Irwin Foreman Technical Consultancy Report

Annex IV: Selected Press Coverage Jan- Mar 2014

Annex V: Microbiology Training Attendance List

Annex I: FTF MS Table

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
4.5(2): Number of jobs attributed to FTF implementation	**0**	**500**	**0**	**1,000**	**330.00**	**1,000**	**110**	**2,258**	**2,368**	**2,698**	**2,500**	**3,000**
Location				1,000		1,000						
Urban	0			400		200					800	800
Rural	0			600	330	800	**110**	**2,258**	**2,368**	**2,698**	1,700	2,200
Disaggregates Not Available												
New/Continuing				1,000	330					**2,698**		
New	0			1,000	299	1,000	**110**	**2,258**	**2,368**	**2,368**	2,500	3,000
Continuing					31				**0**	**330**		
Disaggregates Not Available									**0**			
Sex of job-holder				1,000	330	**1,500**	**110**	**2,258**	**2,368**	**2,368**	**2,000**	**2,000**
Male	0			500	300	750	**91**	**1,721**	**1,812**	**1,812**	1,000	1,500
Female	0			500	30	750	**19**	**537**	**556**	**556**	1,000	1,500
Disaggregates Not Available									**0**			
4.5(10): Total increase in installed storage capacity (m3)	**0**	**10**	**0**	**20**	**12.50**	**50**	**14.5**	**25.5**	**40**	**52.50**	**50**	**30**
Dry storage									**0**			
Cold storage	0			20	12.50	40	**14.5**	**25.5**	**40**	**52.5**	50	30
Disaggregates Not Available									**0**			
4.5.2(5): Number of farmers and others who have applied improved technologies or management practices as a result of USG assistance	**0**	**2000**	**0**	**4,000**	**4,787**	**6,800**	**558**	**6,142**	**6,700**	**11,487.00**	**8,000**	**9,200**
New/Continuing				4,000	4,787				**0**	**11,487**	**8,000**	**12,000**
New				4,000	2,985	6,800	**558**	**6,142**	**6,700**	**6,700**	8,000	12,000
Continuing					1,802					**4,787**		
Disaggregates Not Available	0								**0**			
Sex									**0**			
Male	0			2,000	3,134	3,400	**424**	**3,562**	**3,986**	**7,120**	6,000	6,000
Female	0			2,000	1,653	3,400	**134**	**2,580**	**2,714**	**4,367**	6,000	6,000
Disaggregates Not Available	0								**0**			
4.5.2(7): Number of individuals who have received USG supported short-term agricultural sector productivity or food security training	**0**	**3000**	**0**	**4,500**	**8,517**	**8,500**	**2,970**	**3,935**	**6,905**	**15,422.00**	**10,000**	**12,000**
Type of individual				**4,500**	**8,517**	**8,500**	**2,970**	**3,935**	**6,905**	**15,422**	10,000	12,000
Producers	0				8,274	8,000	2,845	3,679	**6,524**	**14,798**	9,300	11,300
People in government					74		0	13	**13**	**87**	100	100
People in private sector firms	0				168	500	125	242	**367**	**535**	600	600
People in civil society					1		0	1	**1**	**2**		

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
Disaggregates Not Available							0	0	**0**	**0**		
Sex				**4,500**	**8,517**	**8,500**	**2,970**	**3,929**	**6,899**	**15,416**	**15,000**	**15,000**
Male	0			2,250	5,574	4,250	2,003	2,409	**4,412**	**9,986**	7,500	7,500
Female	0			2,250	2,943	4,250	967	1,520	**2,487**	**5,430**	7,500	7,500
Disaggregates Not Available									**0**			
4.5.2(13): Number of rural households benefiting directly from USG interventions	**0**	**2500**	**0**	**5,000**	**8,501**	**8,000**	**2,970**	**3,929**	**6,899**	**15,400.00**	**10,000**	**12,000**
New/Continuing				**5,000**					**0**	**15,400**		
New	0			5,000	3,525	8,000	**2,970**	**3,929**	**6,899**	**6,899**	10,000	12,000
Continuing					4,976				**0**	**8,501**		
Disaggregates Not Available									**0**	**0**		
Gendered Household Type	0			5,000	**8,501**	**8,000**	**2,970**	**3,929**	**6,899**	**15,400**	**10,000**	**15,000**
Adult Female no Adult Male (FNM)	0			2,300	1,612	3,000	234	952	1,186	2,798	3,000	6,000
Adult Male no Adult Female (MNF)	0			200	557	700	40	261	301	858	500	800
Male and Female Adults (M&F)	0			2,500	6,150	4,300	2,696	2,716	5,412	11,562	6,500	8,200
Child No Adults (CNA)					182		0	0	0	182	-	-
Disaggregates Not Available									0	0		
4.5.2(14): Number of vulnerable households benefiting directly from USG interventions	**0**	**1,000**	**0**	**2,000**	**3,875**	**3,200**	**763**	**1,234**	**1,997**	**5,872.00**	**4,000**	**4,800**
New/Continuing	0				**3,875**					**5,872**	**4,000**	**4,800**
New	0			2,000	2,136	3,200	**763**	**1234**	**1,997**	1,997	4,000	4,800
Continuing					1,739					3,875		
Disaggregates Not Available												
Gendered Household Type	0			**2,000**	**3,875**	**3,200**	**763**	**1,234**	**1,997**	**5,872**	**4,000**	**4,800**
Adult Female no Adult Male (FNM)	0			920	1,365	1,640	**234**	**204**	438	1,803	1,720	1,940
Adult Male no Adult Female (MNF)	0			80	86	160	**40**	**124**	164	250	320	320
Male and Female Adults (M&F)	0			1,000	2,342	1,400	**489**	**906**	1,395	3,737	1,960	2,540
Child No Adults (CNA)					82		**0**	**0**	**0**	82		
Disaggregates Not Available										0		
4.5.2(23): Value of incremental sales (collected at farm-level) attributed to FTF implementation	**4,606,135**	**0**			**4,606,135**	**7,717,540**	**0**	**0**	**0**	**4,606,135.00**	**6,448,589**	**7,369,816**

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
FTF 4.5-4 : Gross margin per dairy cow	**162.22**	**0**	**0**		**162**	**210.89**	**0**	**0**	**-**	**162.20**	**227.10**	**259.55**
4.5.2(27): Number of members of producer organizations and community based organizations receiving USG assistance	0	4,000	0	**8,000**	**8,275**	**6,000**	**2,845**	**4,965**	**7,810**	**16,085.00**	4,000	2,000
Type of organization												
Producer organization	0			7,500	8,274	5,500	2,845	4,965	7,810	16,084	4,000	2,000
Non-producer-organization CBO	0			500	1	500	0	0	0	1		
Disaggregates Not Available					0	0	0	0	0	0		
Sex	0			**8,000**	**8,275**	**6,000**	**2,845**	**4,965**	**7,810**	**16,085**	**4,000**	**2,000**
Male	0			4,000	5,447	3,000	1,904	2,883	4,787	10,234	2,000	1,000
Female	0			4,000	2,828	3,000	941	2,082	3,023	5,851	2,000	1,000
Disaggregates Not Available					0	0	0	0	0			
4.5.2(28): Number of private enterprises (for profit), producers organizations, water users associations, women's groups, trade and business associations, and community-based organizations (CBOs) that applied new technologies or management practicies as a result of USG assistance	**0**	**100**	**0**	**250**	**228**	**250**	**113**	**297**	**410**	**638**	**150**	**100**
Type of organization	0			250								
Private enterprises (for profit)	0			150	75	170	102	137	239	314	40	30
Producers organizations	0			85	54	65	11	16	27	81	100	60
Water users associations					0		0	1	1	1		
Women's groups					0	5	0	142	142	142		
Trade and business associations	0			7	99		0	1	1	100	10	10
Community-based organizations (CBOs)	0			8	0	10	0	0	0	0	-	-
Disaggregates Not Available					0	0	0	0	0	0		
New/Continuing	0			**250**	**228**				0	**0**		
New	0			250	63	250	113	297	410	**410**	150	100
Continuing					165				0	**228**		
Disaggregates Not Available									0			

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
4.5.2(29): Value of Agricultural and Rural Loans	**0**	**100,000**	**0**	**200,000**	**29,851**	**$ 400,000**	**$ 43,438**	**$ 161,142**	**$ 204,580**	**$ 234,431**	**600,000**	**800,000**
Type of loan recipient												
Producers	0			20,000	0	100,000	**$ 14,725**	**$ 61,329**	$ 76,054	$ 76,054	100,000	100,000
Local traders / assemblers	0			60,000	0	100,000	**$ 24,296**	**$ 7,458**	$ 31,754	$ 31,754	200,000	300,000
Wholesalers/processors	0			60,000	29,851	100,000	**$ 4,417**	**$ 81,913**	$ 86,330	$ 116,181	200,000	300,000
Others	0			60,000	0	100,000		**10,442**	$ 10,442	$ 10,442	100,000	100,000
Disaggregates Not Available						0	**0**	**0**	0	0		
Sex of recipient												
Male	0			30,000		50,000		**124,336**			30,000	100,000
Female	0			30,000		50,000		**0**			30,000	100,000
Joint	0			100,000		150,000		**36,806**			500,000	400,000
n/a				40,000		150,000		**0**			40,000	100,000
Disaggregates Not Available												
4.5.2(36): Value of exports of targeted agricultural commodities as a result of USG assistance (for bilateral missions)	**85,979**	**0**	**0**	**$ 94,577**	**$ 7,096,830**	**$ 103,175**	**$ -**	**4,419,910**	**$ 4,419,910**	**$ 11,516,740**	**120,371**	**137,567**
4.5.2(37): Number of MSMEs, including farmers, receiving business development services from USG assisted sources	**0**	**100**	**112**	**500**	**1,293**	**500**	**429**	**1,388**	**1,817**	**3,110**	**300**	**200**
Size of MSME									0			
Micro	0		104	450	1,216	400	424	1,360	1,784	3,000	180	100
Small	0		8	25	69	50	5	28	33	102	70	80
Medium	0			25	8	50	0	0	0	8	50	20
Disaggregates Not Available					0	0	0		0	0		
MSME Type										0		
Agricultural producer	0		38	50	1,117	100	316	1,005	1,321	2,438	70	20
Input supplier	0		5	200	15	150	0	5	5	20	80	80
Trader	0		55	200	103	150	108	343	451	554	80	80
Output processors	0		2	50	26	100	5	35	40	66	70	20
Non agriculture			12		32		0	0	0	32		
Other							0	0	0	0		
Disaggregates Not Available												
Sex of owner												
Male	0		31	233	748	200	**329**				120	93
Female	0		17	217	390	200	**100**				100	87
Joint	0			50	0	100					80	20
n/a			64		155							

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
Disaggregates Not Available										0		
FTF Indicator 4.5.2-38: Value of new private sector investment in the dairy sector or food chain leveraged by FTF Implementation	0	$1,000,000	$0	$4,000,000	$728,596	$ 4,000,000	$309,841	$ 998,497	$ 1,308,338	2,036,934	5,000,000	7,000,000
Custom indicator 2.0.1: Number of promotional and educational events/program on dairy consumption implemented/conducted				0	0	10	0	0	0	0	10	10
Custom indicator 2.0.2: Number of people reached during the milk consumption promotional campaign				0	0	200,000	0	0	0	0	200,000	200,000
Custom indicator 2.0.2: Percentage of consumers that are aware of nutritional and health benefits of milk				0	0	50%	0%	0%	0%	0%	50%	50%
4.5.1(24): Numbers of Policies/Regulations/Administrative Procedures in each of the following stages of development as a result of USG assistance in each case: (Stage 1/2/3/4/5)	0	1	1	1	3	3	1		1	4	2	1
Sector	0							0	0	0	2	1
Inputs	0				0			0	0	0		
Outputs					0			0	0	0		
Macroeconomic					0			0	0	0		
Agricultural sector-wide	0		1	1	3		1	0	1	4		
Research, extension, information, and other public service	0				0			0	0	0		
Food security/vulnerable					0			0	0	0		
Climate change adaptation or natural resource management (NRM) (ag-related)					0			0	0	0		
Disaggregates Not Available					0			0	0	0		
Stages of development	0			1	0			0	0	0		

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
Stage 1 of 5 Number of policies / regulations / adminitstrative procedures analyzed	0		1		0			0	0	0		
Stage 2 of 5 Number of policies / regulations / adminitstrative procedures drafted and presented for public/stakeholder consultation	0				3		**1**	0	1	4		
Stage 3 of 5 Number of policies / regulations / adminitstrative procedures presented for legislation/decree								0	0	0	2	1
Stage 4 of 5 Number of policies / regulations / adminitstrative procedures prepared with USG assistance passed/approved								0	0	0		
Stage 5 of 5 Number of policies / regulations / adminitstrative procedures passed for which implementation has begun	0			1				0	0	0		
Disaggregates Not Available									0	0		
Custom Indictor 1 a : Volume of milk marketed by Milk Collection Centers (in Liters)	**16,067,127**			**19,280,553**	**25,213,808**	**20,887,266**	**4,703,988**	**9,349,403**	**14,053,391**	**39,267,199**	**22,976,589**	**25,707,403**
Custom Indictor 1.1.1 a: Value of inputs and services used by members of targeted cooperatives (USD)	**1,782,169**			**1,782,169**	1,782,169	**2,851,470**	0	0	**0**	**1,782,169**	**3,029,687**	**3,207,904**
Custom Indictor (a): Change in net dairy income among targeted households(in USD)	**2,823,967**			**2,823,967**	2,823,967	**3,671,157**	0	0	**0**	**2,823,967**	**3,953,554**	**4,744,265**
Custom Indictor 1.2 a: Number of new milk quality assessment technologies\protocols adapted\implemented	0			**2**	5	**2**	0	0	**0**	**5**	**3**	**3**
Custom Indictor 1.3 a: Number of new products awarded RSOQ	0			**5**	0	**8**	0	0	**0**	**0**	**8**	**9**
Custom Indictor 1.3 b: Percentage of milk marketed under RSOQ	0			**10%**	0	**15%**		**10%**	**10%**	**0**	**20%**	**35%**

Indicator / Disaggregation	Baseline Value	2012		2013		2014				Cumulative Achievement Life of Project	2015	2016
		Target	Actual Results	Target	Actual Results	2014 Annual Targets	2014 Quarterly Results		2014 Cumulative Achievement		Target	Target
							Quarter 1	Quarter 2				
Custom Indictor 2.1 a: Number of dairy related firms and organizations newly aligned within and provided a voice by dairy sector affinity organizations	0			70	12	70	4	20	24	36	70	40
Custom Indictor 2.2 a : Number of dairy enterprises with upgraded production facilities resulting from successful financing applications				500	1	500	15	8	23	24	600	400
Custom Indictor 2.2 b : Liters of additional daily milk processing resulting from financing assisted by RDCP II	0			10,000	0	20,000		40,961	40,961	40,961	30,000	40,000
GNDR-2 : Proportion of female participants in USG-assisted programs designed to increase access to productive economic resources (assets, credit, income or employment)	0			50%	38%	50%	32%	34%	34%	35%	50%	50%
GNDR-3 : Proportion of females who report increased self-efficacy at the conclusion of USG supported training/programming	0			60%	78%	70%		78%	78%	78%	80%	95%
GNDR-4 : Proportion of target population reporting increased agreement with the concept that males and females should have equal access to social, economic, and political opportunities	0			70%	85%	75%		89%	89%	89%	80%	90%

Annex II. Sucess Story

USAID | RWANDA
FROM THE AMERICAN PEOPLE

SNAPSHOT

The Multiplier effect: One pound of Mucuna seeds increases to 50 pounds

Adopting feeding best practices is key to modernizing dairy farming processes.

Photo: Emmanuel Nsekanabo/Land O'Lakes International Development

A farmer from Nyanza District in Southern Rwanda, Arron Bihozagara, proudly displays his Mucuna crop.

"Dairy farming contributes greatly towards my two grandchildren's primary school education fees and needs. I am also able to pay my cattle keeper and other casual workers in the fields of crops and Mucuna"

Mr. Arron Bihozagara,

Dairy Farmer

A 76-year old dairy farmer, Arron Bihozagara, wanted to grow his business to provide a better life for his grandchildren. He knew additional income would help pay for their education and allow him to hire a few more people to help out on the farm.

In January 2013, he attended a three-day educational workshop in Southern Rwanda's Nyanza District. Delivered by Rwanda Dairy Competiveness Program II (RDCP II)—a project funded by USAID and implemented by Land O'Lakes International Development—not only did the event increase Arron's knowledge about feeding practices, it provided him one pound of Mucuna seeds. In March of the same year, he planted the seeds on a small piece of land measuring less than 180 square yards.

Three months later, in June, he harvested thirteen pounds of Mucuna seed. From this harvest, he distributed five pounds to fellow farmers in community and planted the remaining eight pounds on a larger field measuring more than 700 square yards. By November, he harvested more than 50 pounds of Mucuna seed. So far, he has sold almost seven pounds of his latest harvest, and he intends to plant the remainder on an even bigger field.

In addition to multiplying his Mucuna seed, Arron has tremendously improved the health of his three cattle by feeding them elephant grass mixed with Mucuna forage—a practice he learned during RDCP II trainings. Previously, when Arron only fed his cows elephant grass, they produced two gallons of milk per day. With the newly-adopted feeding methods, his cows now yield almost four gallons per day, which is an increase of nearly 50 percent.

Telling Our Story
U.S. Agency for International Development
Washington, DC 20523-1000
http://stories.usaid.gov

Dairy Farmer Arron Bihozagara shows off his Mucuna.

What does Arron do with all this milk? Along with his grandchildren, he consumes one quart a day, a delicious nutritional benefit! Arron sells the remaining amount, which earns him approximately $104 USD per month ($3.50/day), which boosts him further above the conventional international poverty threshold of one US dollar a day. Previously, he earned $70 USD per month.

“Dairy farming contributes greatly towards my two grand children’s primary school education fees and needs,” says Arron. He beams an award-winning smile as he walks through his farming projects. “I am also able to pay my cattle keeper and other casual workers in the fields of crops and Mucuna.”

In two seasons of cultivation—in just six short months—the loving, 76-year-old grandfather multiplied the initial one pound of seeds into 50 pounds. He hopes the local service providers maintain regular visits and continue providing advisory services in cattle management.

Consultant Report

Land O'Lakes IDD

Rwanda Dairy Competitiveness Program II (RDCP II)

17th – 28th March, 2014

Consultant
Irwin Foreman MSc (Agric)
(Dairy Industry Consultant)(UK)

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1. Executive Summary

In the course of the assignment, 6 processors were visited to review and evaluate their business and processing operations. By viewing and examining their current operating environments and gaining an understanding of current limitations, business growth and processing expectations for further development of their businesses are provided.

Opportunities and benefits both for the processors and for Land O'Lakes are identified.

Action plans for Land O'Lakes for each specific processor are provided and issues requiring Land O'Lakes attention are identified.

2. Background

The Rwanda Dairy Competitiveness Program II (RDCP II) is funded by the US Agency of International Development and implemented by Land O'Lakes International Development Division. The project was designed to reduce poverty in Rwanda through expanded marketing of quality milk that generates income and employment, and improves nutrition of rural households. RDCP II aims to achieve this by linking existing and new smallholder dairy producers to expanding market demand driven by improved quality, reduced transaction costs and increased investment all along the dairy value chain.

Opportunities in value addition have the potential to make a greater contribution to the dairy value chain in Rwanda. Presently the sector consists of about 25 small scale processors making poor quality product the majority of which is sold into the urban market of Kigali. Products produced comprise mainly of fermented milk, yogurt and cheese. All processors are owned /managed by business men or women with very limited processing expertise. As a result processing plants are often managed in a haphazard fashion with no clear plan to upscale or improve processing methods. Consequently these businesses fail to meet their potential and often stall with low volumes of throughput and output.

RDCP II has recently granted processing equipment to small scale processors. It is evident that these businesses would benefit from technical support to develop processing management plans so that equipment granted can be used to its optimum.

3. Scope of Work

Purpose of the Assignment:

- Visit RDCP grant recipients KIDACO and MUHE farm with local technician to view their current operating environment and gain an understanding of both current limitations of and expectations for their business.
- Visit Blessed dairy – a progressive processor but with limited processing expertise to view current operating environment and gain an understanding of both limitations of and expectations for their business.
- Visit Haji Enterprise and Zirakamwa Iwacu dairy small scale processors of fermented milk to view current operating environment and gain an understanding of both limitations of and expectations for their business.
- Work as a team with local technician (identified by RDCP II).
- Provide guidance on improvements required by each business. This should relate to both equipment and accessories and day to day processing routine.
- Recommend processing map from receipt of raw milk to finished product.

Key Output

Clear processing road map for each business with both technical and logistical recommendations for next steps appropriate for Rwandan context.

Identify training needs at each business

Identify skills enhancement that would benefit local consultant

Other recommendations as identified by the consultant

A written technical report

4. KIDACO

Date of Visit: 18 March

Received by: Ndayamboje Cyplien (Training and Meetings Coordinator), Biginimana Jean Damoscine (Treasurer), Doshinuinano Mary (Accountant, Habineza Valiensi (Manager of Processing Unit).

Land O'Lakes Staff: Shukura, Cossam, Foreman

4.1 Background

This farmer cooperative, with 14 members, conducts a business buying and collecting milk, processing and selling 2 products, boiled / pasteurized liquid milk and fermented milk. The cooperative works with 560 farmers. The daily volume purchased and pasteurised is approximately 5000 litres. The business employs 14 people, and is located at the side of a highway in a populous area close to the town of Huye, and only 2 hours from Kigali.

The building and premises are rented on a 5 year contract. Under the rental agreement, if the owner should wish to remove the cooperative from the premises, then he is obliged to give one year's notice of his intention to repossess the premises.

Milk is bought at 200 RFr per litre, and finished product is sold at 250 RFr per litre. Liquid milk and fermented milk are sold at the same price.

The cooperative possesses 3 milk boilers of local construction, heated by wood fires. Recent additions are 2x milk coolers, and a 1000 litres capacity electric vat pasteurizer, granted and provided by Land O'Lakes.

Recent cash inflows have been used to purchase various fittings and peripherals associated with the processing equipment. There is no excess cash in the business. The owner shareholders have not received dividends.

The objective of the meeting was to gain an understanding of the scope of the business, and recommend changes which could lead to improved practices and business profitability.

4.2 Current Operations

The processing operations are simple. Milk is boiled in boilers and sold either loose by the litre, or packaged in 5 litre plastic jerricans. Fermented milk is also sold in 5 litre plastic jerricans.

Raw milk arrives at the processing centre from early morning. By 8am usually, 1000 litres has been received. The remainder of the milk arrives during the morning hours. If the volume of milk received exceeds the capacity of the boilers when they are in use, the excess is pasteurized in the vat pasteurizer. Because of the differential in cost between the use of wood as the heat source and the use of electricity for operation of the pasteurizer, preference is given to using the boilers.

The business is apparently operating fairly well, but without generating any meaningful profit. The margin between the buying price and the selling price is only 50 RF per litre, from which all operating costs must be met and any surplus for profit would be generated.

4.3 Potential Markets and Products

The business premises are in an advantageous location for accessing potential sales markets. Located on a highway, there is an opportunity to attract customers from passing traffic. There is a large school population in the immediate district, and the town of Huye is close by. These potential markets are readily accessible, provided suitable products are offered for sale.

Considering these untapped potential markets, and taking into account the equipment provided by Land O'Lakes, a vat pasteurizer and 2x milk coolers, together the low technical skill levels of the current management, I concluded that the plant could, with appropriate training, some equipment additions, and technical support, process any of the following products:

New Products With Potential for KIDACO

Product	Description	Comments
Flavored milk	A pasteurized liquid milk, with added sugar, food color and fruit flavors.	Sales targets: schools and passing traffic* Could be hot filled.
Milk Punch	A pasteurized milk which is a combination of milk and fruit juice concentrate	This product contains approximately 70% water, 15% milk and 6% fruit concentrate* This is a highly profitable product, since it contains 70% water. The product is hot-filled, with up to 3 weeks shelf life. It will survive inefficient cold chain distribution channels. Sales targets: Passing traffic, kiosks / shops in Huye.
Chocolate milk	A pasteurized chocolate milk (or coffee flavored if desired)	Ingredients are milk, sugar and cocoa* Could be hot-filled. Sales targets: Passing traffic, kiosks / shops in Huye.

*Formulations, recipes and processing and operating procedures can be provided

4.4 Opportunity for Land O'Lakes

In the discussion it was mentioned that currently, there is a government initiative to provide milk to schools, and to encourage the development of rural businesses. If this is the case, it would present an opportunity for Land O'Lakes to provide assistance to KIDACO, working to lobby the relevant authorities to access the government support which is reportedly available, and in parallel working with the cooperative to improve current operations and introduce the new products.

4.5 Land O'Lakes Action Plan and Immediate Interventions

4.5.1 Provide training on operations sanitation and personal hygiene to all staff members. The training should include the topics, elementary dairy bacteriology, milk handling hygiene, the methodology of effective cleaning and sanitization of equipment, personal hygiene, and a review of the chemicals which are recommended for cleaning dairy equipment.

4.5.2 Conduct a review of the chemicals and methods currently being used in KIDACO to clean equipment. Make changes to improve the choice of chemicals and methods, as appropriate.

4.5.3 Write documented operations procedures for all the handling and processing operations. This is best done by forming a focus group of the workers themselves, and in discussion under the leadership of the trainer, discussing and working through what they actually do on a daily basis. The involvement of the workers is essential in this process. Corrections for improvement can then be made to the daily routines. The result becomes a Standard Working Procedure, a document which describes how the work is to be performed, which is then followed by all the workers, following instruction and training. Then appoint one of the workers to become the Quality Manager, whose task will be to ensure that the working instructions are adhered to by all members of staff.

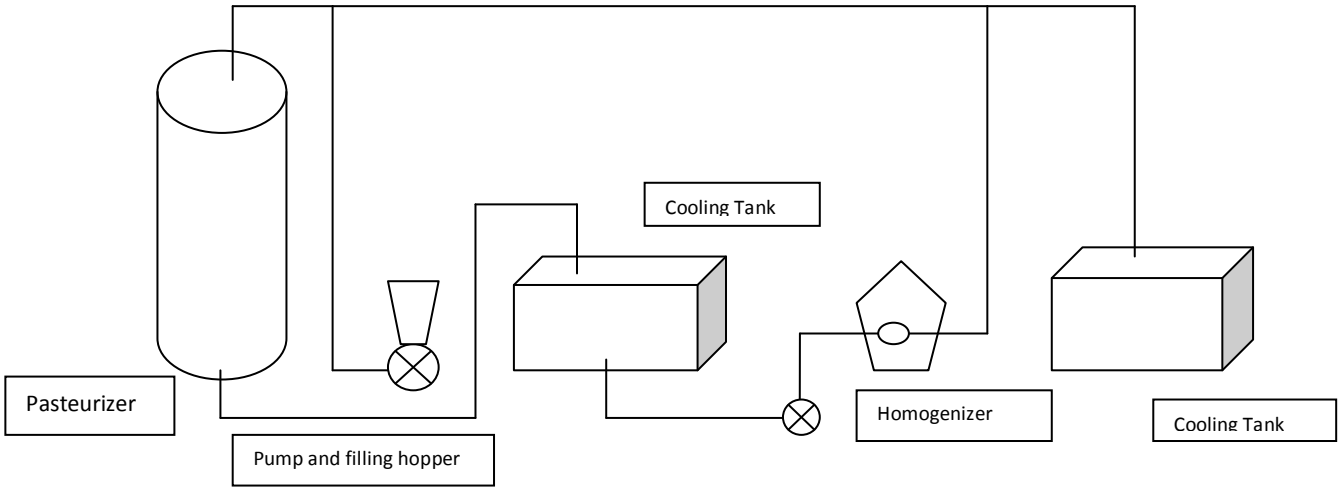
4.5.4 Complaints of an excessively long heating time for the pasteurizer to come up to pasteurization temperature should be investigated for accuracy. As a temporary solution, operationally, the first milk in the morning should be pre-heated in the milk boilers and as further milk arrives, the preheated milk transferred to the pasteurizer. As there is a height difference between the boiler and the pasteurizer, this can probably be done by gravity using a flexible hose.

4.5.5 In order to process any of the suggested products, a homogenizer and a centrifugal pump, and small manual bottle filler will be required. These are off the shelf items and could be supplied relatively quickly. The budget required should be approximately $US20, 000. With the addition of these items, the current equipment configuration, i.e. pasteurizer, and the 2x cooling tanks could be used to process the suggested products. It would be possible to fill bottles of product manually and so delay the purchase of a small filler. I believe that KIDACO would benefit by diversifying their product range. The easiest product to introduce would be flavored milk, which could be chocolate, coffee or fruit flavored. To provide a rationale and justification for encouraging KIDACO to process the product, Land O'Lakes should review sales volumes of flavored milk in Rwanda and evaluate potential sales. Taking into account the processing equipment that will be available, KIDACO's daily production of the product would probably be not more than 1000 l/day.

4.5.6 Land O'Lakes should investigate the availability of government funding for a school milk program and accessing funds which could be used for KIDACO.

Milk Boilers at KIDACO

New equipment in KIDACO



Schematic diagram of possible equipment configuration for processing the suggested products

5. Haji Dairy Enterprises

Date of Visit: 19 March, 2014

Received by: Mr. Haji
Land O'Lakes Staff: Shukura, Cossam, Foreman

5.1 Background

The processing dairy is the core business of a highway services rest area/ stopping place, where there is a busy restaurant and other peripheral sales business offering services to passing travelers. The entire complex is owned by Haji. He also has a roadside shop at another location. The volume of passing traffic pulling into the services is high, so that there is a constant flow of customers throughout the day.

The dairy business is processing 1000 – 2000 litres/day, and employs 20 workers. The products are fermented milk, boiled milk and some ghee. The operations and processes are 'traditional'. Milk is boiled in 20 litre aluminium pots on open fires, transferred to plastic containers and allowed to stand in the yard and cool to ambient temperature. The milk is inoculated with culture and stood until fermented, and then hand-filled filled into 5 litre jerricans.

The procedures are labour intensive, everything is done by hand, and the products are exposed to bacterial and human contamination. Culture is obtained from naturally souring milk, which means that there can be no consistency between production batches.

Milk is bought at 210 RF/litre and sold for 360 RF/litre.

Products are sold in Congo, Burundi and in the local market.

5.2 Opportunities for Haji Enterprises

The constant stream of passing travelers stopping for refreshment, offers an opportunity to sell substantial volumes of ice cream, flavored milk drinks and milk punch.

In the discussion, Haji was clear about his desire to reform his current processing operations and he sees that as his main priority. He would also like to invest in a modern processing line and equipment. As this would call for a major investment I formed the impression that he was unlikely to go that route at this time. I believe that he sees his priority continuing as he is doing now but reforming the daily routines and operations to make them more hygienic and sanitary. It will be difficult to impose new sustainable operating procedures that will substantially change the current hygiene and sanitary status of the operations. The only real way to improve operations is to replace the current methods with an investment in a processing line and equipment.

The subject of ice cream production was discussed at length. Two possible business models were described,

a) The production of ice cream mix, packed in jerricans, to supply shops and restaurants. Counter top ice cream freezers to be purchased and supplied by Haji to his clients on a pay-back loan basis. For the dairy, this would be a low cost straightforward processing operation, as the dairy would only pasteurize the mix, while the freezing stage would take place in the shops and restaurants. Haji would supply the freezers which would be

paid for by the clients over 12 or 24 months, while Haji would be responsible for the maintenance and repairs during the pay-back period.

The processing equipment required for this option is a powder mixer, a vat pasteurizer, a homogenizer, a chilled water system and centrifugal pumps.

b) Haji would purchase a full ice cream processing line to freeze and pack the ice cream finished product. He would also purchase chest freezers and place them with his clients, again on a pay-back loan basis. This option would call for a larger investment.

   Setting up an ice cream process will require investment in a complete ice cream processing line, a powder mixer, vat pasteurizer, a homogenizer, a chilled water system and centrifugal pumps.

5.3 Opportunities for Land O'Lakes

Haji Dairy Enterprises is a substantial business. The dairy processes and practices it currently operates are inadequately protected from secondary contamination. There is an opportunity to provide effective training to reform the operating routines and procedures to make them more secure.

5.4 Land O'Lakes Action Plan and Immediate Interventions

5.4.1 Provide training on operations sanitation and personal hygiene to all staff members. The training should include the topics, elementary dairy bacteriology, milk handling hygiene, the methodology of effective cleaning and sanitization of equipment, personal hygiene, and a review of the chemicals which are recommended for cleaning dairy equipment.
5.4.2 Conduct a review of the chemicals and methods currently being used to clean equipment. Make changes to improve the choice of chemicals and methods, as appropriate.
5.4.3 Write documented operations procedures for all the handling and processing operations. This is best done by forming a focus group of the workers themselves, and in discussion under the leadership of the trainer, discussing and working through what they actually do on a daily basis. The involvement of the workers is essential in this process. Corrections for improvement can then be made to the daily routines. The result becomes a Standard Working Procedure, a document which describes how the work is to be performed, which is then followed by all the workers, following instruction and training. Then appoint one of the workers to become the Quality Manager, whose task will be to ensure that the working instructions are adhered to by all members of staff.
5.4.4 Introduce and support the preparation of documented operating procedures, to protect the integrity of future routine operations.
5.4.5 Re-examine Haji's response to the possible introduction of ice cream processing.
5.4.6 Re-examine possible interest in investment in equipment for a processing plant and re-fitting the entire dairy operations.

1. Zirakamwa Meza Nyanza Dairy

Date of Visit: 20 March, 2014

Received by: Immaculate Kayitesi
Land O'Lakes Staff: Shukira, Cossam, Foreman

6.1 Background

This neat and tidy dairy is processing 500 litres/day, producing yoghurt and fermented milk filled in cups.

Existing equipment includes a milk cooler, a 500 litres vat pasteurizer and a 500 litre incubation tank. There is a cold store, manual cup filler and a foil cap sealer. The water supply is municipal and the capacity of the water storage tank is 2000 litres.

The owner wants to increase the volume of milk processed and expand the business.

6.2 Opportunities for the Processor

Taking into account the existing equipment, we discussed possible strategies for expansion of operations.

To expand operations and increase volumes, this plant will need to invest in additional equipment. We discussed milk punch and ice cream as possible future products, which excited a lot of interest. The business models options were described.

To enable flexibility and expansion of processing operations, the owner of this dairy requires to invest in equipment. In the discussion, the following equipment list was compiled,

a) 2x 1000 l/hr centrifugal pumps, mounted on wheels to enable mobility and multi-use
b) Pipe-work, valves to create a circuit linking present and future tanks
c) Cream separator 500 l/hr
d) Homogenizer 500 l/hr
e) Semi automatic table top cup filler
f) Chilled water system

6.3 Opportunities for Land O'Lakes

This dairy has high potential for a Land O'Lakes support success. The owner is enthusiastic and appears to be a good cooperating partner for Land O'Lakes. Fruit punch and pasteurized ice cream mix would be the chosen products to target. The preferred business model for the ice cream mix should be the option with counter-top freezers supplied and located in the shops and restaurants.

To implement will require investment in some items of equipment, listed above. Not all of this needs to be purchased in the initial stages. To enable the production of milk punches and the ice cream mix, a second 500 litre vat pasteurizer, a homogenizer, 2x centrifugal pumps, pipe-work and valves, and a chilled water system will be required.

The proposed configuration is shown in the accompanying photo.

An Example of an equipment configuration suitable for production of Pasteurized Ice Cream Mix and Fruit Punch is shown in the following photo. The 2 tanks on the left are pasteurizers, and the tank on the right is a cooling tank. Standing between them is a homogenizer. The same configuration can be used to process yoghurt and fermented milk.

This configuration would enable all the suggested products to be processed.

An example of the type of ice cream making machine for placement in retail sales outlets and restaurants is illustrated,

1. Provide hygiene and sanitation training. Though there are no fundamental problems in this dairy, the staff should be included in any workshop training Land O'Lakes provides to other clients.
2. Proceed to request a quotation for the illustrated equipment configuration, minus the milk cooling tank and one vat pasteurizer as these items already exist in the plant. I recommend that you should hire this consultant to do this for you as the technical exchange with suppliers will be extensive. I recommend asking for perhaps 3 quotations for comparison.
3. With the quotations in hand, follow up with the dairy owner to establish her readiness and ability to invest. Obtaining the quotations should not take more than 2 or 3 weeks, so you will quickly be able to establish the willingness of the client to invest and implement, and so know how to position your future relationship this client.

Interior of Zirakamwa Meza Nyanza Dairy

2. Blessed Dairy

Date of Visit: 21 and 22 March, 2014

Received by: Ngirente Milton (Owner), Moses Kioko (Production Manager)
Land O'Lakes Staff: Shukira, Cossam, Foreman

7.1 Background

Established in 2012, this plant processes the following products,

Mozarella, 100-150 kg/week
Gouda, – sometimes
Yoghurt 3.5%, 400-1000 l/day
Cream, 30%, 20 l/day
Low-fat liquid milk 1.5%, 200 l/day

In addition, the dairy collects and sells raw milk to Inyange 16,000 litres/day.
4000 litres of milk is received in the dairy, of which approximate 2000 are processed with remainder being added to the milk sold to Inyange.

The aim is to increase processing volume to 5000 l/day.

Mozarella is sold at 400 RF/kg.

7.2 Opportunities for the Processor

The owner wants to increase processing volumes to 5000 l/day. To do so, the existing processing building must be enlarged as there is no internal space for expansion. Inspection showed that there is sufficient space to build onto the existing building. It will require a major building project. Building expansion and an equipment layout plan was discussed.

The owner impressed that he is committed to expanding the building, and investing in a complete refit of the processing operations, with purchase of equipment and processing lines. As a recipient of the previous Land O'Lakes grant for equipment, he met and knows REMIN/NIKKOS who were the suppliers and who visited the plant. Milton intends to communicate directly with the same supplier and request a quotation for the equipment.

With investment, this plant has the potential to become a significant player in milk processing. The investment required will be substantial. The owner is enthusiastic and ambitious.

7.3 Opportunities for Land O'Lakes

If the owner implements his plan to extend the building and purchase equipment for a refit of the processing operations, then Land O'Lakes can provide close technical support, which would include building and plant design, product processes design, equipment selection, and writing the technical specifications for the purchase tender. Land O'Lakes would provide technical support to the equipment installation and plant commissioning phases, followed by provision of process operating procedures, formulations and dairy technology procedures.

Purchase through tender of a significant quantity of equipment should include a technical inspection at source, at the supplier's premises, before the equipment is packed for shipment. This will prevent delivery of items which have quality issues. Problems must be identified and rectified before shipment. The cost of the inspection should be borne by the supplier.

Writing competent technical specifications for the purchase of the equipment is critical to the success of all purchases of equipment by tender. Failure to prepare technically competent specifications invariably enables unscrupulous suppliers to take advantage of unknowledgeable purchasers by supplying equipment that does not match the tender documents and which is of inferior quality. Examples of this outcome were observed in some of the plants visited during this assignment.

7.4 Land O'Lakes Action Plan

1) Continue to cooperate and technically support the dairy until the owner's intention to invest in expansion of the dairy and its operations has been clarified.

2) Assuming that the intention to proceed with expansion plans is verified, then in cooperation with the owner, draw up a timeline for the project.

3) Cooperate to prepare the list of equipment to be purchased.

4) Prepare and write the technical specifications for tendering the equipment among several possible suppliers.

5) Assist with identifying reliable suppliers and issuing requests for quotations for supply of the processing lines and equipment.

6) Since the equipment purchase will be by direct private contract and not by public tender, Land O'Lakes should provide technical support to the owner in conducting negotiations with the selected supplier(s).

3. Ingabo Dairy Ltd

Date of Visit: 24 March, 2014

Received by: Andre Rwayitare
Land O'Lakes Staff: Shukira, Cossam, Foreman

8.1 Background

This processor is currently processing up to 2000 litres/day, producing cheese and flavored yoghurt. Cheese is sold in one kilogram and half kilogram blocks. Strawberry and vanilla yoghurt 3.5% fat content, is packaged in 250 ml cups and 500 ml bottles.

A grant request to Land O'Lakes has been submitted. The equipment listed in the request is,

HTST Pasteurizer, 1000 l/hour
Cooling tank, 2000 litres
Semi-automatic cup filler
Butter churn
Cream separator

To make the plant processes viable, there will be an urgent need to also purchase a homogenizer 1000 l/hr, and a chilled water system. Additional equipment items that will be required are 2x product tanks, centrifugal pumps, pipes and valves. These items have not been listed in the current grant request. The owner expects to purchase these items himself.

The owner is currently constructing a building to house the dairy plant, which reportedly will be completed in July.

8.2 Opportunities for the Processor

Expansion of the current operations by establishment of a complete plant will enable to processor to significantly increase his business operations and sales.

The owner envisages processing 4500 litres/day,
500 litres for production of butter
2000 litres for Gouda, Mozarella and Ricotta cheeses
1000 litres for Flavored yoghurts
1000 litres for Fermented milk

8.3 Opportunities for Land O'Lakes

Expansion of the processing plant and continuing support given to this processor will increase the volume of milk processed. Increased sales and greater product diversibility will create a business hub centered on the processor's business activities with ultimate benefit to consumers, and to local businesses as suppliers of inputs to the business.

8.4 Land O'Lakes Action Plan

1) Discuss with the owner his ability to fund from his own resources the additional equipment which has not been included in his grant request.

2) With due care being taken in the preparation of the technical specifications for tendering the purchase of the grant equipment, an additional requirement specific to

this processor would be to include in the same tender, the additional equipment to be funded by the owner in the tender. In this way the tender will be for a complete processing line of compatible equipment items from the same supplier. This is a priority. Failure to do it this way will inevitably lead to incompatibility between the items purchased under the grant and the items purchased by the owner.

3) As mentioned elsewhere in this report, Land O'Lakes should hire a technical dairy consultant to conduct the negotiations with the supplier. This will ensure that the design and quality of the equipment delivered, is as requested and expected.

4) Following installation and commissioning, Land O'Lakes should provide technical support to the processing and business operations.

4. Muhe Farm Cheese Factory

Date of Visit: 25 March, 2014

Received by: Danny Twagiramungu
Land O'Lakes Staff: Shukira, Cossam, Foreman

9.1 Background

This plant, located in the Gitwachi mountains region, currently processes approximately 1000 litres/day to produce Gouda cheese. The plant has received a pasteurizer, a cheese press and a cheese vat from the Land O'Lakes grant program. The equipment has not yet been utilized, and is standing in storage. There is no mainline power supply to the region and the generator installed in the milk collection center is underpowered and cannot provide the power required for the new pasteurizer. A grant request has been approved by Land O'Lakes for supply of a larger generator.

The equipment, pasteurizer, cheese press and cheese vat, provided by Land O'Lakes under the grants program is in storage at the site.

The owner is enthusiastic and determined to expand his business operations. When the new equipment becomes operational, his processing plan is to produce Mozarella, Cheddar and Camembert cheeses, yoghurt and fermented milk.

9.2 Opportunities for the Processor

When the new equipment has been commissioned, the processing volumes predictably will increase, and evening milk will be utilized. At present, the MCC does not have a solution for evening milk and consequently the farmers lose this income.

Benefits to the business and consumers will come from increased processing volumes and sales.

The owner envisages having his products recognised by the Seal of Quality certification.

In the discussion, I suggested that Fetta cheese should be added to the product mix. As a brined cheese, it is saleable immediately without a ripening requirement. This would improve the cash flow through the business. The owner agreed that this would be beneficial, and requested a process description.

9.3 Opportunities for Land O'Lakes

This is an attractive project which merits close support. The owner is competent and dedicated to his own success. The level of effort required is relatively little and the 'success' benefits to Land O'Lakes appear to be assured. Land O'Lakes should proceed to provide solutions to the issues that are preventing full utilization of all the resources available.

9.4 Land O'Lakes Action Plan

1) We discussed with the owner the siting of the new generator. There appear to be a couple of options and these need to be clarified, and then a concrete bed and housing for the generator prepared.

2) Immediate purchase of the generator should proceed.

3) It will be necessary to provide a competent electrician to connect and supervise the generator installation.

4) In the cheese vat there are various peripheral items, including the power control box. A request should be made to REMIN for drawings and instructions on these should be connected. As things are at the moment there is no clear idea of how the equipment should be connected and installed. Clarifications should be requested from the supplier REMIN.

5) When the equipment has been installed, Land O'Lakes should consider hiring the cheese-making expert Mr. Kobus Molder, to return for a second visit to review and instruct on the cheese making procedures.

5. Conclusions

It is evident that there is considerable variability in the capacity and ability of the processors. Underlying, there is a general lack of technical expertise and understanding of dairy processing issues. As there is no homogeneity in the issues each one faces, from Land O'Lakes' viewpoint each processor requires individual support on the issues specific to his/her business. The level of input which needs to be provided is indicated the following table.

KIDACO	To make substantial improvements in the business and processing operations will require substantial LoE from LOL. This is probably the most 'difficult' client for LOL in the entire group.
Haji Dairy	The owner's commitment and intention to undertake a reform of the processing operations remains unclear. Substantial and sustainable improvements to product quality will be difficult to implement in the current processing operations environment. To implement significant change requires investment by the owner to upgrade the processing equipment.
Zirakamwa Meza Nyanza Dairy	With future provision of additional equipment, this dairy has the potential to become a successful business. It hs the potential to become a good partner for LOL.
Blessed Dairy	If the owner proceeds to invest in expansion of the building and processing operations, then LOL will have the opportunity to provide substantial technical support and become deeply involved in the implementation of the improvements. This is a good client for LOL.
Ingabo Dairy	This processor is currently constructing a new dairy building. He intends to buy additional equipment and is enthusiastic about expanding his business. This is a good client for LOL.
Muhe Farm Cheese Factory	This processing business has lots of potential for success. With LOL support there is a high probability that this will be a success story.

Media Coverage of the dairy sector

Story 1: Milk exports surpass coffee

- By Peterson Tumwebaze
- March 23, 2014

Unprocessed milk at a collection center. (File)

Milk emerged the main source of export revenues during the fourth quarter of 2013, surpassing coffee, the country's traditional major foreign exchange earner, for the first time.

Figures released by the National Institute of Statistics Rwanda on Friday show milk and milk products brought in $22.41 million (about Rwf15.5 billion), against $17.88 million brought in by coffee.

Export of minerals such as niobium, vanadium ores, tantalum and concentrates also performed well fetching $21.59 million during the same period.

Experts have attributed increased milk exports to the country's Girinka project and increased finances injected into the sector.

Burundi, DR Congo and Tanzania are the leading export destinations for Rwandan milk and milk products—consuming about 15,115 kg per year

Frank O'Brien, the Rwanda Dairy Competitiveness Programme chief of party, said a lot of progress had been made by the sector over the years; through implementation of government and donor-funded milk projects, including Land O'Lakes, a USAID-funded project.

There is a lot of progress being made towards improving dairy farming such as establishment of quality milk infrastructure like milk collection centers and cooling equipment. This has improved the quality of milk and made it more profitable in regional markets.

Andrew Kagabo, the Girinka programme national co-coordinator, said this year the project planned to distribute over 4,000 cows .

"This will further boost milk production and ultimately exports," Kagabo said

Figures from Rwanda Agriculture Board indicate that Rwanda's milk production has increased by 11 per cent over the past two years.

Revenue from coffee exports declined primarily because Rwanda's coffee season starts in March and gradually winds down towards the end of the year. However, coffee prices also fell last year to as low as $2 per kg of processed coffee due to a weak global demand and a glut in the world's leading coffee producer, Brazil.

However, officials at the National Agriculture Export Board are optimistic about a rebound in coffee prices due to a decline in Brazil's coffee supplies this year.

"Unlike last year when the industry did not perform well, we are predicting a good result this year with annual total production increasing to more than 25,000 tonnes," George William Kayonga, NAEB Director-General, told The New Times on the sidelines of a coffee research symposium in Kigali on Monday.

Trade deficit widens

Meanwhile, Rwanda's trade deficit has widened to $ 564.6 million during the last quarter of 2013 compared to $689.3 million during second quarter of the year. The country imported goods worth $415.5 million while exports fetched $121.5 million.

Figures show that the economy earned $27.6 million from re-exports to neighbouring countries—reflecting 9.77 per cent increase in imports in current price terms. The country's

main re-exports during the fourth quarter of 2013 were petrol which fetched $6.25 million, gas oil $6.02 million and kerosene type jet fuel $5.50 million.

Imports from China were the highest in value registering $87.69 million followed by imports from Uganda which consumed $52.59 million and India $39.28 million.

Cement and mobile cell phones remained the two main imports during the period costing $17.68 million, and $14.53 million respectively.

- 17
-

Comments

Import subsitution always beds the secret to make a country economy take great hights.Great to see Rwanda capitalising on the great lakes region in terms of trade.

07:17:50 Sunday 23rd, March 2014 Oceania - Earthdoctor

Reply | Close

This story is a manifestation of the potential of the dairy subsector and credit must be given to the efforts invested over the last several years..deeper investigation of this development is needed. Dairy farmers and other stakeholders must appreciate that dairy is the gold mine in the making for Rwanda and go for it sustainably. Thumbs up to girinka and related programs.

21:19:09 Sunday 23rd, March 2014 kigali - Dennis

Reply | Close

Amazing! More milk needed for Congo Braza, Gabon and elsewhere.

00:34:54 Monday 24th, March 2014 USA - Bigwi

Reply | Close

Story 2: Editorial

Address challenges facing dairy industry

- The New Times
- March 05, 2014
-

ISSUES OF poor quality control along the milk supply chain keep coming up all the time. This is a serious concern considering that milk is an essential component of the government's drive to improve nutrition among households. The dairy sector is expected to play a major role in as far as achieving the objectives of the second phase of the Economic Development and Poverty Reduction Strategy (EDPRSII) is concerned.

As such, all stakeholders need work together and solve these challenges that might compromise milk quality. That's why upstream and downstream stakeholders in the dairy industry need to collaborate and support each other to make sure that the final consumers get safe product. This should be the starting point to prevent a bad situation from getting worse. Of course, the sector being predominantly informal, presents a lot of challenges. These problems can only be eliminated through collaborations between farmers and milk dealers, as well as policy-makers and enforcers. The dairy development authority could step in, but it cannot be everywhere all the time, meaning that self-regulation is always the solution in such situations.

It should now be every dairy farmer's or dealer's responsibility to ensure high standards while handling dairy products.

However, the dairy authority should see to it that the necessary safeguards are in place to support efforts of individuals and organisations that are doing everything possible to ensure the sector is vibrant.

Like they say, 'together we can do more'.

Comments

Thank you NewTimes Editorial for bringing such key issues to the attention of your readers, yes, combined efforts will takes us further forward!

10:55:19 Wednesday 05th, March 2014 Nyarutarama - Dennis

Story 3: Lack of adequate quality controls affecting dairy sector - expert

- By Peterson Tumwebaze
- March 04, 2014

Poor enforcement of quality standards affecting dairy sector. The New Times / Peterson Tumwebaze

The local dairy industry has over the years undergone transformation that has seen milk volumes increase compared to 10 years back. However, these volumes are still low to sustain market demand; and the industry also faces problems of quality along the supply chain that is attributed to poor facilities.

Frank O'Brien. The New Times / Peterson Tumwebaze

Peterson Tumwebaze talked to **Frank O'Brien**, the **Rwanda Dairy Competitiveness** programme chief of party, about these issues and how the industry can be boosted to help improve household incomes:

What is Rwanda Dairy Competitiveness Programme all about?

Rwanda Dairy Competitiveness Programme II (RDCP II) is a five-year project that started in 2012 and ends in 2017. It is being implemented by Land O'Lakes International Development.

The project focuses mainly on improving the production and marketing of quality milk among smallholder farmers to reduce rural poverty, improve nutrition and increase employment.

We have so far spent Rwf224m (about $302,000) on infrastructure improvement in the country, especially helping milk collection centres, dairy processors and small-and-medium enterprises to improve quality along the value chain.

The industry has recently been under scrutiny for producing contaminated products; how can this situation be avoided?

Milk is a highly perishable product, whose shelf life is dependent on how it is handled at different levels of the supply chain. For instance, raw milk goes bad within two hours, if not properly chilled, meaning there's a big probability for most of it to be wasted. This implies farmers and dealers will lose income, which presents stakeholders in the value chain a challenge that must be addressed to make the sector more productive.

Currently, there is a general lack of enforcement of raw milk quality standards. This affects the sector's growth and makes some potential investors hesitant to put money that could have helped transform the industry.

How can the problem of price fluctuation be addressed?

This challenge can partly be resolved by establishing stable working relationships and creating mutual understanding among farmers and milk buyers. Working through co-operatives and milk collection centres helps farmers to aggregate their milk into sizeable quantities that can be traded more easily. Milk collection centres and co-operatives should aim to secure better contracts with reliable buyers based on mutual trust and integrity.

Co-operatives need to ensure consistent volumes to secure reliable buyers who can pay a premium rate. Farmers should be impressed upon the importance of meeting both the quantity and quality expectations of buyers.

Have you made any progress in addressing these challenges as a platform for dairy farmers?
A lot of progress has been made over the years through implementation of government and donor-funded projects, including Land O'Lakes, which aim at improving milk production at the farm level.

The current project is building on this progress through an increased focus on improving the dairy sector infrastructure at milk collection centres by enhancing the holding and cooling equipment at these centres to ensure quality.

The dairy industry has the potential for improving people's livelihoods; however, critics say stakeholders are not co-ordinated. How can this issue be solved?
Like many other sectors in Rwanda, the dairy industry is predominantly informal, with the majority of business conducted outside the formal regulatory framework resulting in what you might describe as a disorganised sector.

The government has been working to regularise businesses through a formal registration process to guarantee that the sector comply with set standards and do business in an ethical manner.

The dairy industry is no exception to this effort, and we have already seen substantial progress in this regard.

Efforts are underway to form an industry platform with representation of all players along the value chain, including producers, processors, retailers, consumers and service providers all of whom contribute to the growth of the sector. This will provide the industry with both leadership and an advocacy platform that is currently lacking.

What's the programmes' long-term strategy for the sector?
The Rwanda Dairy Competitiveness programme's vision is to reduce poverty through expanded marketing of quality milk.

This we hope will boost households' income, create more jobs and improve nutrition of rural households. The project also aims to improve the competiveness of Rwandan dairy products in the region.

The project will continue to support the Rwandan government's goal of increasing milk consumption from 40 to 80 litres per person a year in support of the National Dairy Strategy and nutrition goals. But this will be subject to improved productivity of the dairy sector, better logistical infrastructure and changes in consumers' preferences.

Contact email: business[at]newtimes.co.rw

Comments

Like Mr. O'Brien says its difficult to monitor the whole milk supply chain. Raw milk quality is determined at the farm. Microbial contamination takes place during milking, milk containers/utensils, storage etc.

Some farmers may not even wash their hands before milking. But there are options for quality control at the milk collection centers.

I understand the key quality parameters are measured at the milk collection/cooling centers. Culprits can me monitored and advised on better hygiene practices.

14:17:19 Tuesday 04th, March 2014 UNIVERSITY OF RWANDA - MUNANURA JAMES

Reply | Close

Story 4: KCB Rwanda unveils credit facility for dairy farmers

- By Stephen Rwembeho
- March 31, 2014

A farmer feeds his cattle. The KCB funding will enable farmers like him get finance for their operations. (Internet photo)

Dairy farmers have reason to smile after Kenya Commercial Bank Rwanda unveiled a new loan product aimed at improving the sub-sector.

Alex Bizimana, the KCB Rwanda agri-business department manager, said the credit facility will help farmers improve the productivity of the dairy industry and the milk supply chain.

Bizimana was speaking at the launch of the facility in Rwamagana District in the Eastern Province on Thursday. The function was attended by members of various dairy farmers' co-operative societies.

Bizimana pledged the bank's support to help farmers get better milk buyers.

Dairy farming is the major source of livelihood for most people in the Eastern Province, especially small-holder farmers, with over 80 per cent of rural households depending on the sector.

"Our primary focus is to help increase milk output... This credit facility will support long-term, as well as short-term investments in the dairy industry through funding tailored to the sector's needs," Bizimana said.

He noted that when farmers' access sustainable sources of finance it boosts their negotiating power and reduces costs.

“The loans will enable farmers to buy vehicles to transport milk to processing plants. This will allow farmers to transport milk at any time of the day instead of waiting for dealers to collect it,” he added.

The Rwamagana District vice-mayor in charge of economic affairs, Francisca Mutiganda, said as the economy improves and incomes grow, demand for milk and milk products will rise.

She noted that to meet this demand, dairy farmers must increase milk production.

“To meet the growing demand for milk and accelerate dairy sector development in the country, it is necessary to have such assurance of financial support. Besides improving cattle productivity, it strengthens milk marketing infrastructure at the village level and enhances milk processing capacity,” she said.

Joseph Gasasira, a farmer in Rwamagana District, said the bank’s initiative was a timely boost that will benefit a number of farmers.

“Dairy farming is a costly activity that requires reliable income to operate profitably. For instance, buying farm inputs, medicine and transporting milk calls for one to have sustainable funding. So if KCB has created a facility for dairy farmers, that is great news,” he said.

Contact email: stephen.rwembeho[at]newtimes.co.rw

Story 5: USAID in milk quality drive

Friday, March 21st, 2014

- English, featured

- no comments

In a bid to improve the quality and standards of milk produced in Rwanda, the United States Agency for International Development (USAID) has sponsored training officers who will ensure standards are met.

At least 14 veterinarians from across the country completed a-10-day training on clinical milk microbiology, courtesy of Rwanda Diary Competitiveness Program II (RDCPII) a USAID sponsored project in collaboration with experts from the University of California-Davis (UC Davis).

The trainees graduated with certificates equivalent to 1 year of training.

Rwanda currently has a challenge of producing quality milk to meet the international standards. Though Rwanda is known as country of milk, and has about 1.3million cows-which produce over 2million litres of milk on a daily basis, Rwanda still depends on imported milk from its neighbors-Uganda and Kenya.

Only five percent of the total milk collected is processed through the existing five milk collection centers in the country. That means that the rest of the milk is not able to reach the main processing outlets and possibly doesn't meet the standards of the factories.

In order to tackle this problem, the Director General of Rwanda Agricultural Board (RAB), Prof Jean Jacques Mbonigaba Muhinda, says that there are two main challenges especially- the quality and productivity of milk that need to be addressed in order to improve the milk standards in Rwanda..

International standards

International milk export standards (based in the EU and US) require milk to have at least a 5log CFU/ml. Rwanda has slightly above that average mark, and need to reduce the level to the international standards.

The UC Davis representative, Prof Raymond Rodriguez said that he was optimistic that the training would impact on the practices of the Rwandan veterinarians and be in position to disseminate the skills to others.

“It is going to be a challenge for Rwanda to put the methodology of Diary Dynamics Management into practice, but I am confident that Rwanda can do it. If this is met, the whole world market will come to Rwanda and everyone will be asking how you (Rwanda) did it” he said.

The Chief of Party of RDCPII/USAID, Frank O’Brien says that the next stage of this training will be field based activities where students will carry out field sampling from dairy farmers and milk samples will be monitored periodically.

“It’s our hope that this farmer outreach program can be adopted in Vet schools because they have the potential to transform the milk quality and allow Rwanda to become a milk hub, it deserves to be, in this region” O’Brien said.

Rwanda Bureau of Standards (RBS) Director General, Dr. Mark Cyubahiro, agrees that Rwanda can meet these standards but suggests that there is need to a continued collaboration with the experts from UC Davis to have capacity building especially technical assistance to overhaul the education curriculum in the newly established institutions now under the University of Rwanda.

Dr. Jean Pierre Muganga, who also benefited from the training, says that the practical aspects of some of the knowledge imparted in students are lacking and such a s training has been an eye opener to his job.

“I have realized that we need to include such trainings in our syllabus because even as a teacher, I have only had theoretical knowledge, but the practical aspect of clinical milk microbiology is needed if we are to impact on the standards of milk” Dr. Muganga said.

Story 6: Amata yabonye gitereka, aborozi babyinira ku rukoma

Yanditswe kuya 17-01-2014 - Saa 08:41' na Deus Ntakirutimana

Aborozi bo mu karere ka Gicumbi no mu turere dutandukanye tw'u Rwanda banyuzwe no kuba umusaruro wabo w'amata wapfaga ubusa ubu ubatunze nyuma yo gufashwa n'umushinga wo guteza imbere amata n'ibiyakomokaho mu Rwanda (RDCP), icyiciro cyawo cya kabiri.

Aborozi bo mu turere 15 tugize u Rwanda barimo gufashwa kubona ubwiza bw'amata, kongera umusaruro no kubona amasoko y'uyu musaruro.

Ibi bikorwa byo kunoza iby'inzu zitunganyirizwamo amata, kuyatunganya no gufasha amashyirahamwe mato na za koperetive zita kuri aya mata kwiyubaka byagenewe miliyoni 183 z'amafaranga y'u Rwanda.

Ni muri urwo rwego mu duce dutandukanye tw'igihugu, RDCP (umushinga wo guteza imbere amata n'ibiyakomokaho mu Rwanda), uterwa inkunga n'ikigo cy'Abanyamerika kigamije iterambere mpuzamahanga "USAID" wagiye utanga ibikoresho by'ubuziranenge bw'amata mu turere dutandukanye tw'igihugu.

Kuwa Kane tariki ya 16 Mutarama 2014, ibikoresho by'ubuziranenge bw'amata byahawe koperative ya IAKB ikusanya amata mu karere ka Gicumbi, byatashywe ku mugaragaro, ababihawe bishimira aho bavanwe.

Kagenzi Stanislas, Visi Meya ushinzwe ubukungu muri Gicumbi hamwe na Visi Perezida wa Land O' Lakes International ku Isi, Jon Halverson

Twine Datien, ushinzwe umutungo w'iyi koperative yavuze ko umushinga wa RDCP wabafashijwe cyane kuko ubu bagaragaza ubwiza bw'amata kandi bagafasha n'aborozi kubona amasoko no kongera umusaruro.

Yagize ati "Buri munsi dutunganya litiro ibihumbi 23, twaboneye isoko, aya mata tuyavana mu mirenge yose igize akarere ka Gicumbi, aborozi bacu harimo abari barabuze isoko ry'amata ariko ubu turabafasha, yewe n'abamburwaga byarahagaze".

Si iyi koperative yonyine yahawe ibikoresho kuko n'izo mu zindi ntara zagiye zibihabwa, sosiyete ya Blessed Dairies limited nayo yahawe ibikoresho biyifasha kwita ku buziranenge bw'amata.

Harerimana Milton ushinzwe imari muri iyi sosiyete yavuze ko ubu yunguka amafaranga ahwanye na 5% yajyaga itakaza kubera amata yacuruzaga iyahawe n'iyi koperetaive ariko atujuje ubuziranenge akenshi bitewe nuko yafatwaga.

Yagize ati "Akenshi twayagezaga ku ruganda rukatubwira ko atujuje ubuziranenge, kubera kuyatwara mu bicuba, ntuzi uko byogejwe, ntuzi isuku yabyo, yashyushye yapfuye n'ibindi".

Aya mafaranga bungutse ngo ari mu ngendo bajyaga bakora imodoka nyinshi bakoreshaga kubera ko ibicuba bitwara litiro nke ariko ngo RDCP yabahaye siterine (citerne) ijyamo litiro ibihumbi 8 inshuro imwe, ku buryo kugemura litiro 20 ku munsi basanzwe bagemura byaboroheye.

Kwita kuri ibi bikorwa birimo gushyirwa mu bikorwa n'umushinga wa Land O'Lakes International Development , ni umushinga uzamara imyaka5, ukaba ufashwa n'abaturage bo muri Leta zunze ubumwe za Amerika zibumbiye muri USAID.

Mu bandi bamaze guhabwa ibi bikoresho harimo, Haji Saidi Havugimana umenyerewe mu karere ka Nyanza yavuze ko anyuzwe n'ibi bikoresho kandi ko bizamufasha gukomeza kwita ku buziranenge bw'amata, akazanongera ingano yayo.

Umuyobozi wa RDCP mu Rwanda, Frank O'Brien yavuze ko uyu mushinga ugamije kurwanya ubukene no kunganuira abaturage muri byinshi yarondoye.

Yagize ati “Uyu mushinga ugamije kurwanya ubukene, biciye mu gukwirakwiza hirya no hino amasoko y’amata, abayacuruza bakabona inyungu , bagatanga akazi gatubutse, kandi agafasha kunganira imirire cyane mu bice by’icyaro.”

Visi perezida wa Land O’ Lakes International ku rwego rw’Isi, Jon Halverson yasabye abo bafashije kuzegera abandi borzoi bakita ku buziranenge bwayo kandi bakita ku bucuruzi bwayo kuko buzabavana mu bukene, bakanoza koperative baba inyangamugayo, no kuyifashisha mu kurwanya imirire mibi.

Uyu mushinga uzakomeza ibikorwa byawo byo kuzamura urwego rutanga amata kugeza muri Mutarama 2017, watangiye muri 2013. Mu bikorwa byawo unashishikariza abagore kwiteza imbere aho unatera inkunga za koperetive zawo zifite aho zihuriye n’ibikorwa byo kwita ku mata.

Za koperative n’amasosiyete bimaze guterwa inkunga birimo Milk Collection Center yo mu Bugesera, muri Gatsibo ni MUDACO, Gasabo ni Angeana Fresh Dairy Limited, Gicumbi ni IAKIB ; Huye ni Vetoprox na Kidaco, Nyabihu hafashijwe Muhe farm, Nyagatare ni NADCO, Rubavu haza Coderu na Fromagerie la Reine, mu gihe muri Rulindo ari CSTOR, Rwamagana hakaza Ndukundamatungo, CODELU na COOPAG.

List of Participants

Resource Persons:

1. **Dr. James Cullor**, Professor and Director, Dairy Food Safety Laboratory, School of Veterinary Medicine, University of California, Davis (jscullor@ucdavis.edu).

2. **Dr. Raymond Rodriguez**, Professor and Executive Director, Global HealthShare Initiative, Department of Molecular and Cellular Biology, University of California, Davis (rlrodriguez@ucdavis.edu).

3. **Dr. Somen Nandi**, Managing Director, Global HealthShare Initiative, Department of Molecular and Cellular Biology, University of California, Davis (snandi@ucdavis.edu).

4. **Ms. Sara Garcia**, Graduate Student Researcher, Dairy Food Safety Laboratory, School of Veterinary Medicine, University of California, Davis (sargarcia@ucdavis.edu).

5. **Ms. Marissa Simpson**, Microbiologist, Veterinary Medical Teaching Hospital, School of Veterinary Medicine, University of California, Davis (msimpson@ucdavis.edu).

6. **Mr. Frank O'Brien**, Chief of Party, RDCP II, Land O'Lakes Inc. (frank.obrien@idd.landolakes.com)

7. **Dr. Dennis Karamuzi**, Deputy Chief of Party, RDCP II, Land O'Lakes Inc. (dennis.karamuzi@idd.landolakes.com).

8. **Mr. Shukuru Bizimungu**, National Milk Quality Specialist, RDCP II, Land O'Lakes Inc. (shukuru.bizimungu@idd.landolakes.com)

9. **Dr. Savino Biryomumaisho**, Senior Scientist, Animal Health, Directorate of Veterinary Services-Rwanda Agriculture Board (RAB), Kigali-Rwanda (biryomumaisho@yahoo.com)

Trainees:

Group # 1

1. **Mr. Mupenzi David**, Managing Director, Dairy Quality Assurance Laboratory (DQAL), Kigali, Rwanda (dqalservices@gmail.com)

2. **Mr. Jean Paul Lukusa**, Microbiologist, Gorilla Doctors, UC Davis Wildlife Health Center. Musanze district, Rwanda (jp.lukusa@gmail.com)

3. **Ms. Vestine Musanayire**, Bacteriology specialist, Rwanda Agriculture Board (RAB) Veterinary Laboratories, Rubirizi-Kigali, Rwanda **(this participant will also double as a resource person during the practical sessions)** (vestinem@gmail.com)

4. **Ms. Murungi Agnes**, Laboratory Technician, Rwanda Agriculture Board (RAB) Veterinary Laboratory, Eastern Province Satellite, Nyagatare District, Rwanda (murungiagnes01@gmail.com)

Group #2

5. **Mr. Ngabo Gasana Methode**, Serology Specialist, Rwanda Agriculture Board (RAB), Kigali, Rwanda (ngagasa@yahoo.fr)

6. **Mr. Bonaventure Hakizimana**, Laboratory technician, College of Agriculture, Animal Science and Veterinary Medicine (CAVM) (**Former ISAE**)-University of Rwanda, Busogo Campus, Musanze district, Rwanda (hakibona@gmail.com)

7. **Mr. Alphonse Mbabazi**, Microbiologist, Rwanda Bureau of Standards (RBS), Kigali- Rwanda (mbabazialphonse@yahoo.fr)

8. **Mr. Emmanuel Bahati**, Milk Quality control, LOL, RDCP II, Kigali, Rwanda (emmanuel.bahati@idd.landolakes.com)

Group # 3

9. **Dr. Ndazigaruye Gervais**, BVM, Assistant Lecturer, University of Rwanda, School of Animal Sciences and Vet Med (former Umatara Polytechnic), Nyagatare Campus, Nyagatare district, Rwanda (shemagervais@yahoo.com)

10. **Mr. Habimana Isaie**, Laboratory Technician, Rwanda Agriculture Board (RAB) Veterinary Laboratory, Southern Province Satellite, Huye District, Rwanda (ihhabibu@gmail.com)

11. **Ms. Tumusiime Margret**, Lecturer/Lab Director, University of Rwanda (former Umatara Polytechnic), Nyagatare Campus, Nyagatare district, Rwanda (tumumarg@yahoo.com)

Group #4

12. **Dr. Ntampaka Pie**, BVM, Tutorial Assistant, University of Rwanda, School of Animal Sciences and Vet Med (**former Umatara Polytechnic**), Nyagatare Campus, Nyagatare district, Rwanda (piusynt@gmail.com)

13. **Mr. Jean Paul Muvunyi**, Laboratory Technician, Rwanda Agriculture Board (RAB) Veterinary Laboratory, Western Province Satellite, Rubavu District, Rwanda (pauljmuv10@yahoo.fr)

14. **Mr. Muganga Jean Pierre Mpatswenumugabo (Pierre)**, Assistant Lecturer, College of Agriculture, Animal Science and Veterinary Medicine (CAVM) (Former ISAE)-University of Rwanda, Busogo Campus, Musanze district, Rwanda (mugajpierre@yahoo.fr)