Enhancing Smallholder Dairy Farmers’ Marketing Opportunities in Uganda

Edward Ssekawojwa
송 주호
DEDICATION

I dedicate this report to my dear wife, Mrs. Viola Lwanga Ssekawojwa and our children, Vaughan, Valerie, Victor and Andrew.
ACKNOWLEDGEMENT

I take this opportunity to express my deep gratitude to the many people and organizations that have made various contributions towards the success of this report. This report is a result of my five months training program at Korea Rural Economic Institute (KREI) under the 2014 Kapex Academy –Visiting Program.

I wish therefore to most sincerely thank the Government of Korea, the entire KREI community particularly the Center for International Agricultural Partnership (CIAP). During the course of my training I benefited immensely from the lectures delivered by eminent Researchers at KREI as well as my interactions with key personalities during field visits. I thank all for their contributions. I wish also to thank my colleague and co-trainee, Ms. Vu Thuc Linh for all the discussions and consultations that have enriched this report the more.

Lastly but not least I am so much grateful to my supervisor Dr. Song Joo-ho for the constant advice and guidance he offered to me throughout the training program.

November, 2014

Edward Ssekawojwa
District Veterinary officer, Lyantonde District Local government
Enhancing Smallholder Dairy Farmers’ Marketing Opportunities in Uganda

Dairy is one of the sectors that have been identified by the Government of Uganda as key in its objective of poverty reduction. The Ministry of Agriculture Animal Industry and Fisheries (MAAIF), in its Development Strategy and Investment Plan (DISP) for the period 2010/11 – 2014/15 has prioritized ten strategic enterprises and dairy is ranked number four on the list. Subsequently the draft National Dairy Strategy (2011 -2015) has set four objectives for its development agenda including enhancing dairy market access and value addition among others.

Marketing of milk has long been identified as one of the major constraints limiting the development of the dairy sector in Uganda. This problem has been appreciated not only in terms of stimulating increased production and productivity but also improving dairy farmers’ household incomes, food and nutritional security and generally alleviating poverty in Uganda. Considering the fact that smallholder dairy farmers dominate (90%) the dairy industry, it’s prudent to assert that enhancing their participation in the milk marketing systems will go a long way in developing the entire dairy industry in Uganda.

This study sought to benchmark Korean best practices and policies on milk and dairy processing and marketing focusing on stabilization of milk supply and demand as well as the dairy cooperative marketing system. The tusk was accomplished through field tours, attending lectures, consulting with relevant researchers at Korea Rural Economic Institute (KREI) as well as reviewing literature. All this was carried out during a five months training program that ran from July to November, 2014.

Korean milk and dairy products processing and marketing system has registered remarkable success in stabilizing supply and demand of raw milk as well as ensuring improved income for dairy farmers. The system involves government maintaining some degree of control over the price of raw milk in consultation with all major stakeholders from producers to consumers. Basic price of raw milk is determined and fixed for period talking into consideration raw milk production costs, processing costs and consumer prices. A system of price premiums and penalty is used to encourage production of the highest quality raw milk. In addition a milk price differentiation system based on milk quotas is used to discourage overproduction. Generally the Korean milk and dairy processing and marketing model is built on interactions between dairy farmers, cooperatives, government controlling agency and dairy processors.

I hope this report provides useful information to its readers particularly those in key positions of influence in the dairy sector with regard to generating the necessary debate on how to move the dairy sector forward.

Researcher : Edward Ssekawojwa
E-mail address : edsseka@yahoo.com
TABLE OF CONTENTS

Chapter 1 INTRODUCTION AND BACKGROUND................................................................. 1
1. Introduction.................................................................................................................. 1
   1.1. Study justification ............................................................................................... 1
   1.2. Research goal ..................................................................................................... 2
   1.3. Specific Objectives ............................................................................................. 2
2. Background.................................................................................................................. 3
   2.1. Uganda at a Glance ............................................................................................ 3
   2.2. Agricultural economy ....................................................................................... 3
   2.3. Dairy Sector ...................................................................................................... 5

Chapter 2 CURRENT MILK AND DAIRY MARKETING CHALLENGES......................... 19
1. SWOT Analysis of Dairy Sector in Uganda ................................................................. 19
2. Milk and dairy products marketing constraints. ....................................................... 21
   2.1. Poor quality milk and the informal value chain................................................. 22
   2.2. Inefficient and Ineffective Formal Milk Market Channels ................................ 23
   2.3. Inadequate/weak policy and regulatory framework .......................................... 24
   2.4. Consumption .................................................................................................... 24
3. Different milk processing and marketing systems similar challenges .................... 25
   3.1. Public sector led dairy processing and marketing ............................................ 25
   3.2. Private sector led dairy processing and marketing .......................................... 26

Chapter 3 KOREAN EXPERIENCE.................................................................................. 27
1. Korea Dairy Sector Statistics .................................................................................... 27
2. Korea Dairy Farm Income analysis ......................................................................... 28
3. Stabilization of milk and dairy products supply and demand .................................. 28
   3.1. Stabilization of milk supply and demand by Korea Dairy Committee .............. 30
4. The Korea Dairy Committee (KDC) ...................................................................... 34
5. Korea Milk Collection and Dairy Processing Cooperatives ...................................... 39
   5.1. Brief Overview of Agricultural Cooperative System in Korea ...................... 39
   5.2. Agricultural Cooperatives Business and Activities ......................................... 42
   5.3. Roles and Activities of Agricultural Cooperatives in Korea ............................ 46
5.4. Saemaul Movement and development of cooperatives in Korea ........................................ 47
6. The Case of Seoul Dairy Cooperative (SDC) ........................................................................ 47
   6.1. Vision ................................................................................................................................. 47
   6.2. Brief History ....................................................................................................................... 47
   6.3. Seoul Dairy Business Scope ............................................................................................ 50

Chapter 4 DISCUSSION AND RECOMMENDATION ................................................................ 53
1. Agricultural Cooperative Marketing System (ACMS) ......................................................... 53
2. Stabilization of milk / dairy products supply and demand .................................................. 54

Chapter 5 POST KAPEX ACADEMY - VISITING PROGRAM ACTION PLAN ................. 57
1. Sharing of Korean Dairy Sector Experience with Uganda Dairy Sector Stakeholders ...... 57
2. Support / promote dairy producers cooperatives in three pilot districts of Lyantonde,
   Kiruhura and Wakiso ........................................................................................................... 57
3. Review / reform dairy sector policies .................................................................................. 58
TABLES

Chapter 1
Table 1-1: Percentage Distribution of working population by industry ........................................ 4
Table 1-2: Trends in livestock population growth ........................................................................... 5
Table 1-3: Milk production trends (Billion liters) ............................................................................. 7
Table 1-4: Dairy Sector Statistics for East African Countries............................................................ 13

Chapter 3
Table 3-1: Korea Dairy Industry in Figures, 2013 ........................................................................... 27
Table 3-2: Korea milk production and consumption trends .............................................................. 29
Table 3-3: Trend in milk production and price, 2009 – 2014 (April) .................................................... 30
Table 3-4: Milk price premiums and penalty for raw milk, 1,000 KRW = 1 US $ ............................ 32
Table 3-5: Major Indices of Member Cooperatives (2012) ............................................................... 41
Table 3-6: Major Management Indices for NACF (2012) ............................................................... 41
Table 3-7: The changes in informal financial share and interest rates, (Unit %) ............................... 46
Table 3-8: SDC in numbers, 2012 ..................................................................................................... 48
FIGURES

Chapter 1
Figure 1-1: Map of Africa showing location of Uganda.................................................. 3
Figure 1-2: GDP trends at market price, financial years ................................................. 4
Figure 1-3: Agricultural GDP by percentage change, share and calendar year ............... 4
Figure 1-4: Map of Uganda showing the cattle corridor.................................................. 6
Figure 1-5: Milk production trends ................................................................................. 7
Figure 1-6: Map of Uganda showing milk sheds and their % contribution to national production ............................................................................................................. 8
Figure 1-7: Milk production trends (Million liters)............................................................. 10
Figure 1-8: Total milk produced and marketed per year, 2009 – 2-13. ............................. 10
Figure 1-9: Milk marketing channels................................................................................ 11
Figure 1-10: Milk value chains....................................................................................... 12
Figure 1-11: Ratio of per capita milk consumption to per capita GDP, 2000.................... 15

Chapter 2
Figure 2-1: Milk and dairy products marketing challenges conceptualization .................. 21
Figure 2-2: Informal Milk Value Chain............................................................................ 22
Figure 2-3: Changes in farm gate milk price in Southwestern Uganda, 2013; US $ 1 = UGX 2,550..................................................................................................................... 23
Figure 2-4: Ratios of per capita milk consumption to per capita GDP for the year 2000........ 25

Chapter 3
Figure 3-1: Milk and dairy products marketing channels in Korea .................................. 29
Figure 3-2: Farm gate raw milk price, white milk price and ratio ..................................... 31
Figure 3-3: Trend in raw milk production and fluid milk consumption, (tons) ................... 31
Figure 3-4: Trend in milk supply and demand, 1984 - 2013............................................. 32
Figure 3-5: Trend in raw milk grade by bacteria and somatic cell counts (1000 cells/ml, %). 33
Figure 3-6: Trend in average fat and protein content of raw milk (kg, %).......................... 33
Figure 3-7: Trend in individual dairy cow profitability, 1989 – 2013 (Won) ..................... 34
Figure 3-8: KDC Organization Chart ............................................................................ 35
Figure 3-9: Structure of KDC....................................................................................... 35
Figure 3-10: Market Stabilization - Business Goals ................................................................. 36
Figure 3-11: Market Stabilization – Methods ........................................................................ 36
Figure 3-12: Relevant business Methods ............................................................................... 37
Figure 3-13: Milk Trade – Raw Milk Flow and Payments .................................................... 37
Figure 3-14: Consumption Promotion ................................................................................ 38
Figure 3-15: Milk pricing mechanism .................................................................................... 39
Figure 3-16a: Organizational Structure of Nonghyup, 2012 .............................................. 40
Figure 3-16b: The Agric. Coop. system is structured by corresponding or National Administration System ........................................................................................................ 40
Figure 3-17: NACF Agricultural Finance System .................................................................. 44
Figure 3-18: Flow of agricultural fund through the agricultural cooperative channel ............ 45
Figure 3-19: Organizational Structure of SDC ..................................................................... 49
Figure 3-20: SDC Business Scope ........................................................................................ 50
ABBREVIATION

ACA  Area cooperative enterprise
ACMS  Agricultural cooperative marketing system
ADB  African development bank
ADF  African development foundation
APC  Agricultural processing center
ASL  Above sea level
AU  African Union
CIAP  Center for international agricultural partnership
COMESA  Common market for Eastern and Southern Africa
DANIDA  Danish international development agency
DDA  Dairy development authority
DCL  Dairy Corporation limited
DSIP  Development strategy and investment plan
DSSP  Demand-supply stabilization system
EAC  East African community
EADP  East African dairy development program
FAO  Food and agriculture organization of United Nations
GDP  Gross domestic product
HACCP  Hazard analysis and critical control point
ICGLR  International conference on great lakes region
IDF  International dairy federation
IFPRI  International food policy research institute
IGAD  Inter-governmental authority on development
ILRI  International livestock research institute
KDC  Korea dairy committee
KREI  Korea rural economic institute
KRW  Korean won
MAAIF  Ministry of agriculture animal industry and fisheries
MCC  Milk collection center
MoFEPD  Ministry of finance economic planning and development
MSCA  Mutual special credit account
NAADS  National agricultural advisory services
NACF  National agricultural cooperatives federation
NARO  National research organization
NH  Nonghyup
NDS  National development strategy
NDP  National development plan
RPC  Rice processing center
RPO  Rural producers’ organization
SACCO  Savings and credit cooperative organization
SADC  Southern African development community
SALL  Sameer agriculture and livestock limited
SDC  Seoul dairy cooperative
UBOS  Uganda bureau of statistics
UCA  Uganda cooperative alliance
UHT  Ultra high temperature
UNDP  United nation development programme
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>USAID</td>
<td>United States agency for international development</td>
</tr>
<tr>
<td>WFP</td>
<td>World food organization</td>
</tr>
<tr>
<td>WHO</td>
<td>World health organization</td>
</tr>
</tbody>
</table>
Introduction and Background

1. Introduction

1.1. Study justification

Dairy is one of the sectors that have been identified by the Government of Uganda as key in its objective of poverty reduction. The Ministry of Agriculture Animal Industry and Fisheries (MAAIF), in its Development Strategy and Investment Plan (DISP) for the period 2010/11 – 2014/15 has prioritized ten strategic enterprises and dairy is ranked number four on the list. Subsequently the draft National Dairy Strategy (2011 -2015) has set four objectives for its development agenda including enhancing dairy market access and value addition among others.

Since the early days of the dairy sector in Uganda, way back in the 1960s, one of the most limiting factors has been marketing of milk. This problem has been appreciated not only in terms of stimulating increased production and productivity but also improving dairy farmers’ household incomes, food and nutritional security and generally alleviating poverty in Uganda. Considering the fact that smallholder dairy farmers dominate (90%) the dairy industry, it’s prudent to assert that enhancing their participation in the milk marketing systems will go a long way in developing the entire dairy industry in Uganda.

The current milk marketing model though market-oriented is very much skewed with downstream dairy farmers reaping very little from their produce. Because of a weak private sector, over 80% of the entire milk marketing value chain is dominated by the informal sector leaving less than 20% to be processed into high value products. The smallholder dairy farmers although dominate the sector as primary producers have not been able to fully participate in the milk and dairy products processing and marketing value chains so as to improve their farm incomes. The farm gate price of raw milk is particularly low and non-remunerative yet quality of milk along the value chain remain very poor. The situation is exacerbated by the current disorganization of the smallholder farmers coupled with severe fluctuations in milk production causing farm gate prices of raw milk to plummet even further during flush seasons.

Korean milk and dairy products processing and marketing system has registered success in stabilizing supply and demand of raw milk as well as ensuring improved income for dairy farmers. The system involves government maintaining some degree of control over the price of raw milk in consultation with all major stakeholders from producers to consumers. Basic price of raw milk is determined and fixed for period talking into consideration raw milk production costs, processing costs and consumer prices. Final farm gate prices incorporate price premiums depending on the quality of milk produced. Generally the Korean milk and dairy processing and marketing model is built on interactions between dairy cooperatives, government controlling agency and dairy processors.
2 Introduction and Background

This study will seek to benchmark Korean best practices and policies on milk and dairy processing and marketing focusing on stabilization of milk supply and demand as well as the dairy cooperative marketing system. The task will be accomplished through field tours, attending lectures, consulting with relevant researchers at KREI as well as reviewing literature.

1.2. Research goal

To benchmark Korean experience in milk and dairy products marketing systems picking relevant policies and practices that can enable / empower smallholder dairy farmers in Uganda sustainably maximize their share of the dairy value chain.

1.3. Specific Objectives

To study and document Korean Dairy Sector policies and practices that specifically relate to:
1. Stabilization of milk and dairy products supply / demand and farm gate milk prices.
2. Dairy producer groups’, including cooperatives and corporations, marketing systems.
2. Background

2.1. Uganda at a Glance

Uganda located in East Africa, is a landlocked country of over 35 million people, figure 1-1 below.

![Figure 1-1: Map of Africa showing location of Uganda](image)

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Latitude</td>
<td>4° 12’N &amp; 1° 29’ S</td>
</tr>
<tr>
<td>Longitude</td>
<td>29° 34’ E &amp; 35° 0’ E</td>
</tr>
<tr>
<td>Altitude Minimum (ASL)</td>
<td>620 M</td>
</tr>
<tr>
<td>Maximum (ASL)</td>
<td>5,110 M</td>
</tr>
<tr>
<td>Total surface area</td>
<td>241,550 km²</td>
</tr>
<tr>
<td>Area under land</td>
<td>199,807 km²</td>
</tr>
<tr>
<td>Area under water &amp; swamps</td>
<td>41,743 km²</td>
</tr>
<tr>
<td>Temperature</td>
<td>16 – 30° C</td>
</tr>
<tr>
<td>Rainfall</td>
<td>850 – 1700 mm/year</td>
</tr>
<tr>
<td>Total population, 2014</td>
<td>34.9 million</td>
</tr>
<tr>
<td>Population density</td>
<td>123 persons/km²</td>
</tr>
<tr>
<td>GDP (current market prices), 2013</td>
<td>$ 22.64 billion</td>
</tr>
<tr>
<td>GDP per capita, 2013</td>
<td>$ 640</td>
</tr>
</tbody>
</table>

2.2. Agricultural economy

The national GDP of Uganda has grown at an average rate of 7 % for the last 10 years, figure 1-2. Agriculture contribution to national economic growth has declined in the recent past and currently stands at 22% of GDP, figure 1-3.
Even then agricultural sector continues to be the largest employer of Uganda’s working population, table 1-1.

**Table 1-1: Percentage Distribution of working population by industry**

<table>
<thead>
<tr>
<th>Industry</th>
<th>2005/06</th>
<th>2009/10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agriculture</td>
<td>71.6</td>
<td>65.6</td>
</tr>
<tr>
<td>Service</td>
<td>23.9</td>
<td>28.4</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>2.9</td>
<td>5.0</td>
</tr>
</tbody>
</table>

*Source: Uganda National Household Surveys 2005/06 and 2009/10, UBOS*
Agricultural products continue to dominate export market, contributing 48% of total value in 2008 (UBOS). In addition agriculture plays a central role in Uganda’s industrial growth by providing the raw materials. In 2013, 40% of all manufacturing was attributed to food processing.

According to the 2014/2015 budget background (MoFEPD, 2014), agriculture grew by 1.5% last financial year (2013/2014) slightly more than 1.3% a year before. In line with priorities set out in the Vision 2040 and NDP, Government has allocated 3.3% of the national budget to agriculture up from 2.9% in the previous financial year.

Livestock is one of the priority investment areas in the NDP. Over the last 3 years livestock production has grown on an annual average of 3%, contributing 5.2% and 12.7% of total GDP and agricultural GDP respectively.

### 2.3. Dairy Sector

The dairy sector contributes 50% of livestock GDP. The sector has continued to grow at an average rate of 8 – 10% per annum over the past decade. Nearly 3 out of 10 households (1.7 million) in Uganda derive their livelihood through cattle farming for direct employment, food nutrition, and income (UBOS, 2008). The most progressive of them are engaged in dairy production. Although proportionately low and estimated at only 6.7% (861,000) of the total cattle herd (UBOS 2012), dairy cattle are increasingly becoming a very important resource of the agricultural economy in Uganda. Dairy farming has been known to provide smallholder farmers with regular cash income that can be several times higher than many other types of on- and off-farm enterprises.

#### 2.3.1. Livestock population

Currently Uganda is estimated to have; cattle 12,841,000, goats 12.5 million, sheep 3.4million, pigs 3.2 million and chicken 37.5million. Cattle are the most important livestock economically and socially in Uganda. Mixed farmers, smallholders and pastoralists own over 90% of the national cattle herd. Like all other livestock types cattle population has grown significantly from 7.4 million in 2005 to 12.8 million in 2012, table 1-2. Almost one in three (1.7 million) households owned cattle in 2008.

<table>
<thead>
<tr>
<th>Livestock</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle</td>
<td>11,400,000</td>
<td>11,751,000</td>
<td>12,104,000</td>
<td>12,467,000</td>
<td>12,841,000</td>
</tr>
<tr>
<td>Goats</td>
<td>12,500,000</td>
<td>12,823,000</td>
<td>13,208,000</td>
<td>13,604,000</td>
<td>14,018,000</td>
</tr>
<tr>
<td>Sheep</td>
<td>3,400,000</td>
<td>3,513,000</td>
<td>3,621,000</td>
<td>3,730,000</td>
<td>3,842,000</td>
</tr>
<tr>
<td>Pigs</td>
<td>3,200,000</td>
<td>3,280,000</td>
<td>3,378,000</td>
<td>3,480,000</td>
<td>3,584,000</td>
</tr>
<tr>
<td>Poultry</td>
<td>37,500,000</td>
<td>38,557,000</td>
<td>42,706,000</td>
<td>44,306,000</td>
<td>45,901,000</td>
</tr>
</tbody>
</table>

**Source:** Statistical Abstract, UBOS

Most of the livestock population is concentrated in the 29 Districts in the cattle corridor running southwest to northeast across Uganda, figure 1-4 below. These Districts make up 44% of
Uganda’s surface area and contain 40% of the population, 55% and 42% of the indigenous and exotic cattle, respectively, 42% of sheep and goats, 36% of the pigs and 38% of the poultry flock. It’s therefore important to note that a large proportion of the dairy cattle and hence milk production is concentrated in the cattle corridor.

The total number of milked cows in Uganda was estimated at 1.52 million. Western Region had the highest number of milked cows at 0.41 million while Northern Region had the least number of milked cows estimated to be 0.16 million.

2.3.2. Milk production

Milk production in the last 5 years has increased by over 30% to 1.93 billion liters in 2013, table 1-3 and figure 1-5 below.

Milk production in Uganda is affected by seasonal fluctuations which lead to a lot of milk during the flush periods in the South-West while other regions particularly the Northern and Eastern including Karamoja are milk deficit. On average 8.5 liters of milk are produced per cow per week.
Table 1-3: Milk production trends (Billion liters)

<table>
<thead>
<tr>
<th></th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
<th>2012</th>
<th>2013</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milk production</td>
<td>1.45</td>
<td>1.5</td>
<td>1.66</td>
<td>1.86</td>
<td>1.93</td>
</tr>
<tr>
<td>Marketed milk</td>
<td>1.02</td>
<td>1.05</td>
<td>1.16</td>
<td>1.3</td>
<td>1.35</td>
</tr>
</tbody>
</table>

Source: Dairy Development Authority

In terms of milk production the country is divided into six milk sheds, namely; (i) south-west, (ii) mid-west, (iii) northern, (iv) central, (v) eastern and (vi) Karamoja, figure 1-6 below. Milk production is unevenly distributed throughout the country, with the Southwestern and Central milk sheds producing the bulk (49%) of the milk. Seventy percent of total milk production is marketed while 30% is consumed at farm level.
2.3.3. Dairy farming systems

Livestock farming in Uganda is largely subsistence with smallholder units dominating the industry. Average land holding for livestock rearing households in Uganda was reported as 2.2ha by the 2008 livestock census (UBOS 2008). While cattle herds size averages 2, although amongst cattle-owning households; typical household owns on average 7 head of cattle. There are regional variations with Karamoja region reporting higher average cattle herd size estimates of 21 while the Eastern region has the least estimate of 4 heads of cattle per household. As of 2008 a significant number of households in Uganda, (70.8%) were rearing some kind of domestic animal or bird. One in three livestock rearing households are headed by farmers who are 50yrs and above. The bulk of labor in livestock farming is provided by family members. According to the 2008 UBOS report only 2.4% households utilize hired labor. Livestock feed is provided by natural rain fed pastures. Planted pastures account for only 2.4% of livestock farms in Uganda.
There are three major dairy farming systems practiced in Uganda which include: (i) free range grazing systems, (ii) semi intensive and (ii) intensive (zero grazing ) systems. Free range and semi intensive systems are characteristically low in-put low out-put production systems. A report by East Africa Dairy Development Programme (EADDP), 2007 showed that milk production capacity of free range and semi intensive farming systems ranged between 1 liter and 20 liters per cow per day. While cows reared under the intensive farming system can produce up to 30 liters per cow per day.

2.3.3.1. Free range dairy farming

Typical free range dairy is characteristically a mixed farming system with dairy cows reared alongside beef animals and other livestock commonly goats. Average cattle herd sizes range from 15 to 30. The most popular breed is a crossbreed between indigenous (Long horned Ankole) and Friesian. The system depends on natural breeding to produce replacement stock. Holdings are commonly enclosed with some form of a perimeter fence, usually a natural hedge, barbed wire or both. But pastures are not paddocked. Feeding is by letting cows roam the rangelands freely to graze natural pastures with no supplementation. Cows are watered once a day with rain water collected in ponds or valley tanks, using manual labor to draw water from reservoirs into drinking troughs. Labor, pests and diseases control account for the largest proportion of production costs. Average milk production ranges between 3 and 5 liters per cow per day. The system generally faces challenges of seasonal scarcity of pasture and water during dry season which result in milk production dropping by almost 70%.

2.3.3.2. Semi-intensive dairy farming

Semi-intensive dairy farming system is a modernized version of free range. Pastures are paddocked and cows are sometimes supplemented with maize bran. Dairy cow breeds are relatively of higher quality with higher milk production capacity averaging between 5 to 15 liters per cow per day. Many farmers milk twice a day, which can raise cow productivity.

2.3.4. Milk demand and supply

2.3.4.1. Milk production

Milk production has increased steadily from 385 million liters in 1970 accelerating at about 8 % since 2000 to slightly below 2 billion liters in 2013, figure 1-7 below.
According to the Dairy Development Authority (DDA) the country produced 1.9 billion liters of milk in 2013. Out of which 1.35 billion (70%) were marketed and 0.58 million (30%) consumed at farm household level, figure 1-8.

**Figure 1-8: Total milk produced and marketed per year, 2009 – 2-13.**

2.3.4.2. Milk marketing channels

Milk in Uganda is broadly marketed through 2 main channels, the formal and informal value chains. Dairy Development Authority estimates that the proportion of milk processed and marketed through the formal channel has increased from 10% in 2009 to 20% in 2013. The market is currently dominated by the informal value chain dealing in unprocessed milk, figure 1-9.
Challenges notwithstanding milk production continue to register an upward trend to the extent that Uganda now imports less milk to meet domestic demand. This growth was also reflected in fact that the value of milk exports declined from more than UGX 50 million in 2001 to below UGX 10 million in 2006.

**Milk value chains can be so elaborate, figure 1-10.**
- Producer to dairy cooperative;
- Cooperative milk bulking center.
- Sold to raw milk traders (bicycle & big).
- Producer to Processor.
- Farmer organization retail outlet.
- Processor;
- Delivered directly to processor.
- Processor owned MCC.
  - Mainly used by producers near processor.
- Producer to raw milk trader;
  - Trader owned rural based MCC.
  - Trader owned bulking center and from here sold to;
    - Processor – formal and informal.
    - Bicycle raw milk trader.
    - Other raw milk traders.
  - Trader owned retail outlet.
Current milk marketing opportunities for farmers
- Sell directly to consumers
- Sell to retailer (street vendor, hotel, trader)
- Sell to cooperative society
- Sell to processor
- Process and sell to retailer or consumer

Figure 1-10: Milk value chains


2.3.4.3. Milk Processing

Benefits of milk processing
- Improve nutrition
- Increased farmer household income
- Addressing seasonal fluctuations
- Stabilizing milk prices
- Access to wider market
- Increasing employment opportunities

As of 2014, Uganda had 16 registered processors. Total installed daily processing capacity – 1,018,000 liters. In 2009 out of total marketable surplus milk estimated at 1.05 billion, only 10-20% was processed and 80-90% was marketed raw.

The formal dairy marketing channel is affected by low utilization capacity estimated at 31% (69% idle capacity) which reflects in the high price of processed products on the market (DDA 2009). It is also monopolized by SALL – accounting for almost 65% of total national processing capacity.
Dairy products:
- Heat-treated liquid drinking milk (pasteurized and UHT)
- Flavor added milk drinks
- Butter
- Ghee
- Fermented milk (Yogurt, Cheese)
- Ice cream (Skimmed milk)
- Powdered milk

2.3.5. Farm gate price of raw milk

Farm gate prices of raw milk are low and fluctuate severely between seasons. According to MAAIF, the average price of raw milk per liter was UGX 422 (US $ 0.16) in 2008. Prices ranged UGX 300 – 1000 (US $ 0.11 – 0.38) depending on season and region. It should be noted that low prices and high costs of inputs are key factors that discourage investment by farmers.

Comparing with her regional neighbours Ugandan dairy farmers receive the lowest farm gate milk price of US $ 0.14, table 1-4 below.

Table 1-4: Dairy Sector Statistics for East African Countries

<table>
<thead>
<tr>
<th>Dairy stats</th>
<th>Uganda</th>
<th>Burundi</th>
<th>Ethiopia</th>
<th>Kenya</th>
<th>Rwanda</th>
<th>Tanzania</th>
</tr>
</thead>
<tbody>
<tr>
<td>National cattle population (millions)</td>
<td>12.8</td>
<td>0.645</td>
<td>49.2</td>
<td>18</td>
<td>1.5</td>
<td>21</td>
</tr>
<tr>
<td>Specialized dairy cattle (millions)</td>
<td>0.65 (5%)</td>
<td>0.01 (1.5%)</td>
<td>0.19 (0.3%)</td>
<td>3.5 (19.4%)</td>
<td>0.2 (13.3%)</td>
<td>0.68 (3.2%)</td>
</tr>
<tr>
<td>Milk production per year (billion liters), 2013</td>
<td>1,930</td>
<td>73</td>
<td>3,300</td>
<td>4,400</td>
<td>450</td>
<td>1,650</td>
</tr>
<tr>
<td>Milk consumption/per capita (liters)</td>
<td>56</td>
<td>6</td>
<td>19</td>
<td>99</td>
<td>40</td>
<td>23</td>
</tr>
<tr>
<td>Milk processing capacity (liters/day)</td>
<td>1,018,000</td>
<td>20,000</td>
<td>210,000</td>
<td>2,900,000</td>
<td>160,000</td>
<td>410,000</td>
</tr>
<tr>
<td>Actual processing (liters/day)</td>
<td>624,000</td>
<td>17,000</td>
<td>127,000</td>
<td>1,170,000</td>
<td>32,000</td>
<td>105,000</td>
</tr>
<tr>
<td>Percentage installation utilization</td>
<td>61</td>
<td>85</td>
<td>60</td>
<td>40</td>
<td>20</td>
<td>23</td>
</tr>
<tr>
<td>Farm gate raw milk price (US $/liter)</td>
<td>0.14</td>
<td>0.36</td>
<td>0.41</td>
<td>0.39</td>
<td>0.22</td>
<td>0.18</td>
</tr>
<tr>
<td>Kiosk milk trader price (US $/liter)</td>
<td>0.40</td>
<td>0.59</td>
<td>0.76</td>
<td>0.47</td>
<td>0.74</td>
<td>0.62</td>
</tr>
<tr>
<td>Processed milk price (US $/liter)</td>
<td>0.38</td>
<td>0.98</td>
<td>0.87</td>
<td>0.59</td>
<td>1.19</td>
<td>0.65</td>
</tr>
<tr>
<td>Retail price (US $/liter)</td>
<td>0.81</td>
<td>1.31</td>
<td>1.08</td>
<td>1.02</td>
<td>1.41</td>
<td>0.72</td>
</tr>
<tr>
<td>Farm gate price ratio</td>
<td>0.17</td>
<td>0.27</td>
<td>0.38</td>
<td>0.38</td>
<td>0.16</td>
<td>0.25</td>
</tr>
</tbody>
</table>
Drivers of farm gate milk prices in Uganda
- Buyer category (cooperative, processor, raw milk trader, agent, consumer etc.)
- Competition among buyers
- Volume of raw milk supplied.
- Quality of milk supplied.
- Availability of milk cooling centers.
- Transport costs.
- Distance between producers and milk collection center.
- Distance between producers and major urban markets.
- End-user / product

2.3.6. Milk and dairy products consumption

According to Dairy Development Authority (DDA) per capita milk consumption stood at 56 liters in 2013, glowing at an estimated average of 8% per annum. This is still low compared to neighboring Kenya’s 100 liters, and FAO/WHO, recommend 200 liters. In Uganda most commonly purchased types of milk are: unprocessed raw milk, domestically processed packaged milk (pasteurized and UHT) and boiled unpackaged milk. The most commonly consumed dairy products include; yogurt and indigenous fermented milks, ghee, butter, cheese of different types, ice cream, sweet and sour cream.

A study by K2-Consult, 2002, indicated that milk in Uganda is consumed in five main forms;
- Warm after boiling
- Cold after boiling
- In beverages (mainly tea, coffee and cocoa)
- In raw form (unboiled)
- As a fermented milk.

Based on these consumption habits, unprocessed milk marketed through the informal channels exhibits the highest demand followed by pasteurized milk.

Considering levels of milk consumption in relation to income Ugandan consumers in 2000 took only 24mls on average per GDP, the lowest in the region, figure 1-11 below. The implication is that purchasing power may be less of a constraint to increased consumption in Uganda compared to its neighbors, if consumer interest and preferences for milk can be increased.
2.3.7. Dairy Cooperatives in Uganda

2.3.7.1. Dairy producer marketing groups/dairy cooperatives

Historically past governments developed cooperatives as an instrument of control but also as an informal mechanism through which rural surplus could be extracted for the benefit of the urban dwellers while at the same time improving the income and quality of life of rural communities. However cooperatives have never developed fully into a significant player in economic development. Part of the reason was due to past political and economic instability, governments’ interferences but also poor internal management weaknesses. Currently Government has shown keen interest in the revival of the cooperatives movement in the country. The dairy sector has seen a steady increase in the number of producer marketing groups, particularly those involved in milk collection. In areas where producer marketing groups are active dairy farmers are beginning to reap profits in terms of stable prices and regular payments. From the way they operate two broad categories of dairy cooperatives can be identified:

1. Producer marketing groups which work as independent legal entities that collect, process and market their milk. These are generally very few in number and usually operate in their respective localities. Their major challenge include, low technical and professional capacity, limited access to financial services and generally poor management skills.

2. Producer marketing groups that collect milk and sell to established private sector processers. Although many producer marketing groups fall in this category their influence and impact in the dairy sector is still minimal. For example milk prices are still dictated to them by milk processors.

Although currently producer marketing groups are few and weak, their potential in empowering smallholder dairy farmers to integrate into mainstream dairy value chain and...

Figure 1-11: Ratio of per capita milk consumption to per capita GDP, 2000

Source: ILRI report prepared for IFPRI/USAID, 2003
maximise incomes is immense. However the success of producer marketing groups can only be guaranteed if an enabling official dairy sector policy is in place.

2.3.7.2. Development of Dairy Marketing Groups in Uganda

- 1960, Independent Dairy Marketing Groups, like Toro and Kigezi dairy cooperative societies.
- 1970, Civil disturbances; setbacks in producer dairy groups development
  - Rehabilitation of the dairy industry programme given priority:
  - UNDP/FAO Dairy Industry Development Project;
  - UNDP/FAO Rural Community Dairy Production and Marketing Project;
  - Substantial support was received from World Food Programme, DANIDA, ADF, USAID and other donor agencies.
  - By 1992 overall external donor commitment to Government Programme as a whole was US $ 55.1 million.
  - Revival of producer marketing groups.
  - By 1993 there were over 50 registered dairy co-operatives, associations and companies handling about 1% of the total marketable surplus of milk.
  - The project employed a pilot scheme strategy selecting 10 farmer groups involving 800 dairy farms distributed in different milk sheds of the country.
  - A model for field advisory (dairy extension) services and promotion of producer marketing groups was developed. This model was a package of integrated activities that included:
    - Identification of dairy farming groups and carrying out a baseline survey to identify constraints that impede increased milk production and improved marketing;
    - Group formation;
    - Training, demonstration and advisory and other services provided at farm level;
    - Technical assistance in milk marketing;
    - Demonstration of small scale milk processing methods;
    - Training in management of group projects; and
    - Provision of credit.

- 1992, Dairy Sector Master Plan Study;
  - Findings of the study together with the experience of the UNDP/FAO project formed basis of a comprehensive government dairy policy, the Dairy Sector Master Plan, 1992.
  - The official policy on top of endorsing the UNDP/FAO Project model on producer marketing groups clearly emphasised the role these groups can play in the development of the dairy sector.

2.3.7.3. Uganda Agricultural Cooperatives Status

- Uganda Cooperatives Alliance (UCA) is spearheading the restructuring of agricultural cooperatives system to overcome post-liberalization challenges that led to the collapse of most cooperatives in the country.
- UCA has promoted the Tripartite Cooperative Model based on three pillars that complement one another:
Area Cooperative Enterprises (ACE); Rural Producers Organization (RPOs); and Savings and Credit Cooperatives Organisations (SACCOs).

2.3.8. Dairy Sector Policy Framework


- Dairy is ranked highly because, uniquely, it can contribute significantly to the DSIP’s twin overarching development objective of: increased rural incomes and improved household food security.


- The NDS has four objectives:
  ▪ Increase milk production and productivity;
  ▪ Enhance market access and value addition;
  ▪ Create an enabling environment; and
  ▪ Strengthen dairy institution capacity.
- The policy favors a private sector led dairy development strategy.

2.3.8.2. Dairy Policy Trends

  ▪ DCL responsible for the development, processing, marketing, and regulating the dairy industry.
- 1972-1986, Period of civil disturbance and general economic decay causing decline in several sectors including dairy.
- 1987- 1992, National Rehabilitation and Development Plan, foreign funding from FAO, UNDP, ADB, WFP and DANIDA.
  ▪ The goal was to achieve self-sufficiency in milk through;
  ▪ Dairy farm production capacity
  ▪ Improving milk collection
  ▪ Milk processing and marketing
  ▪ Strengthening dairy extension services.
  ▪ Milk production increased from 0.23 million liters to 23 million per liters per annum.
- 1993, Dairy Master Plan
  ▪ Liberalization of milk marketing
  ▪ Creation of Dairy Board
  ▪ Privatization of DCL
- 1998, Dairy Industry Act – revised
- 2000, Dairy Development Authority (DDA) established.
- 2006, Dairy Corporation Ltd privatized.

2.3.8.3. The Dairy Development Authority (DDA)

Current dairy sector policies were made over two decades ago as a result of the Dairy Master Plan of 1993. The Dairy Industry Act, 1998 together with the Dairy (marketing and processing of milk and milk products) regulations 2003 form the backbone of the dairy sector regulation in Uganda. The two documents are supported by other regulations like the animal health policy, animal breeding policy, and the public health Act.

Dairy Development Authority (DDA) is the agency charged with the responsibility of development, regulating and monitoring the quality and enforcement of standards. The authority works in collaboration with Uganda National Bureau of Standards (UNBS) on standards development and enforcement.

The objective of DDA is to provide proper coordination and efficient implementation of all Government policies which are designed to achieve and maintain self-sufficiency in the production of milk in Uganda by promoting production and competition in the dairy industry and monitoring the market of milk and milk products. Specifically DDA works to facilitate the dairy industry to:

- Raise the incomes and standards of living of small scale farmers through increased and continuous returns in dairy farming;
- Achieve and maintain self-sufficiency in milk and dairy products and to export any surplus;
- Promote increased dairy productivity with the use of available cost-effective technology and breeding policy and to foster its sustainability with due regard to cordial environmental equilibrium;
- Establish liberal but harmonized dairy markets and to promote competition in milk collection, milk processing and milk marketing;
- Regulate and control the market for milk and dairy products and to promote the production and competition in the market; and
- Improve human resources capacity for the development of the dairy sector.
1. SWOT Analysis of Dairy Sector in Uganda

Competitive strength

1. Tropical weather conditions are suitable for livestock farming
2. A large number of households (1.7 million) are engaged in cattle farming.
3. Available market for livestock products in Uganda, and within the EAC and COMESA region comprising of over 495 million people.
4. A vast pastureland and livestock (12.8 million cattle, 2012) resources.
5. Comparatively low costs of milk production, favorable agro-ecological environment.
6. Government has ranked and prioritized dairy production as number 4 in national importance in its DSIP.
7. Availability of Research and Advisory Services: Uganda has well established structures and policies regarding agricultural research and advisory services. The National Agricultural Research Organization (NARO) and the National Agricultural Advisory Services (NAADS) are well prioritized in government development plans.
8. Strong and progressive policy framework

Weakness

1. Production constraints: These are problems that face individual farmers and affect their capacity to improve production and productivity of their farms. They include but not limited to the following;
   - Endemic disease
   - Poor quality breed
   - Inadequate feed and water
   - Limited knowledge

2. Marketing constraints: These challenges affect the processing and marketing of milk and dairy products making dairy farming less profitable.
   - Poor processing and marketing infrastructure.
   - Poor quality milk and a dominant informal marketing channel
   - Lack of information on opportunities for value addition.

3. Institutional constraint. These problems affect competitiveness of dairy farming.
   - Uncertain policy environment.
   - Lack of capacity for policy making and planning.
   - Weak enforcement of polices, laws, standards, and regulations.
   - Sub-standard in-puts and products on market.
   - Insufficient research into dairy problems and opportunities.
20 Current milk and dairy marketing challenges

- Inadequate advisory and veterinary services.
- Weak farmer institutions
- Lack of investment in productivity enhancing and value addition activities many of which are beyond the capacity of ordinary farmers.

4. Financial constraints
- Lack of reliable source of development finance.

Opportunities

1. Domestic and regional markets: Uganda has committed to a number of regional communities, notably; East African Community (EAC), Common Market for East and Southern Africa (COMESA), Inter –Government Authority on Development (IGAD), the African Union (AU), and International Conference on the Great Lakes Region (ICGLR). Also plans are under way for EAC-COMESA-SADC tripartite which will create a 26 nation free trade zone by the end of 2014. This zone will boost of a population of 525 million people with an output of US 1 trillion dollars.
2. Domestic milk consumption of 56kg per capita per year (DDA, 2013) is below FAO recommendation of 200 liters per person per year, plus a young and rapidly urbanizing population will guarantee an ever increasing demand for animal products.
3. Presence of stakeholders’ organizations along the dairy value chain.
4. Improvements in key dairy support infrastructure, like road, cold chain facilities, rural electrification.
5. Improvements in financial services access.

Threats

1. Rampant outbreaks of pests and diseases. Animal health is less developed with numerous challenges ranging from inadequate veterinary services to weak policies.
2. Seasonal scarcity of pasture and water: Because livestock farming systems are largely dependent on rain fed natural pasture and rain harvested water, they are so sensitive to weather changes being particularly prone to prolonged droughts and / or inadequate rain seasons. Uganda receives rainfall twice in a year, one season runs from March to May and another from September to December. Livestock production cycle follows a seasonal weather pattern, peaking during rainy season and declining during the dry season.
3. Regional conflicts and terrorism: Current conflicts in Southern Sudan and parts of Eastern Democratic Republic of the Congo, and terrorism threats by the Al Shabaab in Somalia poses negative effects on the development of the livestock sector particularly attraction of foreign investment and expansion and function of regional markets but also on the control of transboundary livestock diseases.
4. Poor and / or inadequate coordination of other key sector like roads, energy, financial services and agricultural education.
5. Importation and / or dumping of cheap dairy products from developed countries that directly subsidize the production and export operations.
6. Growing competition from other beverages like soda, fruit juices.
2. Milk and dairy products marketing constraints.

Milk is marketed through two major routes, the informal and formal value chains. The informal value chain is characterized by poor quality milk, unhygienic practices and dishonesty. While on the other hand the formal value chain is affected by inefficient operations, poor infrastructure and seasonality of milk production. Yet on their part, smallholder dairy farmers in Uganda are not organized, largely operate in isolation and thus having limited bargaining power. The situation is aggravated by weak and inadequate policies and regulatory framework, figure12.

Figure 2-1: Milk and dairy products marketing challenges conceptualization
2.1. Poor quality milk and the informal value chain

According to DDA about 80% of total milk production in 2013 was marketed unprocessed milk through the informal sector. The informal market can be described as that which supplies fresh raw milk and traditional products such as traditionally soured milk and which operates using traditional rather than modern handling and processing practices. It may also operate largely outside of formal milk market regulation. Key players include hawkers, transporters and street vendors, figure 13 below.

The informal value chain mostly uses unconventional practices like transporting raw milk in unhygienic plastic containers for longer distances and taking longer time before chilling. No milk quality checks are carried out throughout the value chain. On the contrary milk is routinely adulterated commonly with water and bacteria killing chemicals.

Milk quality
Current problem/challenge

- Poor quality milk
  - Limited value addition
  - Risk to consumer safety
  - High rate of wastage, only 14% marketable milk goes through the cold chain and this contributes to the high sourages. According to FAO, 2003, 21% of the post-harvest losses were attributable to lack of reliable cold chain.
- Informal marketing chain doesn’t check for milk quality
- Formal marketing chain doesn’t offer incentive for farmers to improve milk quality
- No price premiums for good quality raw milk
- Low consumer awareness

Figure 2-2: Informal Milk Value Chain
23 Current milk and dairy marketing challenges

- On average farm gate prices vary between Ug. Shs. 600/= and Ug. Shs. 1,000/= per liter of milk for the wet and dry seasons respectively. While consumers buy milk between 800/= and 1,500/= per liter.

- A 2007 report by TechnoServe Uganda for the East Africa Dairy Development Program (EADP) indicated that the major factors attracting farmers to sell their milk to the informal sector included:
  - On the spot cash payments.
  - Lack / or little emphasis on quality.

- While on the other hand consumer behaviors were found to be influenced more by perceptions and poor awareness than milk price.

### 2.2. Inefficient and Ineffective Formal Milk Market Channels

According to the DDA the formal sector processed and marketed only 0.27 billion liters (20%) out of the total marketable milk surplus of 1.35 billion liters in 2013. And although total installed daily milk processing capacity has increased to 1,304,330 liters in 2013 from 904,330 in 2012, actual processing stood at less than 700,000 liters per day.

Farm gate price of raw milk is low and fluctuate severely, figure 2-3 below.

- Farm gate price range per liter, US $ 0.11- US $ 0.38
- Estimated processor cost of pasteurized milk per liter, US $ 0.38
- Retail milk price of pasteurized milk per liter, US $ 0.82
- Farm gate milk price / pasteurized milk price ratio averages US $ 0.17
- Farmers and producer organizations have no influence on raw milk price
- Prices are lowest in flush season and highest in season of scarcity

Figure 2-3: Changes in farm gate milk price in Southwestern Uganda, 2013; US $ 1 = UGX 2,550

![Price vs Time Graph](attachment:image.png)
Constraints of formal milk channels

- Logistical problems.
  - Logistical cost of collecting small quantities of milk from scattered locations.
  - Operate under capacity and at high costs.
  - 13 private milk processing companies had emerged 5 years after dairy sector deregulation in 1993.
  - Out of the thirteen original milk processing factories, eight were forced to drop out mainly due to high operating costs, but also partly due to stiff competition from informal milk markets.

- Milk and dairy market liberalization and WTO agreements.
  - Dumping of cheap milk on local market.

- Consumer habits.
  - K2-Consult, 2002, suggested that milk in Uganda is consumed in five main form; (i)warm after boiling, (ii) cold after boiling, (iii)in beverages, mainly tea, coffee and cocoa, (iv) in raw form (unboiled) and (v) as a fermented milk
  - Consumption of processed dairy products (ghee, yogurt, butter, and cheese, ice-cream) is very low compared.

2.3. Inadequate/weak policy and regulatory framework

- Dairy Development Authority has limited human and financial resources
- Self – regulation is difficult due weak farmers and processors institutions.
- Obsolete /outdated Laws

2.4. Consumption

- According to Dairy Development Authority (DDA) per capita milk consumption stood at 56 liters in 2013, glowing at an estimated average of 8% per annum
- This is still low compared to neighboring Kenya’s 100 liters, and FAO/WHO, recommend 200 liters.
- In Uganda most commonly purchased types of milk are: unprocessed raw milk, domestically processed packaged milk (pasteurized and UHT) and boiled unpackaged milk.
- The most commonly consumed dairy products include: yogurt and indigenous fermented milks, ghee, butter, cheese of different types, ice cream, sweet and sour cream
- Study by K2-Consult, 2002, indicated that milk in Uganda is consumed in five main forms;
  - Warm after boiling
  - Cold after boiling
  - In beverages (mainly tea, coffee and cocoa)
  - In raw form (unboiled)
As a fermented milk.
- Based on these consumption habits, unprocessed milk marketed through the informal channels exhibits the highest demand followed by pasteurized milk.
- Considering levels of milk consumption in relation to income Ugandan consumers in 2000 took only 24mls on average per unit GDP growth, the lowest in the region, figure 2-4 below. The implication is purchasing power may be less of a constraint to increased consumption in Uganda compared to its neighbors, if consumer interest and preferences for milk can be increased.

![Figure 2-4: Ratios of per capita milk consumption to per capita GDP for the year 2000](image)

source: ILRI report prepared for IFPRI/USAID, 2003

3. Different milk processing and marketing systems similar challenges

3.1. Public sector led dairy processing and marketing

1967 – 1993, Organized dairy marketing, Public sector led dairy processing;

- Milk processing, regulation and marketing monopolized by government parastatal company, Dairy Corporation Ltd (DCL);
- 40% of total milk production consumed at home (domestic use and calf feeding), while 60% is marketable surplus.
- 10% of marketable milk surplus goes through the formal sector, Dairy Corporation Ltd, while 90% is disposed of through the informal channels;
- Farm gate milk prices low but stabilized
- Milk producers marketing system weakly established and mostly targeting localized markets:
Current milk and dairy marketing challenges

- Independent milk producer groups but sell substantial portion of their surplus milk to DCL;
- Producer marketing groups which are completely dependent on DCL for marketing their milk.
- Producer marketing groups which operate completely outside the DCL.
- By 1993 there were 50 registered dairy cooperatives, associations and companies handling about 1% of the total marketable surplus of milk.

3.2. Private sector led dairy processing and marketing

1993 – Date, Liberalized milk and dairy product markets:

- Privatization of Dairy Corporation Ltd
- 30% of total milk production consumed at home (domestic use and calf feeding) while 70% is marketable surplus.
- 10 – 20% of marketable surplus goes through the formal value chain, while 80 – 90% is marketed raw though the informal supply channel.
- 16 dairy processing plants and mini-dairies registered by 2013.
- Over 65% milk processing and marketing handled by one processor, (SALL) – monopoly.
- Farm gate milk prices low and fluctuate severely. The report prepared by IFPRI and USAID, 2003 indicated that in the main milk producing area of southwestern real milk prices fell by 36% between 1995 and 2000.
- Farm gate milk prices determined by dairy processors with little or no input from dairy producers and/or producer organizations.
1. Korea Dairy Sector Statistics

In Korea livestock contributed 34.6% of total agricultural GDP (US $ 16 billion vs US $ 46.4 billion) in 2012. This contribution is projected to grow to 50% in 2030 by Korea Rural Economic Institute (KREI). Livestock direct and indirect contribution to national economy in 2012 amounted to US $ 580 and 400 respectively.

Livestock is fueling rural development; 6 out of 10 major agricultural products were livestock in 2012.

The development of the dairy industry in Korea can be traced way back in 1960s when the then President Park Chung-Hee stressed the importance of dairy farming in promoting rural development. He pushed for the establishment of the Law for Promotion of Dairy Industry.

Since 1980 significant changes occurred in the dairy industry; the size of dairy farms has been increasing to over 10 cows per farm, cold storage and insulated tank transport were introduced. The average milk yield per cow also increased to 6,000 kg per year. The raw milk collection system was centralized, public organized-led milk inspection, and quota system of milk production were considered.

In the 1990s, in order to address challenges of milk quality, quantity and price fluctuations, Korea Dairy Committee was established, and begun to control the centralized raw milk collection system in 1997. Raw milk prices were based on hygiene as well as butter fat content.

In 2014, the total head count of dairy cattle in Korea was 427,974 distributed in 5,867 farms.

Total milk production of raw milk recorded in 2013 was 2 million M/T, out of which 75.8% was marketed. Farm gate price of raw milk was US $ 1 and white market milk price was US $ 2.4 per liter. On the other hand the price of an in-calf dairy heifer was US $ 1,400 while that of a first-calver was US $ 3,000.

Dairy farm gross margins (difference between productions costs and farm gate milk price) increased from US $ 0.15 in 1999 to US $ 0.18 in 2012.

By 2013, per capita milk consumption in Korea was 71.3 kg, self-sufficiency rate for milk stood at 58.4%, table 3-1 below.

Table 3-1: Korea Dairy Industry in Figures, 2013

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of dairy farms</td>
<td>5,830</td>
</tr>
<tr>
<td>Number of cows per farm</td>
<td>73</td>
</tr>
<tr>
<td>Annual milk yield per cow, 2012</td>
<td>8,878 kg</td>
</tr>
<tr>
<td>Total producer output, 2012</td>
<td>US $ 2.22 billion</td>
</tr>
<tr>
<td>Turnover of processors, 2012</td>
<td>US $ 5.54 billion</td>
</tr>
</tbody>
</table>
### 2. Korea Dairy Farm Income analysis

Central goal of very farmer is to maximize income

- Income = Revenue – Costs
- Revenue = Farm gate price of milk x (Quantity or Raw milk sold + Quantity of Raw milk consumed at farm household level)
- Costs = Assorted Feed + Utilities + Disease control + Repair and maintenance + Loan interest + Rent + Employ wages + Depreciation costs of animal houses, machines, equipment, animals + Opportunity cost of owned land, labor, capital + others
- In order to maximize the income, revenue should be maximized and costs minimized.

Income maximization benefits from production of high quality milk. And the key to produce good quality milk include:

- Farmer’s mind awareness
- Health cows free from diseases especially mastitis
- Clean surroundings (barn, milkers, milking parlour), and equipment (milking machine, buckets, pipeline, milk cans, milk coolers etc.)
- Understanding the physiology of cows so as to calm them during milking.

### 3. Stabilization of milk and dairy products supply and demand

According to Song Joo-jo et al. (2003), the Koran Government in 1999 established Korea Dairy Committee (KDC) with an aim to stabilize the supply / demand and price of raw milk. Korea Diary committee introduced a milk price differentiation system to discourage overproduction in 2002. Under the system milk produced over the contracted amount is termed surplus and is paid for at a lower price compared to normal. Since its introduction, the differentiated price system for surplus milk has reduced the surplus milk volume from 500,000 tons in 2002 to 200,000 tones in 2012.

Consequently a two-tier system of milk collection emerged; one indirectly through KDC and another directly by milk processors, figure 3-1 below.
Figure 3-1: Milk and dairy products marketing channels in Korea

Table 3-2: Korea milk production and consumption trends

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Liquid milk</td>
<td>Production</td>
<td>188,365</td>
<td>1,242,140</td>
<td>1,447,376</td>
<td>1,310,882</td>
<td>1,361,958</td>
<td>1,392,204</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flavored milk</td>
<td>Production</td>
<td>90,312</td>
<td>94,31</td>
<td>224,132</td>
<td>380,317</td>
<td>276,160</td>
<td>291,307</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td>10,105</td>
<td>8,551</td>
<td>5,491</td>
<td>4,762</td>
<td>2,569</td>
<td>1,912</td>
</tr>
<tr>
<td>Whole milk powder</td>
<td>Production</td>
<td>6,532</td>
<td>15,177</td>
<td>5,630</td>
<td>6,645</td>
<td>4,163</td>
<td>4,031</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td>3,377</td>
<td>12,261</td>
<td>24,257</td>
<td>23,677</td>
<td>9,519</td>
<td>11,670</td>
</tr>
<tr>
<td>Skimmed milk powder</td>
<td>Production</td>
<td>3,018</td>
<td>18,302</td>
<td>20,746</td>
<td>25,784</td>
<td>19,586</td>
<td>31,422</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td>3,018</td>
<td>18,302</td>
<td>20,746</td>
<td>25,784</td>
<td>19,586</td>
<td>31,422</td>
</tr>
<tr>
<td>Cheese</td>
<td>Production</td>
<td>135</td>
<td>6,713</td>
<td>14,980</td>
<td>23,724</td>
<td>27,406</td>
<td>22,588</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td>123</td>
<td>4,744</td>
<td>44,189</td>
<td>68,290</td>
<td>88,605</td>
<td>17,588</td>
</tr>
<tr>
<td>Fermented milk</td>
<td>Production</td>
<td>98,084</td>
<td>352,896</td>
<td>529,603</td>
<td>482,438</td>
<td>502,604</td>
<td>573,672</td>
</tr>
<tr>
<td></td>
<td>Consumption</td>
<td>98084</td>
<td>352,896</td>
<td>526,109</td>
<td>476,533</td>
<td>496,704</td>
<td>566,910</td>
</tr>
<tr>
<td>Consumption per capita</td>
<td>Liquid milk</td>
<td>10.3</td>
<td>43.8</td>
<td>59.6</td>
<td>62.7</td>
<td>64.9</td>
<td>71.6</td>
</tr>
</tbody>
</table>

Source: Korea Dairy Yearbook
3.1. Stabilization of milk supply and demand by Korea Dairy Committee

- In order to maximize the income of dairy farms, Korea Dairy Committee operates a raw milk price differentiation system.
- Since 1993 price of raw milk incorporates premiums for hygiene and butter fat content.
- From 1999 the basic farm gate milk price and premiums were determined by Government through the Korea Dairy Committee (KDC).
- Since then farm gate prices of raw milk has never fluctuated, but continuously increased, contributing to stabilization of dairy farm income.
- In 2007, Korea Dairy Committee started a strict raw milk quota system; out of quota milk price US $ 0.1/liter (within quota milk price US $ 1).
- Milk quota can be sold to other farmers, but 20% has to be returned to KDC.
- Beginning 2014, farm gate milk price will incorporate basic price of raw milk as determined Korea Dairy Committee (linked to production costs) plus protein content on top of somatic cell count and levels of bacterial contamination.
- Raw milk production has stabilized at slightly more than 2 billion liters per year for the last decade, table 3-3.
- While prices for raw milk and market milk have increased steadily over time, farmers’ share of retail milk price has stabilized at around 42%, table 3-3 and figure3-2 below.

<table>
<thead>
<tr>
<th>Table 3-3: Trend in milk production and price, 2009 – 2014 (April)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production of raw milk (million M/T)</td>
</tr>
<tr>
<td>Farm price of raw milk (KRW/liter)</td>
</tr>
<tr>
<td>Price of white milk (KRW/liter)</td>
</tr>
<tr>
<td>Farm gate/Retail price ratio (%)</td>
</tr>
</tbody>
</table>

Source: Korea Dairy Yearbook
Most of the raw milk produced (75.8%, 2013) is utilized for liquid milk, the balance being processed into dairy products.
- Domestic milk production has stabilized at slightly more than 2 billion liters per year despite increase in dairy products imports since 1993, figure 3-4 above.
- Total supply and total use have been maintained more or less at the same level, with supply always a step ahead of demand.
- Raw milk pricing policy follows a system of premiums and penalty according to milk hygiene and quality, table 3-4.

Table 3-4: Milk price premiums and penalty for raw milk, 1,000 KRW = 1 US $

<table>
<thead>
<tr>
<th>As per milk fat content</th>
<th>&lt;3.0</th>
<th>3.1</th>
<th>3.2</th>
<th>3.3</th>
<th>3.4</th>
<th>3.5</th>
<th>3.6</th>
<th>3.7</th>
<th>3.8</th>
<th>3.9</th>
<th>4.0</th>
<th>4.1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>-103</td>
<td>-41.2</td>
<td>-30.9</td>
<td>-20.6</td>
<td>-10.3</td>
<td>0.0</td>
<td>10.3</td>
<td>20.6</td>
<td>30.9</td>
<td>41.2</td>
<td>51.5</td>
<td>56.65</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>As per Protein (KRW), 2014</th>
<th>&lt;3.0%</th>
<th>3.0%</th>
<th>3.1%</th>
<th>&gt;3.2%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Premium</td>
<td>0.00</td>
<td>4.00</td>
<td>11.65</td>
<td>19.41</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>As per Hygiene</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of microorganisms (MO)</td>
</tr>
<tr>
<td>Grade</td>
</tr>
<tr>
<td>-------</td>
</tr>
<tr>
<td>1A</td>
</tr>
<tr>
<td>1B</td>
</tr>
<tr>
<td>2</td>
</tr>
</tbody>
</table>
Proportion of highest quality of raw milk continued to increase as farmers respond positively to consumer demands as well as milk quality price premiums, figures 3-5 and 3-6 below.

Figure 3-5: Trend in raw milk grade by bacteria and somatic cell counts (1000 cells/ml, %)

Figure 3-6: Trend in average fat and protein content of raw milk (kg, %)
- Income and profitability per cow have increased during the last two decades by 63% and 88% respectively, figure 3-7.

4. The Korea Dairy Committee (KDC)

Korea Dairy Committee (KDC) is legal establishment created in 1999 under the Dairy Promotion Act and KDC is mandated to conduct business for the supply and demand or price stabilization of raw milk and milk products.

**Brief history of KDC**
- 1997, Dairy Promotion Act promulgated
- 1999, Korea Dairy Committee established
- 2002, Implemented ‘Differential pricing system for surplus milk
- 2005, Held the first ‘ilove milk speech contest’
- 2006, Joined International Dairy Federation, (IDF).
- 2007, Built up forecasting system of raw milk production.
- 2009, Published Korea Dairy Committee History of 10 Years.
- 2010, IDF Korea obtained Full membership.
- 2012, IDF Korea held ‘Regional Conference’ in Seoul.
- 2013, Implemented ‘Linkage System of Raw Milk Production’

**Organization**

Vision: To contribute to the development of the domestic dairy sector and related industries through:
- Stabilization of supply/demand of raw milk.
- Promotion of private sector-oriented price control.
- Encouragement of high milk quality.
- Enhancement of distribution structure.
- Establishment of the industry’s information powerhouse.
- Expansion of Korea dairy market through various campaigns.

Figure 3-8: KDC Organization Chart

Figure 3-9: Structure of KDC

General Meeting

• National Agricultural Cooperative Federation
• Korea Dairy Industries
• Korea Dairy and Beef Farmers Association
• (legal entities)

Board of Directors

• Representative of dairy farmers (3)
• Representative of dairy companies (4)
• Representatives of dairy cooperatives (4)
• Representative of consumer group (1)
• Representative of dairy science academia (1)
• Representative of government (1)

Advisory Committee

• Senior experts groups from production, processing, academia, government etc.
KDC Business Areas

**Figure 3-10: Market Stabilization - Business Goals**

1. To encourage robust growth of the milk market by stabilizing the supply and demand of raw milk.
2. To ensure fair distribution of raw milk by establishing the principle of market trade.
3. To stabilize the Korean dairy industry by adjusting the supply system for demand situation.
4. To pay reasonable prices to dairy farmers by increasing consumption of milk and milk products.

**Help Korea dairy industry thrive**

**Figure 3-11: Market Stabilization – Methods**

- **Fair management of Milk quota and Farm gate price**
- **Purchase raw milk in accordance with production contracts and provides it to raw milk consumers under supply agreements**
- **Surplus raw milk will be distributed with globally competitive prices (usually half the normal price)**
Figure 3-12: Relevant business Methods

Fair management of the raw milk purchase and sale market

- Considering outlook of raising milk cows, amount of milk production and consumption, and estimating supply amount for raw milk consumers

Effective administration of public funds for supply-demand control

- Promotes the use of Korean raw milk surplus by encouraging dairy companies to make various products from it.
- Subsidizes raw milk surplus

Figure 3-13: Milk Trade – Raw Milk Flow and Payments

1. Collecting raw milk
2. Delivering
3. The Korea Dairy Committee
4. Forwarding payments
5. Paying for raw milk
6. Signing contracts to mandate coops to collect milk

Dairy farms
Milk collection cooperatives
Dairy Processing Companies

(1) Collecting raw milk
(2) Delivering
(3) The Korea Dairy Committee
(4) Forwarding the payments
(5) Paying for raw milk
(6) Signing contracts to mandate coops to collect milk
(7) Subsidizing the payments
Information Service

- Website
  - www.dairy.or.kr
  - www.ilovemilk.or.kr
  - www.idfkorea.or.kr
- Publications
- Monthly Dairy Magazine
- School Milk Web Magazine

Raw milk inspection

The responsibility to inspect raw milk is vested with:
- Ministry of Food, Agriculture, Forestry and Fisheries
- Local Governments
- Milk collection cooperatives
Milk market price watch-dogs
- Consumers
- Civil society/consumer organizations
- Government / Korea Fair Trade Commission

5. Korea Milk Collection and Dairy Processing Cooperatives

5.1. Brief Overview of Agricultural Cooperative System in Korea

System and Organizational Structure, figures 3-16 a & b;
- Two-tier structure:
- Primary Cooperatives (Regional and Special Commodity Cooperatives). By end of 2012, Korea had 1,156 primary coops. (Regional coops. 1,084, Special commodity coops. 81)
- National Agricultural Cooperative Federation (NACF). As of end of 2012, NACF had 16 Regional (Banking Offices), 158 City / County Offices, 80 Subsidiaries and Affiliated Companies, and total membership of 2.4 million.
Figure 3-16a: Organizational Structure of Nonghyup, 2012

Member Farmers (2.4 million)

Regional Livestock Cooperatives 117

Regional Agricultural Cooperatives 967

City / County Offices 158

Regional Head (Banking) Offices 16

NACF

Figure 3-16b: The Agric. Coop. system is structured by corresponding or National Administration System

Nation

Special City

KU

Dong

Ban

Do (provi)

City or Kun (County)

Ub or Myoun (township)

Li (Village)

NACF

Regional (Banking) Head Offices (NACF)

City / County Offices (NACF)

Subsidiary and Affiliated Companies

Primary Cooperatives
Characteristics

- Multipurpose cooperatives: Engaged in three major businesses; Education and Support, Marketing and Supplies, and Banking and Insurance
- Two-tier system of organization; primary cooperatives and National Agricultural Cooperatives Federation.
- Banking combined cooperative banks with a commercial bank; Primary cooperatives operate cooperative banks and the national federation (NACF) does a commercial bank.
- Income structure highly depending on banking: Cooperative surplus from the banking sector is roughly 70 percent.

Management

Table 3-5: Major Indices of Member Cooperatives (2012)

<table>
<thead>
<tr>
<th></th>
<th>Regional Agric. Coop.</th>
<th>Livestock Coop</th>
<th>Vegetable or fruit coop.</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing &amp; supplies</td>
<td>281,521</td>
<td>141,216</td>
<td>37,039</td>
<td>459,776</td>
</tr>
<tr>
<td>Deposits of Mutual Credit</td>
<td>1,744,205</td>
<td>346,607</td>
<td>76,475</td>
<td>2,167,287</td>
</tr>
<tr>
<td>Loans of Mutual Credit</td>
<td>1,161,674</td>
<td>252,961</td>
<td>53,607</td>
<td>1,468,242</td>
</tr>
<tr>
<td>Members’ contribution</td>
<td>56,219</td>
<td>10,559</td>
<td>2,580</td>
<td>69,358</td>
</tr>
<tr>
<td>Dividend</td>
<td>5,864</td>
<td>1,091</td>
<td>241</td>
<td>7,196</td>
</tr>
<tr>
<td>Dividend rate of contrib.</td>
<td>5.57</td>
<td>5.8</td>
<td>5.4</td>
<td>-</td>
</tr>
</tbody>
</table>

Table 3-6: Major Management Indices for NACF (2012)

<table>
<thead>
<tr>
<th></th>
<th>Agric. Eco</th>
<th>Livestock Eco</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing &amp; supplies Businesses</td>
<td>186,173</td>
<td>57,430</td>
<td>243,603</td>
</tr>
<tr>
<td>NACF Head Quarter</td>
<td>147,483</td>
<td>37,906</td>
<td>185,389</td>
</tr>
<tr>
<td>Subsidiaries</td>
<td>38,690</td>
<td>19,524</td>
<td>58,214</td>
</tr>
<tr>
<td>Gross business revenue</td>
<td></td>
<td></td>
<td>189,621</td>
</tr>
</tbody>
</table>

Development Stages

- Establishment of Agricultural Cooperatives (1960)
- Foundation of Multipurpose Cooperatives (1961 – 1968)
- Merging of agricultural bank and agricultural cooperatives – new Agricultural Cooperatives
- One stop rural service center (purchasing farm inputs and living goods, marketing of farm products, utilities, banking, insurance, etc.)
- Consolidation of member cooperatives; from 21,042 coops. with 82 members each to 1,549 coops. (Township organizations) with 1,331 members each.
- Streamline three-tier organization into two-tier system
### Separation of livestock Cooperatives from Agricultural Cooperatives

- The Chairperson of NACF and Presidents of member cooperatives were elected directly by members.
- Autonomy in management was improved by eliminating the prior consent of new business plans and budgets by the Minister of MAF.

**Cooperative Reforms (1994 – date)**
- Introduction of Commodity Processing Complexes and consumer outlets.
- As a response to challenges brought by trade liberalization, Nonghyup opened the “Hanaro Club” a large discount supermarket. The Club introduced a direct sale system between producers and customers, leading to sharp reductions in retail prices while keeping fair prices for farmers. This positive outcome was as a result of the centers shortening the distribution channels from 5-6 steps to 2-3 steps, thereby reducing costs substantially.
- NACF businesses were restructured into Economic Holdings and Finance Holdings.
- This implies a return to early starts, specializing system in businesses.

### 5.2. Agricultural Cooperatives Business and Activities

#### Agricultural Marketing

- **Marketing Infrastructures in Processing Areas**
  - Strengthening production area marketing by the government
  - Allied marketing projects between agricultural cooperatives
  - Joint marketing: selling together to increase bargaining power, saving shipping costs, grading to create value and pooling prices
  - Nurturing production organizations
  - Joint Marketing Associations, National Farming Group Associations
  - Distribution facilities: collection points, warehouses, cold storage, fruit sorting, Agricultural Processing Center (APC), Drying Storage Center (DSC), Rice Processing Center (RPC), Livestock Processing Center (LPC), etc.

- **Marketing Activities in Consumption Areas**
  - NACF and member cooperatives operate a number of distribution facilities for agricultural products to effectively compete in consumption areas.

- **Activities for Demand-Supply Stabilization and Distribution Promotion**
  - The government operates the Demand-Supply Stabilization Program for agricultural products (DSSP) that aims to stabilize prices through contracts between cooperatives and farmers, storing, disposing products in the fields.
  - Agricultural cooperatives implement the DSSP as a major counterpart of the government.
  - The DSSP includes support for quality control, package standardizing, distribution infrastructures, and marketing information.
Supply of Farm Inputs and Consumer Goods

- Fertilizers, farm chemicals, farm machinery, seeds, polyethylene films, feeds, consumer goods, etc.
- Most primary cooperatives operate chain stores selling living goods and farming inputs
- In the past, supplying farm inputs and living goods was main business of primary cooperatives which dominated rural markets

Banking business

- Mutual Credit (saving and credit in the cooperatives)
- A channel of supplying policy loans
- Marking nationwide network with the NACF
- Cooperative insurance

Agricultural finance policy has focused on mainly farmer’ use of credit

- By supplying cheap policy loans
- Encouraging the agricultural cooperatives to mobilize funds in urban as well as rural
- Providing the cooperatives monopolistic status of agricultural finance
- Supporting incentives against lending risks

NACF has successfully conducted its roles with respect to agricultural finance

- As funding source, umbrella organization of its member cooperatives, and agency roles for government
- Grown as one of the leading bank and trying to make a leading financial group covering whole financial services.
Figure 3-17: NACF Agricultural Finance System

Characteristics of agricultural cooperative banking:
- Monopolistic organization of agricultural finance.
- Getting competitive edge by operating multipurpose business.
- Deposit was open, but lending was not in the past.
- Credit guarantee service is available.
Figure 3-18: Flow of agricultural fund through the agricultural cooperative channel

The Mutual Credit Special Account (MCSA) of NACF plays a central bank role of Mutual Credit:
- Monitoring the business performance of member cooperatives.
- Receiving deposits as reserve requirement.
- Intermediating funds by taking surplus fund and providing loans for member cooperatives.

- Fund management for member cooperatives is getting more important.

- NACF influences on rural financial markets through guiding member cooperatives’ interest policy:
  - For example MCSA encouraged the member cooperatives to lower Mutual Credit lending rates to 8% from over 10% level by providing subsidies in 2003.

Cooperative Insurance

- Nong Hyup has operated cooperative insurance since 1961
  - NH Life Insurance
  - NH Property Insurance

Extension Services

- Farming guidance
- Living guidance
5.3. Roles and Activities of Agricultural Cooperatives in Korea

- Money Pipeline to Rural
  - Agricultural finance policy has focused mainly on farmers’ use of credit
  - By supplying cheap policy loans
  - Encouraging the agricultural cooperatives to mobilize funds in urban as well as rural
  - According cooperatives monopolistic status of agricultural finance
  - Supporting incentives against lending risks
  - Agricultural Cooperatives have played a role of money pipeline for agriculture
  - NACF has successfully made funds inflows from urban to agriculture.
  - Mutual Credits (savings and credit in the coops.) has successfully absorbed informal finance in rural, table 3-7 below.
  - Member cooperatives construct a strong nationwide financial network with NACF.

Table 3-7: The changes in informal financial share and interest rates, (Unit %)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>The informal market share of farm household debt</td>
<td>60.0</td>
<td>63.6</td>
<td>49.0</td>
<td>28.9</td>
<td>13.9</td>
</tr>
<tr>
<td>Interest rates:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informal markets (A)</td>
<td>54.0</td>
<td>49.2</td>
<td>46.8</td>
<td>26.4</td>
<td>21.0</td>
</tr>
<tr>
<td>Mutual Credit loan (B)</td>
<td>28.0</td>
<td>22.0</td>
<td>22.0</td>
<td>14.5</td>
<td>14.0</td>
</tr>
<tr>
<td>A-B</td>
<td>26.0</td>
<td>27.2</td>
<td>24.8</td>
<td>11.9</td>
<td>7.0</td>
</tr>
</tbody>
</table>

- Distributor of Farm Inputs and Living Goods
- Marketing Agency of Farm Products
  - Farmer members want to sell products with the help of cooperatives
  - The Agricultural Cooperatives tried to organize producers with joint activities such as joint-marketing, joint –producing, joint selection or grading.
  - However, the outcome of marketing businesses of farm output has been poor, which strongly pressed on consecutive reforms in 1990s.
  - Member cooperatives shared 42% of total sales of agricultural products in 2009, but less than 5% was effectively controlled.
  - Most cooperatives failed to lead members, while members did not keep their words for joint activities.
- Regional Center for Rural Society
  - The Agricultural Cooperatives function as centers of business, information, and communication in rural areas
  - One-stop shopping center including buying living goods and farm inputs, selling their products, using banking, training and education, information etc.
  - The member cooperatives are required to expand their function as a regional center including welfare services, administrative services, operating community businesses.
5.4. Saemaul Movement and development of cooperatives in Korea

Agricultural cooperatives in Korea were established in the 1950s, mainly to distribute the limited supply of chemical fertilizers and credit to individual farmers on one hand, and to purchase government rice and barley from individual farmers on the other hand.

The Saemaul Movement was a historical epoch for the development of agricultural cooperatives, particularly for the Primary Agricultural Cooperatives which were organized in sub-county units throughout the country.

In implementing Saemaul projects, farmers learned the importance of cooperation in solving rural problems, and they were motivated to participate in primary agricultural cooperatives. Hence, the Saemaul Movement can be stated as a movement of farmers to participate in the existing agricultural cooperatives organized from top to down.

6. The Case of Seoul Dairy Cooperative (SDC)

Seoul Dairy Cooperative was started about 76 years ago. Based on its core values of consumer belief and trust and an efficient organization and management system, SDC has become the No. 1 dairy brand in Korea.


Seoul Dairy Cooperative (SDC) is envisioned as a company being loved by customers and being always with customers.

- The first dairy company in Korea to have its entire product line awarded HACCP certification. HACCP is a quality guarantee system to ensure safe and sanitized products.
- Established cold chain system to ensure 5°C freshness throughout the entire production process from milking, collection, sanitization, inspection and processing to distribution.
- SDC is the only company that performs Milk Master System in which a veterinarian in charge of each cow is appointed.
- Top quality milk, The First Grade A milk. To produce 1st Grade A raw milk, SDC make regular farm inspections, more than twice per month.

6.2. Brief History

- 1937, Establishment of Kyungsung Farming and Dairy Co-operative
- 1945, Renamed Seoul Milk Trade Association
- 1962, Affiliated with National Agricultural Cooperative Foundation Inaugural meeting of Seoul Dairy Co-operative
  Dedication of first dairy plant in Jungnangkyo
- 1975, Dedication of second dairy plant in Yongin
- 1981 Affiliated with National Livestock Cooperative Federation
- 1984 Relocation of 1st dairy plant to Yangju
- 1986 Completion of head quarter’s complex
- 1989 Completion of third dairy plant and R & D Center in Ansan
- 1993 Establishment of Seoul Dairy Distribution Services Co. Ltd
- 1993 Completion of UHT aseptic Milk Plant in Ansan
- 2005 Completion of 4th dairy plant in Geochang
- 2007 Completion of cheese plant at Geochang
- 2013 Celebration of 76th anniversary of Seoul Dairy Co-operative.

<table>
<thead>
<tr>
<th>Table 3-8: SDC in numbers, 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cooperative dairy members</strong></td>
</tr>
<tr>
<td>Number of dairy cattle owned by members</td>
</tr>
<tr>
<td>Milk collection per day (tons)</td>
</tr>
<tr>
<td>Sales volume per day (thousands)</td>
</tr>
<tr>
<td>Number of staff members</td>
</tr>
</tbody>
</table>

Source: Seoul Dairy Cooperative bulletin
### Figure 3-19: Organizational Structure of SDC

<table>
<thead>
<tr>
<th>President</th>
<th>General Assembly Board of Directors</th>
<th>Auditor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Manager for Management Support</td>
<td>Executive Manager for Dairy Farming Support</td>
<td>Auditor Support Team</td>
</tr>
<tr>
<td>Management Support Dept.</td>
<td>Dairy Business Division</td>
<td></td>
</tr>
<tr>
<td>Management &amp; Information Dept.</td>
<td>Dairy Farming Support Dept.</td>
<td></td>
</tr>
<tr>
<td>Management &amp; Planning Dept.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Executive Director</th>
<th>Executive Manager for Finance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Manager of Sales</td>
<td>Executive Manager for Production &amp; Engineering</td>
</tr>
<tr>
<td>Marketing Dept.</td>
<td>R &amp; D Center</td>
</tr>
<tr>
<td>Sales Dept. (3)</td>
<td>Customer Service Dept.</td>
</tr>
<tr>
<td>Distribution Dept. (2)</td>
<td>Quality Guarantee H/Os</td>
</tr>
<tr>
<td>Distribution Branch Dept.</td>
<td>Quality Guarantee Dept (4)</td>
</tr>
<tr>
<td>Physical Distribution Dept.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Finance Services</th>
<th>Dairy Farming Assistance Centers (9)</th>
<th>Branch Offices (17)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(10 Branches)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3. Seoul Dairy Business Scope

6.3.1. Dairy Support Center

SDC has nine dairy farming support centers that provide a variety of services including technical support like how to use dairy equipment, prevention of diseases, breed improvement and good animal husbandry practices in general. In addition the centers offer “Dairy Farming Helper Program”, which involves providing a helping hand for farmers when in need.

6.3.2. Collective purchase of goods and services for farmers

In order to reduce on costs SDC either makes collective purchases or produces goods and services needed for dairy farming on its own.

6.3.3. Best quality cow milk, production of various related dairy products

Using high quality raw milk produced by its farmers, SDC makes various dairy products that are sold at value added prices. Besides liquid milk, SDC produces yogurt, milk beverages, cheese, powdered milk, butter, condensed milk and other products. Through constant research SDC continue to produce new innovative products to suit diverse customer preferences.
- The Milk: White milk, modified milk, processed milk and others; - 20 products
• White milk, Lacto Free, MBP Fat Free Milk, Black Soybean Milk, Whole Milk Cheorwon Farm Pure story, Milk For Kids, Milk For Babies, Milk For Home Delivery, Fresh Milk, Fresh Lowfat Milk, Fresh Fat Free Milk, Calcium Milk, Lowfat Milk, MBP Milk, Barista’s Milk, Coffee Milk, Lowfat Flavored Milk, Flavored Milk, UHT Aseptic and Red Ginseng Milk.

- Yogurt; 16 products
  • Tube Type Yogurt, Drinking Yogurt For Kids, Yogurt Drink, Enfant Plus, Drinking Yogurt, Natural Yogurt, Jang Master, MBP Yogurt, Yoheim Lowfat Yogurt, Drinking Yogurt, Topping Yogurt, Natural Yogurt, Yoheim Lowfat Yogurt, Yoheim Smoothie, SDC Plain Yogurt, Premium Fresh Cream Yogurt.

- Dairy Beverages and Fruit Juices; - 18 products
  • Fresh Juice, Organic Juice, Fruit Juice Duet, Majito, Pina Colada, Fermented Drinks, Diluted Juices, Diluted Juices, Soy Milk, Black Sesame & Blacksoy Drink, Black Soybean Milk-Oduyu, Mocha Latte, Dairy Beverage, Strawberry Au Lait, Doutor The Expert, Starbucks, Mocha Latte, Dairy Beverage, Strawberry Au Lait, Doutor Coffee, Doutor The Blendy.

- Cheese and Butter; - 25 products.

- Powdered Milk and Condensed Milk; - 5 products.
  • Whole Milk Powder, Skim Milk Powder, Whipping Cream, Fresh Cream, Condensed Milk.

6.3.4. Financial services

On top of financial assistance for raising livestock, increase savings for members can be realized in such areas as independence savings and time deposits. The SDC provides supplementary financial services such as collection, tax and public charges and others.

6.3.5. Research and Development Center (R&D)

SDC R&D center is equipped with advanced equipment and top level researchers. Every year R&D center research results are published in academic journals, while a number of manufacturing know-how receives patents. The R&D center plays a pivotal role of increasing the competitiveness of Korean dairy products.
6.3.6. High – Tech Factory

SDC has a total of 4 milk processing plants with the first plant built in 1975. Factories are equipped with advanced production systems which enable effective sanitation and automatic mass production operations. This in turn ensures quality products and reduced production costs.

Sanitation from milking to product inspection; ensuring clean water, clean air, a pleasant environment and good feed raise healthy milking cows which produce clean quality milk. Thorough sanitation checks including regular checkups on milking cows, milking machine tests are done to ensure low somatic cells and bacteria counts. In return SDC produces First Grade A whole milk.
Discussion and Recommendations

1. Agricultural Cooperative Marketing System (ACMS)

- Agricultural Cooperative Marketing System can address the challenges faced by smallholder dairy farmers in Uganda in many ways particularly the following:
  - Improve bargaining power when dealing with other businesses;
  - Reduce costs;
  - Obtain products or services otherwise unavailable;
  - Obtain market access or broaden market opportunities;
  - Improve product or service quality; and
  - Increase income.

- In Uganda agricultural cooperatives are currently undergoing restructuring process spearheaded by Uganda Cooperative Alliance (UCE).

- Uganda Cooperative Alliance is promoting a new Tripartite Cooperative Model. The model is constructed on three pillars that complement one another:
  - Area Cooperative Enterprises (ACE);
  - Rural Producer Organizations (RPO); and
  - Savings and Credit Cooperative Organizations (SACCOs)

- The tripartite cooperative model fundamentally strives to reorganize and strengthen grassroots farmer organizations in order for them to be autonomous and financially stable. The major difference between ACE and the old Cooperative Unions is found in resizing of the cooperatives to comprise of 5 – 20 RPOs located in a limited area usually a sub-county.

- The link between ACE, RPOs and SACCOs is designed to encourage farmers’ savings and as well as promoting credit accessibility.

- This model can greatly benefit from experiences of Korean Agricultural Cooperatives in many ways but especially in the areas below:
  - A two-tier cooperative structure comprised of Primary Cooperatives (regional and special commodity cooperatives) and National Agricultural Cooperative Federation
  - Achieve viable size of primary cooperatives
  - Target regional level multipurpose cooperatives (avoid the challenge of having to consolidate small non-viable cooperatives)
  - Strongly supportive cooperatives policies
  - Government should make agricultural cooperatives supportive Laws and policies.
  - Korean Multipurpose Cooperative Model not only creates strong structural and functional linkages between the agricultural bank and agricultural cooperatives but also involves a combination of cooperative and commercial banks:
    - Primary Cooperatives operate cooperative banks and
    - National Agricultural Cooperative Federation operates a commercial bank.
  - Achieving a viable size of primary cooperatives is very critical for the efficient and effective management of cooperatives
There is need for a strong and effective National Agricultural Cooperatives Federation (NACF) to oversee, train, mentor, support and regulate cooperatives.

Although government’s involvement in agricultural cooperatives is desirable and necessary, the relationship should not become a barrier to cooperative development.

Regular reforms of cooperative policies to march changing farming community needs and challenges.

Cooperatives businesses and activities include:

- Education and support
- Marketing and supplies (producing, marketing, processing and even consuming)
- Banking and insurance
- Gender mainstreaming.

Smallholder dairy farmers in Uganda would be better served by special commodity cooperative model:

- Dairy Processing Cooperatives.
- Milk Collection Cooperatives.

2. Stabilization of milk / dairy products supply and demand

In 1967 Korean Government launched the Dairy Promotion Act, in which it provided authority for minimum reference prices for raw milk. The rationale was to protect dairy farms from milk collectors who may have had more bargaining power than farmers and also to guarantee profit to dairy farmers. This objective was later passed on to Korea Dairy Committee (KDC) in 1999.

The Government of Uganda can benchmark these policies:

- Private sector-oriented milk price control to boost stable and profitable dairy farming. The price control mechanism that involves all dairy sector stakeholders is expected to help farmers overcome the current challenges of weak bargaining power as they continue building strong producer organizations. Ultimately it boils down to farmers capturing a remunerative share of the retail price of milk that is higher than the current 17% which is the lowest in the region. A sustainable and progressive approach needs to include all from farmers to consumers operating under a lawful organization similar to Korea Dairy Committee. Dairy Development Authority can play such roles although the current Law would need to be amended. In Korea it’s only the farm gate price of raw milk that is controlled leaving consumer prices to be determined by market forces.

- Introduction of price premiums and penalty to promote raw milk quality. Poor quality of milk has far reaching economic consequences on the dairy industry, ranging from high rates of post-harvest wastage to compromised consumer safety. Korean experience has demonstrated that a properly managed system of raw milk price premiums and penalty based on quality and hygiene can stimulate sustainable production of the highest quality of raw milk. Moreover such policies are easily implemented by the private sector themselves, as Korean experience has shown.
Establish central dairy sector information center.
A functional dairy sector information system is very vital for successful dairy industry. Dairy Development Authority should establish and manage a dairy sector information center. In Korea again this mandate lies with Korea Dairy Committee. The DDA should be able to make monthly and annual dissemination of dairy sector information through publications using books and websites.

Milk and dairy products consumption.
Korea and Uganda are both currently faced with low milk consumption challenge. Korea milk consumption per capita of 71.6 kg is only slightly higher than Uganda’s 56.4 kg. In Korea the KDC has employed various schemes to drive up milk consumption which include; school milk program, farm excursion, consumer engagement marketing, dairy nutrition marketing and tackling anti-dairy campaigns. In addition KDC supports exports and dairy products innovations. Uganda’s dairy sector through Dairy Development Authority can pursue similar approaches to boost milk consumption.
Chapter 5

1. Sharing of Korean Dairy Sector Experience with Uganda Dairy Sector Stakeholders

Objective
1. Discuss findings of the study on Korean Dairy Sector experience with key stakeholders in Uganda.
2. Create dairy sector consultative platform

Output
1. Three regional workshops attended by 246 participants
2. Dairy Sector Consultative Platform established

2. Support / promote dairy producers cooperatives in three pilot districts of Lyantonde, Kiruhura and Wakiso

Objectives
1. Improve dairy cattle productivity quantitatively and qualitatively.
2. Increase dairy farmers’ income through improved milk handling and increased milk sales.

Strategies
1. Carry out baseline surveys on dairy cooperatives in the three pilot districts to identify gaps and challenges.
2. Conduct training and demonstrations on:
   a. Cooperatives roles and benefits
   b. Cooperative organization and management
   c. Dairy feeding and nutrition
   d. Dairy breeds and breeding
   e. Production of high quality milk
   f. Prevention and control of livestock pests and diseases
   g. Keeping of dairy farm records
   h. Saving and credit skills
   i. Milk processing and marketing
3. Savings and credit services
   a. Seed credit fund – infrastructure development
   b. Mutual credit fund – Farm operations
3. Review / reform dairy sector policies

Objectives
1. Review performance of current dairy sector policies
2. Suggest / recommend policy changes

Strategies
1. Policy review consultancy services
2. Stakeholders workshops
REFERENCES

## 연구자료 D387
Enhancing Smallholder Dairy Farmers’ Marketing Opportunities in Uganda

<table>
<thead>
<tr>
<th>등록</th>
<th>제6-0007호(1979. 5. 25.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>인쇄</td>
<td>2014. 12.</td>
</tr>
<tr>
<td>발행</td>
<td>2014. 12.</td>
</tr>
<tr>
<td>발행인</td>
<td>최 세 균</td>
</tr>
<tr>
<td>발행처</td>
<td>한국농촌경제연구원</td>
</tr>
<tr>
<td></td>
<td>130-710 서울특별시 동대문구 회기로 117-3</td>
</tr>
<tr>
<td></td>
<td>02-3299-4000</td>
</tr>
<tr>
<td>인쇄</td>
<td>삼신인쇄</td>
</tr>
<tr>
<td></td>
<td>02-2285-6477</td>
</tr>
</tbody>
</table>

ISBN 978-89-6013-652-6 93520

- 이 책에 실린 내용은 한국농촌경제연구원의 공식 업무와 반드시 일치하는 것은 아님입니다.
- 이 책에 실린 내용은 출처를 명시하면 자유롭게 인용할 수 있습니다.
- 무단 전재하거나 복사하면 법에 처해집니다.