



S P E E D

Support for Private Enterprise Expansion & Development

**SURVEY OF DAIRY MARKETS IN KENYA AND RWANDA
AND OPPORTUNITIES FOR UGANDAN EXPORTS**

Submitted by:
Chemonics International Inc.

Prepared by:
Frank Olok-Asobasi
Dr. Mohammed Sserunjogi

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Survey of Dairy Markets in Kenya and Rwanda and Opportunities for Ugandan Exports

A. Introduction

Agriculture is the backbone of the Ugandan economy and contributes more than 60 percent of the gross domestic product. To increase and sustain the growth of Uganda's agriculture, its various subsectors need to be strengthened, particularly its dairy industry.

Uganda's dairy industry has good potential, but various constraints have limited its full development. Some of the major constraints include poor animal productivity and low milk quality, as well as inefficient milk-handling and processing, management, and marketing procedures. To improve Uganda's dairy industry, a large infusion of capital is needed. However, commercial banks, processors, farmers, and other major stakeholders need to be assured that Uganda's dairy products will have a market before they will invest in the industry.

The Support for Private Enterprise Expansion and Development project (SPEED) brought together key stakeholders in Uganda's dairy industry to form the Dairy Business Working Group. SPEED is a USAID project set up to support economic growth through the increased use of financial services by small- and medium-sized enterprises. The working group asked Chemonics to conduct a market survey of the local and regional markets of Uganda's dairy industry. The findings of the survey were to form a basis for developing programs and policies to boost the Ugandan dairy industry locally and in the region.

A1. Objectives

To assess the market potential of the dairy industry in the region and identify market opportunities and requirements for Ugandan dairy products, the Chemonics team:

- Investigated the main milk-shopping patterns
- Determined the factors that influenced milk-shopping patterns
- Determined brand awareness and perceptions of each brand
- Identified usage patterns
- Determined consumer preferences
- Assessed export potential

A2. Survey Areas

To conduct the survey, the Chemonics team collected information in Nairobi, Kenya, and in Kigali, Rwanda, the major markets for each country's dairy industry and the cities in which each country's milk-processing plants are concentrated. The survey was conducted from July 21 to July 23, 2001, in Kigali and from June 26 to June 29, 2001, in Nairobi.

A3. Organization of Report

Survey results for Kenya and Rwanda are presented in Sections B and C respectively of this report, and Section D looks at the implications of the survey results for the dairy industry in Uganda.

B. Kenya

B1. Methodology

Employees and consumers at the following locations were interviewed and asked to complete questionnaires:

- Tetra Pak, a supplier of milk processing and handling equipment and packaging
- Spin Knit Dairy Plant and Land O' Lakes (Kenya)
- Kiosks, through which 80 percent of the fluid milk is marketed
- Hypermarkets (*uchimi*)
- Retail shops (*duka*)
- Wholesale outlets
- Processor depots
- Milk shops (where customers can sit and drink milk and also buy various milk products)

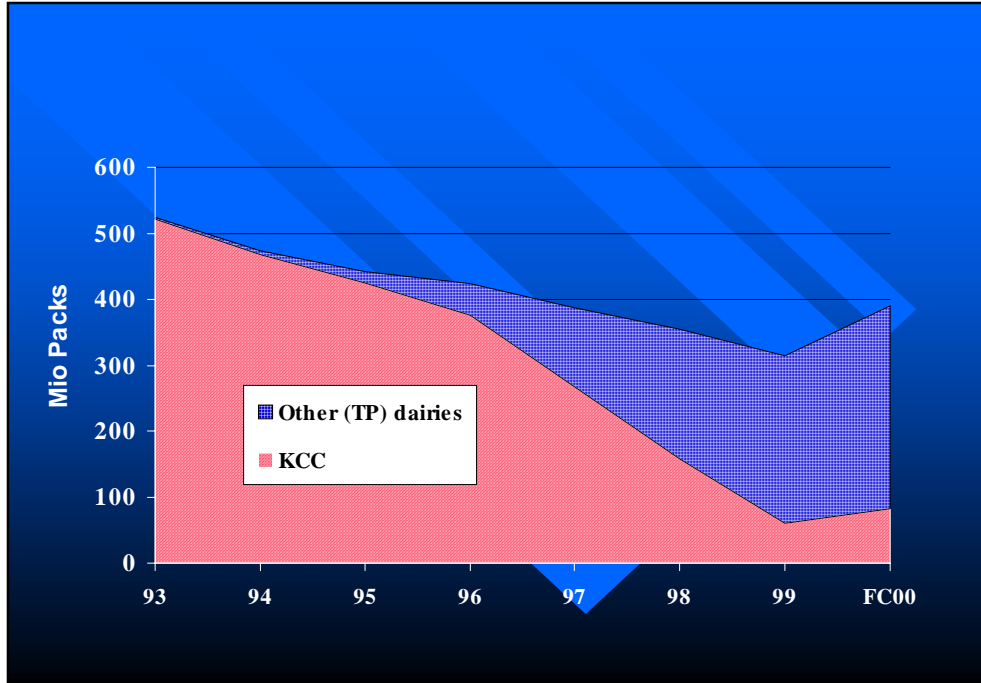
B2. Milk Production and Processing

More than 60 percent of Kenya's milk comes from dairy cows (improved breeds) and only 25 percent from Zebu cows (indigenous breeds). The high production of dairy cows makes bulk milk-handling feasible, which in turn makes quality assurance at the farm level easier.

Until the 1990s, the Kenya Creameries Corporation (KCC) processed all the milk in Kenya. Between 1993 and 1996, KCC's monopoly slowly decreased. From 1996 to 1999, KCC's market share declined sharply. Private processors, who joined the dairy business in incremental numbers after the liberalization of the dairy business, partly made up the gap between supply and demand. Since 1999, private sector participation in the milk-processing industry has increased greatly, with more than 18 processors operating today. Nevertheless, less processed milk is being produced than before the decline of KCC's market share.

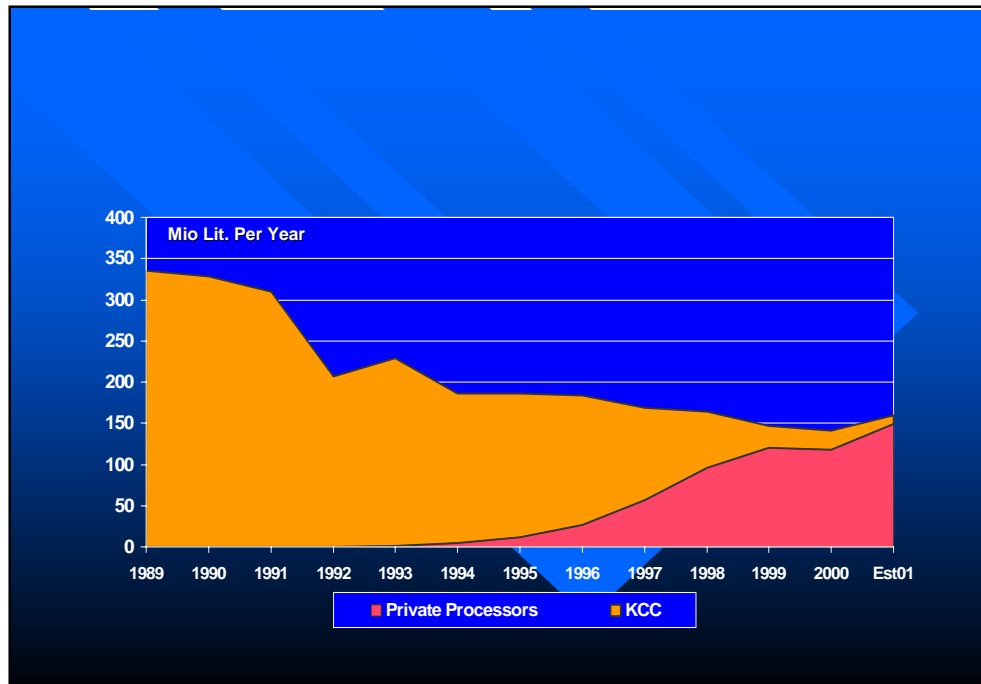
KCC processing capacity declined from 1 million liters per day about 10 years ago to 35,000 liters per day in 1999. As shown in Figure 1a, the overall production by all processors has not reached KCC's peak level a decade later. Assuming that the Kenyan population has grown at a conservative 2.5 percent per year and that consumption patterns for processed milk have changed little, current demand exceeds supply by more than 25 percent.

Figure 1a. Processed Milk Produced by Kenya Creameries Corporation (KCC) and by Private Processors, 1993-2000



FC = forecast; MIO = million; TP = Tetra Pack.

Figure 1b. Processed Milk Sales in Kenya, 1989-2001



For 2001, processed milk sales are expected to be about half of what they were 10 years ago. Yet judging by the variety of processed fluid milk products on the market, processed milk seems to have become even more popular with consumers.

In 1993, of the 520 million 500-ml packs of milk produced in Kenya, KCC produced 515 million packs, and private processors produced only 5 million packs. In 1996, of the 440 million packs produced, KCC produced 380 million packs and the private sector produced 60 million packs. The forecast for 2000 was 400 million packs, a decline in processed-milk production of 23 percent.

Even though the demand for processed milk seems to exceed supply, based on the above quoted figures, about 10 percent of processed milk is exported.

Kenya is exporting 10 percent of its milk supply although it does not have enough milk to satisfy its own demand.

B3. Consumption of Dairy Products

Based on 1999 data supplied by Tetra Pak, only about 1 percent of the total milk production is processed to milk products, such as cheese, butter, margarine, condensed milk, and powdered milk. Consequently, most of the dairy products sold in the supermarkets are imported.

Most milk is consumed as pasteurized milk or as ultra-high temperature (UHT) milk. Milk is also widely consumed in fermented form as yogurt and as cultured milk (*mala*¹).

Based on our observations in the marketplace, mainly higher-income customers consume milk products. Ordinary kiosks do not stock most milk products. However, imported and repackaged powdered milk is sold in kiosks in poor neighborhoods. Such milk is often packaged in sizes as small as 10-gram packs, which are sold at U.S.\$ 0.13 each.

Based on data supplied by Tetra Pak, of the 2,000 million liters of raw milk produced in 1999, 1,836 million liters (about 90 percent) was consumed as unprocessed milk, while only 164 million liters (less than 10 percent) was processed. Most of the unprocessed milk (76 percent) was consumed in rural areas, with most of that amount being fed to calves. (See Figure 2b.) Most of the processed milk was consumed in the urban market as milk (151 liters) and other milk products (13 liters).

¹ *Mala* is fermented milk made using a mesophilic starter culture, which gives it a buttery flavor. Unlike yogurt, *mala* is less acidic and mild in taste.

Figure 2a. Total Milk Production and Utilization in Kenya, 1999

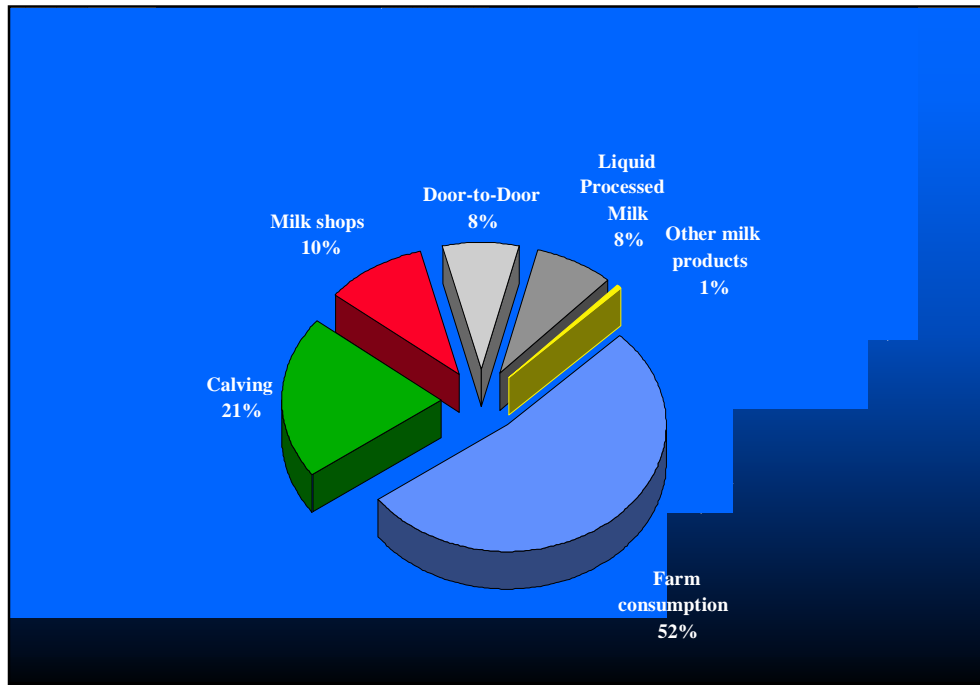
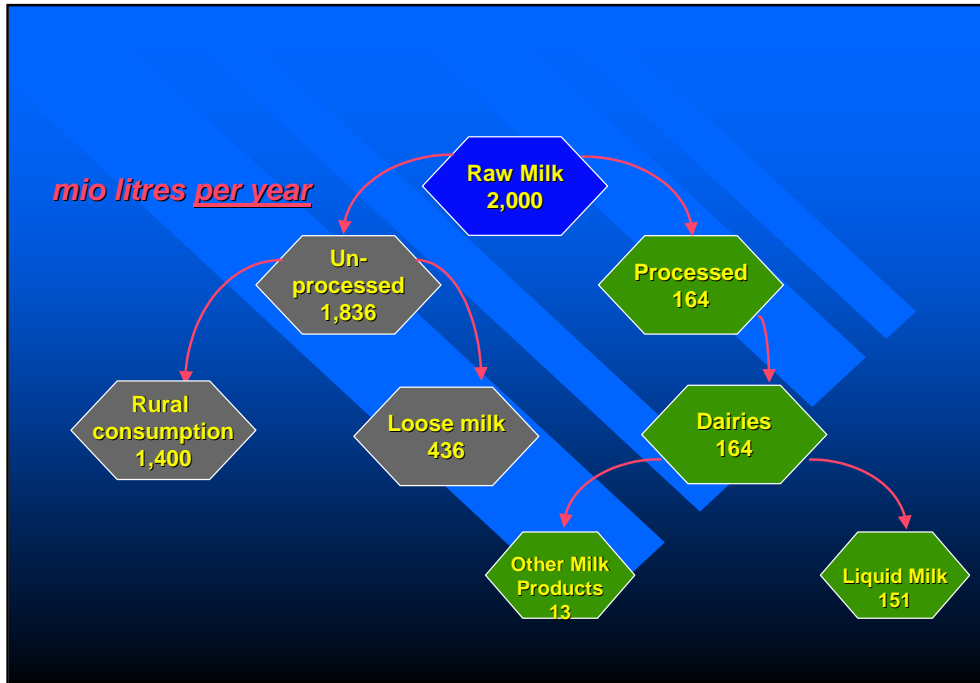
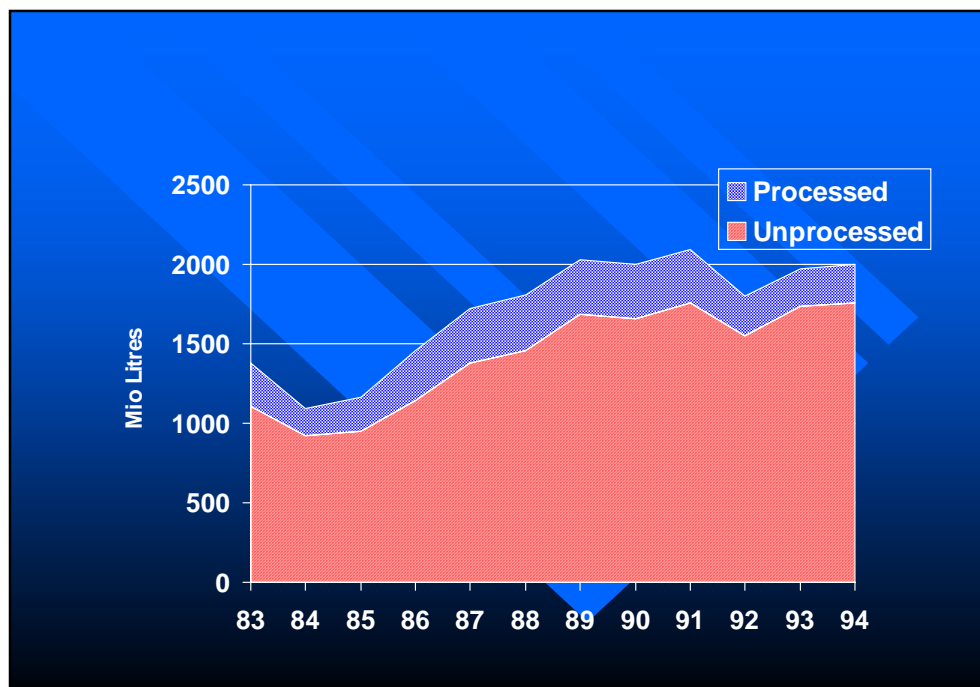


Figure 2b. Milk Market Shares in Kenya, 1999

Figure 3. Raw Milk Intake Versus Processed Milk Intake

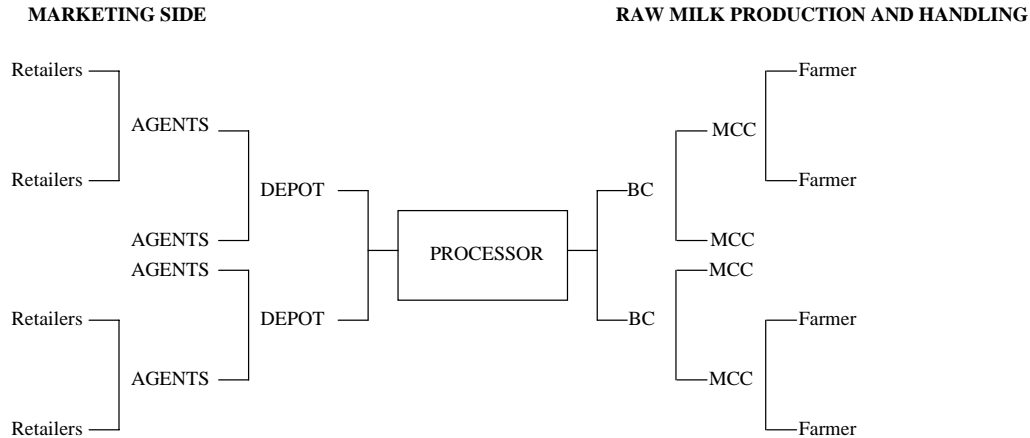
B4. Distribution and Marketing

All Kenyan processors produce for their local market, and most have developed efficient distribution systems. Brookside and Spin Knit are most competitive in the market largely because they manage the production chain better. The production chain links the farmer to the consumer: The farmer takes the milk to the milk-collecting center, where it is then sent to a bulking center and then to the processor. After the milk is processed, it is sent to a depot, from which agents carry it to retail outlets, which sell it to the customer. Under optimum conditions, the processor interacts with all participants in the production chain. The milk marketing chain and production chain are illustrated in Figure 4.

B5. Marketing and Shopping Patterns

Consumers fall into three categories: 1) a high-income group that includes expatriates and executives, 2) a middle-income group that includes professionals and skilled workers, and 3) a low-income group that includes unskilled laborers.

Most Kenyans (80 percent) buy processed fluid milk from kiosks. Consumer preferences with respect to product category, type of package, and shopping patterns are summarized in Table 1. The high-income group buys milk and other milk products mainly from hypermarkets. The middle class and some members of the high-income group mainly shop from ordinary supermarkets because these are located mainly in the city center and therefore offer convenient shopping. The low-income groups buy milk mainly from retail shops and kiosks.

Figure 4. Structure of the Marketing Chain and the Production Chain

In hypermarkets and most big supermarkets, milk products packaged in Tetra Rex packages were more popular than the Tetra Classic and Tetra Block Aseptic packages. Consumers said they preferred Tetra Rex packages because they were easy to carry and store. They are also attractive.

Table 1. Consumer Preferences and Shopping Patterns According to Income Group

| High-income groups | | | Medium-income groups | | |
|--|-------------------------------|--|---|------------------------|---|
| Package preference | Market outlet | Class-specific products | Package preference | Market outlet | Class-specific products |
| TR (most fluid milks)* Bottles (favor milk) | Hypermarkets* Supermarkets | Pasteurized milk UHT plain UHT flavored Yogurt Mala (low pref) | TC (most fluid milk)* TBA (UHT plain milk) TBA (UHT plain flavor) | Supermarkets Kiosks | Pasteurized milk Mala* UHT flavored |
| TBA (UHT plain milk) TC (low pref) | | | | | |

| Low-income groups | | | KEY | |
|---|------------------|--|---|---------------------|
| Package preference | Market outlet | Class-specific products | TR | Tetra REX |
| TC (most fluid milks)* Plastic Pouch | Kiosks* Dukas | Pasteurized milk mala* milk powder | TC | Tetra Classic |
| | | | TBA | Tetra Block Aseptic |
| | | | * Most popular packaging, product or service under a given category | |

Due to the different shopping patterns of the different consumer groups, marketing outlets stock different products. Apart from consumer sophistication, the cost of packaging influences consumer choice. For instance, products in Tetra Rex cost more than products in Tetra Classic packages. Table 2 shows the retail cost of pasteurized milk packaged in Tetra Rex and Tetra Classic packages. Apparently customers are willing to pay more for the Brookside and Spin Knit brands because they have confidence in these brands' processors.

Table 2. Retail Price (U.S.\$) of Pasteurized and UHT Milk in Three Different Package Types in Kenya

| Brand | Tetra Rex (TR) | Tetra Classic (TC) | Tetra Block Aseptic (TBA) |
|----------------|----------------|--------------------|---------------------------|
| Brookside | 0.36 | 0.32 | 0.41 |
| Spin Knit | 0.33 | 0.32 | 0.38 |
| KCC Gold Crown | 0.33 | 0.32 | 0.35 |
| Aberdare | - | 0.30 | 0.37 |
| Limuru | - | 0.30 | - |
| Premier | 0.34 | 0.30 | 0.41 |

Pasteurized milk is the most commonly consumed form of processed fluid milk among all social classes. Other forms in which fluid milk is consumed include UHT (plain and flavored), yogurt, and cultured milk.

Yogurt and UHT, which are relatively expensive, appeal mainly to high-income groups. However, the small packages of UHT-flavored milk have a niche among the low-income groups and is sold at kiosks, mainly for school children. Cultured milk is more popular among the low-income groups, who often combine it with a thick maize flour bread (*posho*) to make a complete meal.

In hypermarkets, low-fat milk was found to be more popular than the more expensive whole milk. A sample of customers interviewed mostly cited health concerns and price difference as the major reasons for their choice of one type of milk over another.

C. Rwanda

C1. Methodology

Data for the Rwandan study was collected from the following sources:

- The Nyabisindu processing plant
- KI and City 2 supermarkets
- Retail shops
- Nyabisindu wholesale outlets
- Milk shops

In the supermarkets, retail shops, and milk shops, we observed the brands of milk products available, the prices at which the different brands are sold, and the purchasing habits of the consumers. At the retail outlets, attendants provided most of the information on the purchase of milk products at their outlets. The key informant at Nyabisindu provided general information on the milk industry in Rwanda, ranging from production, available brands, competition, prices, and the future prospects of the industry.

C2. Range of Products

During the political upheavals of 1994, Rwanda's three processing plants (in Nyabisindu, Inyange, and Rubirizi) suffered heavy damage and are currently producing at less than 20 percent of their capacity. As shown in Table 3, the Nyabisindu and Rubirizi plants produce cultured milk (locally known as *kivuguto*) while the Rubirizi and Inyange plants produce pasteurized milk. The Rubirizi plant also produces some yogurt.

Table 3. Quantities and Products Produced by Rwanda's Three Processing Plants

| Processing Plant | Product | Liters per Day |
|------------------|---|----------------|
| Nyabisindu plant | Cultured milk | 4,000 |
| Rubirizi plant | Cultured milk, yogurt, and pasteurized milk | 600-800 |
| Inyange plant | Pasteurized milk | 1,000 |

In terms of quantity, the amount of cultured milk processed by Nyabisindu is more than the combined quantities of all the product produced by the two other plants.

Other milk products found in the Rwandan market include butter, cheese, powdered milk, ice cream, yogurt, and UHT milk.

All other milk products in the Rwandan market are imported from Uganda, Kenya, Europe, and South Africa. The major products imported from Uganda are UHT and salted butter from the Dairy Corporation. At the time the survey was conducted in Kigali, a new brand of UHT milk, called VIVA, was being launched in the Rwandan market. VIVA is processed and packaged for the Nyabisindu processing farm by the Dairy Corporation of Uganda. VIVA is packaged as VIVA whole, semi-skimmed, and skimmed milk. Rwanda imports little from Uganda's GBK because its supplies have been so irregular.

C3. Consumption Patterns

Rwanda has an estimated population of 7 million people, of whom 1 million live in Kigali. All the milk products produced by the three processing plants in Rwanda are sold within Kigali.

Rwandans prefer cultured milk over all the other milk products sold in the Rwanda market. They prefer cultured milk from the Nyabisindu plant. However, they prefer pasteurized and UHT milk, two other products with high consumption rates, from the Rubirizi plant. Due to the shortfall in local milk production and high consumer prices, Rwanda imports powdered milk to fill the demand gap.

C4. Distribution Patterns

Milk products are sold mainly at supermarkets and retail shops and in the outdoor market. There are two supermarket chains in Kigali: the KI-Supermarket, with three outlets, and the City 2 supermarket, with one outlet. The City 2 supermarket is mainly stocked with imported products, and is more expensive than the KI supermarket, which is used by the middle and lower classes.

The Nyabisindu plant has a wholesale shop in the center of Kigali, where 4,000 liters of cultured milk are distributed every day. Here retailers and even some consumers buy milk products. The idea of a main wholesaler has helped to control prices of the milk products on the Rwandan market. Milk products are also sold in milk shops. Agents are the main importers of powdered milk and UHT milk.

C5. Prices

Milk prices are much higher in Rwanda than in Kenya and Uganda. All milk products (cultured, pasteurized, and fresh) sell in Rwanda for U.S.\$0.47 per liter, except for VIVA,

which sells for U.S.\$0.59 per liter. The higher prices are due to processing plants producing below capacity, leading to a scarcity of milk products. The wholesale price for most milk in Rwanda is U.S.\$0.40 per liter, but VIVA costs \$0.41 per liter. A retailer in Rwanda on average makes a profit of U.S.\$ 0.17 per liter of pasteurized or cultured milk.

C6. Packaging

The milk industry in Rwanda appreciates the role of packaging. As observed above cultured milk and pasteurized milk processed in Rwanda on average sell at the same price. However consumers prefer Laiterie Nyabisindu cultured milk to all the other products on the shelf. The Nyabisindu product is packed in Tetra Rex 500ml packages like cultured milk from Laiterie Rubirizi. UHT milk, which is more expensive, sells faster than pasteurized milk from Laiterie Inyange, which is packed in pouches. Table 4 summarizes the different milk products by price and packaging.

Table 4. Prices (U.S.\$) as per Packaging of Milk Products in Rwanda

| Product | Producer | Price | Packaging |
|------------------|------------|-------|-------------|
| Cultured milk | Nyabisindu | 0.47 | Tetra Rex |
| Cultured milk | Rubirizi | 0.47 | Tetra Rex |
| Pasteurized milk | Rubirizi | 0.47 | Tetra Rex |
| UHT milk | DCL | 0.71 | Tetra Block |
| Pasteurized milk | Inyange | 0.47 | |
| VIVA (UHT) milk | DCL | 0.59 | Tetra Rex |

D. Conclusions and Recommendations for Uganda

This section discusses some lessons that the Ugandan dairy industry can learn from the Rwandan and Kenyan dairy industries.

A major source of inefficiency for Ugandan processors is the failure to interface with the actors at the various levels of the value chain. This makes it difficult to obtain raw milk of the quality suitable for producing quality products and, indirectly, to control price fluctuations. The farmer sees the processor as an unavoidable exploiter and therefore is less committed to satisfy his requirements. On the other hand, the processor wants to minimize costs and often achieves this through unfair deals with the farmer. This situation cannot foster a vibrant dairy industry.

Table 5 below lists the major brands of processed milk products and retail prices in Uganda according to types of packaging. There is no significant price discrimination in the Ugandan market. A comparison of a similar product category, UHT (TBA), with Kenya shows that domestic retail prices in Kenya and Uganda are more or less similar, that is, U.S.\$0.41 for 500ml package. This would suggest competitiveness, but given the efficiency in the Kenyan production and lack of it in the Ugandan case, improving the efficiency of Ugandan production is a prerequisite for Ugandan processors to exploit the export market.

Table 5. Retail Price (U.S.\$) of Pasteurized and UHT Milk in Uganda

| Product | U.S.\$ per 500ml |
|-----------------------|------------------|
| Pasteurized (pouches) | |

| | |
|--|--------------|
| Jessa Fresh Dairy (DCL) | 0.23 0.23 |
| Extended shelf life GBK Tetra fino | 0.2 0.28 |
| UHT (TBA) GBK DCL | 0.34 0.41 |

With improved efficiency, Uganda would find ample opportunities to export milk to Kenya and Rwanda because demand in both countries exceeds supply. Although milk production is higher in Kenya, it is not enough to meet the demand. In Rwanda, farmers are not producing enough even to run the processing plants at 20-percent capacity.

- Ugandan processors can successfully enter the Kenyan and Rwandan markets at current prices because pasteurized milk costs the same in Uganda and Kenya and costs a great deal more in Rwanda.
- Both the Kenyan and Rwandan markets have a high demand for cultured milk. Consequently, although Ugandan processors do not now process cultured milk, they might consider doing so in order to export it.
- Ugandan processors need to follow Kenya's model to improve their procedures for dealing with farmers. Many Ugandan processors currently exploit farmers, in an attempt to maximize their profits. As a result, farmers are often uninterested in meeting processors' standards. This situation makes it difficult to obtain raw milk suitable for producing quality products and, indirectly, to control price fluctuations.
- Ugandan dairy processors might consider producing additional milk products, such as natural, fresh, and processed cheeses; butter, margarine, and spreads; and fermented milk such as yogurt, cultured milk, *mala*, *kefir*, and probiotic-culture products.
- Uganda may want to consider how it packages its products. The Kenyan and Rwandan consumers are willing to pay more for packages that protect products. For example, Tetra Rex products sell better than other products in pouches, even though Tetra Rex's products are more expensive.
- The supply side of the milk is more organized than that of Rwanda, which is almost non-existent currently. With an organized supply side, an industry is assured of having adequate supply to satisfy market demands. Efforts need to be put in place to produce adequate supply and acceptable quality to satisfy the market.
- Ugandan processors should consider penetrating the urban centers in Kenya and Rwanda, the major markets for processed milk.
- In both the Kenyan and Rwandan markets, consumer loyalty greatly influences brand preference. A Ugandan dairy processor therefore needs to use innovative marketing techniques to penetrate these markets.

- Uganda needs to increase the number of dairy cows, which produce 15 liters of milk per day on average. At present, more than 60 percent of Uganda's milk production comes from Zebu cows (indigenous breeds), which produce only 2.5 liters per day on average.

Success in exporting dairy products requires that:

- Products marketed are of good quality.
- Products are consistently available.
- Market prices are controlled and uniform.
- Packaging is adequate for protecting the product as well as storing it. It should also provide information about the product.
- Products are developed to maintain consistent supply, quality, and customer loyalty.
- An effective distribution system be put into place.