



REGIONAL DAIRY TRADE POLICY PAPER

**Researched and published under the auspices of COMESA and EAC in
collaboration with the RATES Center, Nairobi and ASARECA/ECAPAPA,
Entebbe; with support from USAID/REDSO, Nairobi.**

September 2004



Table of Contents

| | |
|--|-----------|
| EXECUTIVE SUMMARY | I |
| 1.0 BACKGROUND | 1 |
| 1.1 Rationale | 1 |
| 1.2 Purpose and objectives of the study | 3 |
| 1.3 Scope and methodology | 3 |
| 1.4 The structure of the report | 4 |
| 2.1 MILK PRODUCTION | 5 |
| 2.2 Dairy processing industry | 11 |
| 3.0 TRADE IN DAIRY PRODUCTS AND REGIONAL MARKET POTENTIAL | 14 |
| 3.1 Production versus Consumption of milk | 14 |
| 3.2 Imports of dairy products | 16 |
| 3.3 Exports | 18 |
| 3.4 Regional market potential for dairy products | 20 |
| 4.0 TRADE POLICY AND REGULATORY ENVIRONMENT | 21 |
| 4.1 COMESA and EAC Trade Regimes | 21 |
| 4.2 Dairy Trade policies and regulations in EAC and COMESA countries | 22 |
| 5.0 INTEGRATING THE INFORMAL MILK MARKETS INTO DOMESTIC AND REGIONAL MILK SUPPLY CHAINS IN EASTERN AND CENTRAL AFRICA | 41 |
| 5.1 Overview | 41 |
| 5.2 The nature of informal milk markets in the region | 41 |
| 5.3 Role of the informal traders in the milk market value chain | 42 |
| 5.4 Impetus for prevalence of informal milk traders in the value chain | 42 |
| 5.5 Proposed strategies for transforming the informal sector | 43 |
| 6.0 STRATEGIES FOR EXPLOITATION OF THE REGIONAL MARKET POTENTIAL | 46 |
| 6.1 Perspective | 46 |
| 7.0 PROPOSED POLICY RECOMMENDATIONS FOR ENHANCING TRADE IN DAIRY PRODUCTS | 50 |
| 7.1 Import controls/restrictions | 50 |
| 7.2 Tariff and non tariff charges | 50 |
| 7.3 Product quality standards | 50 |
| 7.4 Sanitary requirements and Food Safety Standards | 51 |
| 7.5 Customs documentations and procedures | 52 |
| 7.6 Proposed strategies for integrating the informal milk trade to the formal milk market value chain | 52 |
| 7.7 Strategies for exploitation of the regional market potential | 53 |
| REFERENCES | 54 |

| | |
|--|-----------|
| ANNEX 1 | 1 |
| PRODUCTION OF FRESH COW MILK IN COMESA AND EAC..... | 1 |
| ANNEX 2 | 2 |
| EXPORTS OF DAIRY PRODUCTS BY COMESA AND EAC COUNTRIES, 1997-2003 | 2 |
| ANNEX 3 | 7 |
| PRODUCT QUALITY STANDARDS..... | 7 |
| ANNEX 4 | 46 |
| SANITARY REQUIREMENT | 46 |

List of Acronyms

| | |
|---------|---|
| AI | Artificial Insemination |
| ASAL | Arid and Semi-arid Land |
| ASARECA | Association for Strengthening Agricultural Research in Eastern and Central Africa |
| CBS | Central Bureau of Statistics |
| COMESA | Common Market for Eastern and Southern Africa |
| EAC | East African Community |
| ECF | East Coast Fever |
| EU | European Union |
| DRC | Democratic Republic of Congo |
| DRSK | Dairy Recording System of Kenya |
| GDP | Gross Domestic Product |
| ICRAF | International Centre for Research in Agro-Forestry |
| IGAD | Inter-Governmental Authority on Development |
| ILRI | International Livestock Research Institute |
| KCC | Kenya Cooperative Creameries Limited |
| KDB | Kenya Dairy Board |
| LPS | Lactoperoxidase System |
| MoALD | Ministry of Agriculture and Livestock Development |
| MoALD&M | Ministry of Agriculture, Livestock Development & Marketing |
| MoARD | Ministry of Agriculture and Rural Development |
| MoLD | Ministry of Livestock Development |
| MoLFD | Ministry of Livestock and Fisheries Development |
| NGO | Non-governmental Organisations |
| OIE | Office International des Epizooties |
| PRSP | Poverty Reduction Strategy Paper |
| PH | Public Health |
| SDP | Smallholder Dairy (R&D) Project |
| SDDL | Senior Deputy Director of Livestock Production |
| SHG | Self Help Group |
| USA | United States of America |
| WTO | World Trade Organisation |

EXECUTIVE SUMMARY

Introduction

The dairy sector is one of the critical sectors in COMESA and EAC, with high potential for improving food security and welfare. Recent analysis provides clear evidence of increasing demand for dairy products (and other foods of animal origin) in Sub Saharan Africa (SSA) and other developing regions of the world as a result of rapid population growth, urbanization and increasing purchasing power. The analysis estimated that between 1993 and 2020, the annual demand for milk and dairy products in developing countries would grow at between 3.2% and 3.5% annually, implying that the demand will more than double over the period, from 168 million tonnes in 1993 to about 400 million tonnes in 2020. This poses a formidable challenge to these countries; especially because milk production is presently estimated at only 200 million MT. Presently milk production in COMESA and EAC is estimated at only 12million MT tonnes against a demand of 14million metric tonnes¹.

Demand for milk is also expected to increase in the COMESA and EAC region, from the current average per capita consumption of 36 litres per year to at least the level that the highest milk consuming country (Mauritius) has attained, i.e 90 litres per year (implying an overall regional milk demand of 36 million metric tonnes). If one was to use the WHO recommended per capita consumption of milk, which is 200 litres per year, the projected demand would be even more phenomenal.

This projected growth in demand provides market opportunities and benefits for dairy industries in this region. The benefits include income-generating opportunities for producer households and rural and urban market intermediaries, through their participation in processing and marketing.

In addition, rising world prices for internationally traded dairy products and prospects for the reduction, or even the removal, of export subsidies by industrialized countries will contribute to increased prices for producers in the region. These increasing market opportunities for dairy production represent exciting challenges and opportunities for improving food security, income generation and employment in COMESA and EAC.

In order to stimulate development of the dairy sector in the region, specific priority issues that need addressing were identified in consultation with COMESA, EAC, ILRI and IFPRI such as: improving market efficiency through reduction of marketing costs and improvement of marketing institutions; improving delivery of dairy farming services; and, understanding the nature and determinants of comparative advantage in dairy farming in order to maximise benefits from it. Removing barriers to intra-regional trade dairy products and inputs (e.g., feeds and genetics) is considered an important mechanism of overcoming some of the underlying constraints in dairy farming.

A pre-requisite for increasing intra-regional trade is rationalization of policies, procedures, regulations, rules, standards and grades that govern the dairy sub-sectors in individual countries and their harmonization between the countries. The process of

¹ Estimated using the region's average milk consumption of 36 litres per year.

rationalisation and harmonization will contribute to creating an enabling institutional environment for dairy markets in the region.

The challenge of rationalization and harmonization of policies therefore requires a critical look at both the relevant technical and economic issues by informed stakeholders at all levels, and a keen awareness that optimal outcomes must be based on tradeoffs between the technical issues and the economic interests of stakeholders. In addition, an important underlying consideration is the ability of individual countries to effectively implement/enforce the agreed on standards.

Purpose and objectives of the study

Purpose

The general purpose of this study is to assess policy and regulatory constraints to trade in dairy products in the COMESA and EAC region. Accordingly, the design of the study is set to scope SPS issues, quality standards, tariffs and non-tariff charges, customs clearance documentation and procedures as they relate to trade in dairy products. In addition, the study explores strategies for integrating informal trade in dairy products into the formal value chain; as well as strategies for promoting private sector alliance in the region for purposes of exploiting potential in the dairy products' trade in COMESA and EAC. The primary output of the study is a proposed regional dairy trade policy platform in form of a set of recommendations to address the identified policy and regulatory constraints to intra/extra regional trade in dairy products.

Objectives

To achieve the purpose of this study, the following specific objectives were pursued through country level baseline studies as well as the regional policy paper: -

1. In-depth analysis of the structure of the dairy sector in terms of the size of the dairy farming industry and production of raw milk; types of processed dairy products and installed capacities of the processing industries; source of primary raw material for the processing industries (distinguishing between regional and extra regional sources); production in volume and value of the processed products for the period 1997-2003.
2. Dairy sector value chain highlighting volume and prices along the chain and creating a ready to use inventory of processors, distributors and producers of dairy products.
3. Quantification of formal imports and exports of dairy products by type (as defined in the tariff book); sources and destinations for the period 1998-2003.
4. Trade policies and regulations governing trade in dairy products, encompassing tariffs, sanitary requirements, and quality and safety standards.
5. Constraints faced in accessing regional market (policy and regulatory provisions in destination or source country and other forms of constraints).
6. Identification of specific policies, procedures, regulations, rules, standards and grades for national rationalisation and/or harmonization.
7. In consultation with stakeholders in the regional, propose a regional dairy trade policy and regulatory framework.

Scope and methodology

The study covered the following countries: Ethiopia, Kenya, Malawi, Mauritius, Tanzania, Rwanda, Uganda and Zambia, which strand the COMESA and EAC region. These countries accounted for 46% of total milk production over the period 1997-2003 and over 60% of regional trade in dairy products. In each of the eight countries baseline studies were conducted by National Resource Persons and national workshops were held to deliberate on the findings before synthesis of the national reports into the regional policy paper.

Potential for regional trade in dairy products

Using extra regional imports and intra regional exports as a proxy for the regional market size, the EAC and COMESA market for dairy products is about US\$120 million per year. If we were to factor market growth dynamics in the form of prospects for increased per capita income and possible increase of the per capita milk consumption from the current average level of 36 litres per year to the WHO recommended level of 200 litres per day, the future market for dairy products in the region looks bright! Presently, over 95% of the COMESA and EAC market of dairy products is serviced by extra regional imports. Of this, 80% of are sourced from Denmark, South Africa, Canada, USA, France, New Zealand, Australia, the Netherlands and Poland.

Proposed Recommendations for enhancing trade in dairy products

Import controls/restrictions

a) Abolish import export authorization system

The import authorization system, which is not for purposes of enforcing SPS and Food Safety standards, should be abolished. By so doing the role of domestic market protection will be relegated to introductions of tariffs on dairy products. This is the practise recognized under the GATTs.

b) Devise a regional mechanism for detecting cases of dumping and subsidies

There is need to develop a regional mechanism for detecting cases of subsidized and dumped milk products. This will address the reasons behind protective system for import authorisation.

c) Define import restriction trigger threshold

To introduce objectivity for countries pressing to retain policy on domestic industry, a threshold pegged to perceived injury on domestic industry needs to be defined and agreed upon by the COMESA and EAC member States. Such a threshold, whose information should be shared among the member States, should be used as a trigger for imposition of import restrictions/controls on regionally sourced products.

Tariff and non-tariff charges

a) Reduce import duty on intra-regional trade in dairy products to zero

COMESA countries, which are not yet members of the FTA, should consider fast tracking reduction of duty on intra-regionally sourced dairy products to zero. For

EAC, Uganda and Tanzania may need to re-categorize dairy and dairy products to Category A so that duty on imports from Kenya may be reduced to zero on the launch of the customs union implementation program in 2005.

b) Regional dairy trade development policy

A regional dairy trade development policy, taking cognizance of the regional market potential and installed capacities which are underutilized, needs to be developed. This policy should act as a guide to the region's decision on introduction of a Common External Tariff, which upholds the ideals of such a policy.

c) Regional policy on non-tariff charges on dairy products

To address the market distortion effects on non-tariff charges, which vary across the region, there is need to come up with a harmonized schedule of non-tariff charges. Such charges should be limited to the ones allowable under the WTO General Agreement on Trade and Tariffs (GATT) and should be kept very low.

Product quality standards

a) Develop quality standards for all dairy products which are being produced in the region.

Standards for all dairy products currently being produced in the region need to be developed irrespective of whether one or only two countries are the only ones producing such products.

b) Harmonize quality standards on dairy products and testing methods.

For commodities where quality standards are in place across the countries, there is need to harmonize them in order to address the divergences observed in this study.

c) Rationalization of the role of bureaus of standards and ministries of health on matters pertaining to milk and milk products quality and safety standards.

The region needs to develop a trade facilitation program, clearly spelling out the role of bureaus of standards and ministries of health on matters pertaining to product quality and food safety.

d) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of product quality and food safety standards.

A regional capacity building program should be introduced, targeting institutions involved in enforcement of product quality and food safety standards. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resource, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

e) Regional mark of quality.

In recognition of institutional limitations, which are manifested by lack of staff at border points and testing facilities, the region needs to develop an accreditation system which should come up with a regionally recognized mark of quality for dairy products.

Sanitary requirements and Food Safety Standards

a) Establish a system for facilitating cooperation between Veterinary Services on the following areas: -

- Sharing of information on disease and disease control systems
- Joint animal disease control system, especially along common borders
- Joint regional information dissemination targeting traders on regulatory requirements

b) Harmonization of sanitary requirements and implementation procedures

There is need to harmonize sanitary requirements (animal disease and public health attestation requirements) in the region. The role of the following institutions will also need to be rationalized: Veterinary Services, Ministries of Health, Bureaus of Standards and Local Authorities in the region.

c) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of sanitary requirements

A regional capacity building program should be introduced, targeting institutions involved in enforcement of sanitary requirements. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resources, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

d) Establish a mechanism for settlement of disputes on SPS issues

A regional mechanism for facilitating reporting and settlement of cases of SPS disputes needs to be established.

Customs documentations and procedures

- a)** The COMESA Simplified Single Entry Document and Certificate of origin, which are currently under review, need to be completed in order to facilitate cross border trade of dairy products by small and medium traders. Dairy products should therefore be among the commodities to qualify for clearance through this document.
- b)** Requirements for customs documents to be lodged by licensed clearing agents should be reviewed, with the aim of making the requirement optional for agricultural consignments that are less than US\$5000. This policy change should be backed by extensive education of customs entry documents and procedures.
- c)** Pre-shipment inspection should be eliminated for regionally sourced dairy products. Along with this policy measure, the requirement for IDF and IDF fees should also be phased out for regionally sourced dairy products, because IDF is merely a record of intention to import. Actual imports are captured through customs statistics.
- d)** All trade regulatory institutions, which have to inspect dairy products (as in deed all other commodities) before release, should carry out inspection at the same time to avoid delays.
- e)** For the few countries that are still enforcing foreign exchange controls, mandatory requirement of irrevocable LC before issuance of an export permit for regionally destined exports of dairy products should be dropped. Other less punitive trade finance instruments, such as Cash Against Documents (CAD), should be applied.

Proposed strategies for integrating the informal milk trade to the formal milk market value chain

A regional program designed for adaptation at national level would play a catalytic role in the process. The program should include an implementation time frame and an implementation peer review process would serve as vital stimulant to adaptation of the regional program at national level, including facilitating change of legislation to accommodate the features of the program. It is therefore recommended that a regional program be drawn to encompass the following strategies: -

a) Hygienic handling of milk products by informal traders

Introduce packaging regulations which encourage use of metal instead of plastic containers among informal traders for milk destined for the market through informal channels.

b) Training of informal traders on safety and quality of milk

Design a regional training program on safety and quality of milk targeting informal traders. The training manual should be easy for designated institutions and programs to apply at national level.

c) Certification of milk handled by trained informal traders

A certification system will need to be put in place for milk handled by informal traders. This will call for a definition of parameters to guide the certification process.

d) Business Development Services as a vector for integrating informal milk traders to formal milk market value chain

It is proposed that the strategy to address milk quality concerns and transforming the informal milk markets be based on the concept of business development services (BDS), and be supervised by national regulatory authorities.

Strategies for exploitation of the regional market potential

a) Contract Packing

Processing and packing of products for a client under his own label and recipe

b) Franchising

Where one processor allows the other the use of his brand at a rental cost

c) Cooperative Branding

Processors in same or different markets agree to sell under one label

d) Reciprocal Representation

Two or more companies agree to carry the other's products in home countries or regions

e) Private Labels

Key retailer, distributor or wholesaler develops own brand then contracts out the manufacture to a processor

f) Supply Networks

Two or more companies agree to supply each other on regular or on need basis

g) Forward Trading

Getting customers to commit themselves to purchase given quantities of products ahead of time

1.0 BACKGROUND

1.1 Rationale

Dairy farming is one of the critical sectors with high potential for improving food security and welfare in the Eastern, Central and Southern Africa region. Hence it was identified as a priority area for research at the inception of Eastern and Central Africa Programme for Agricultural Policy Analysis (ECAPAPA). The sector is also of great importance to both COMESA and EAC in the quest for enhancing intra-regional trade in agricultural produce.

The livestock sector accounts for about 18% of agricultural GDP in sub-Saharan Africa (SSA), with milk contributing 20% to 25% of this output. The recent analysis by Delgado et al (1999) provides clear evidence of increasing demand for dairy products (and other foods of animal origin) in Sub Saharan Africa (SSA) and other developing regions of the world as a result of rapid population growth, urbanization and increasing purchasing power. The analysis estimated that between 1993 and 2020, the annual demand for milk and dairy products in developing countries would grow between 3.2% and 3.5% annually, implying that the demand will more than double over the period from 168 million tonnes in 1993 to about 400 million tonnes in 2020. This poses a formidable challenge to these countries, especially because milk production is presently estimated at only 200 million MT. Milk production in COMESA and EAC is estimated at only 12million MT tonnes against a demand of 14million metric tonnes². Demand for milk is also expected to increase in the COMESA and EAC region, from the current average per capita consumption of 36 litres per year to at least the level that the highest milk consuming country (Mauritius) has attained, i.e. 90 litres per year (implying an overall regional milk demand of 36 million metric tonnes). If one was to use the WHO recommended per capita consumption of milk of 200 litres per year, the projected demand would be even more phenomenal.

This projected growth in demand provides market opportunities and benefits for dairy industries in the region. The benefits include income generation opportunities for producer households and for rural and urban market intermediaries through their participation in processing and marketing.

In addition, rising world prices for internationally traded dairy products and prospects for the reduction, or even the removal, of export subsidies by industrialized countries will contribute to increased prices for producers in the region.

These increasing market opportunities for dairying represent exciting challenges and opportunities for improving food security, income generation and employment in COMESA and EAC.

In order to stimulate development of the dairy sector in the region, specific priority issues that need addressing were identified in consultation with COMESA, EAC, ILRI and IFPRI including: improving market efficiency through reduction of marketing costs and improvement of marketing institutions; improving delivery of dairy farming services; and, understanding the nature and determinants of comparative advantage in

² Estimated using the region's average milk consumption of 36 litres per year.

dairy farming in order to maximise benefits from it. Removing barriers to intra-regional trade dairy products and inputs (e.g., feeds and genetics) is considered an important mechanism of overcoming some of the underlying constraints in dairying. This will contribute to greater access to inputs and evening out of milk supply in deficit and surplus pockets that co-exist in the region, thereby increasing benefits to producers, market intermediaries and consumers.

A pre-requisite for increasing intra-regional trade is rationalization of policies, procedures, regulations, rules, standards and grades that govern the dairy sub-sectors in individual countries and their harmonization between the countries. The process of rationalisation and harmonization will contribute to creating an enabling institutional environment for dairy markets in the region.

Many regulations that adversely affect domestic, cross-border and international trade in milk and milk products hinge on the need to protect the public from health risks that may arise from milk-borne hazards like zoonoses, and national regulators increasingly rely on international food safety standards to meet the need. The tendency to rely on international food safety standards is increasing with globalization but without proper examination of the suitability of the standards for domestic markets. Reliance on the strict international standards often relegates a large proportion of the domestic market to operating informally and without policy support. The trend suggests that either the countries do not have the capacity to set more appropriate local standards or they fail to appreciate the fact that the international standards are based on bottom line risk thresholds that are often higher than the national requirements of many countries, including developed countries. The Sanitary and Phyto-Sanitary (SPS) Agreement under WTO explicitly permits governments to choose not to use the international standards. Indeed the SPS Agreement itself encourages governments to establish national, bilateral or regional SPS measures consistent with, but not necessarily the same as international standards, guidelines and recommendations. The SPS therefore allows for bilateral or regional agreements. Therefore, an important issue for the dairy markets in COMESA and EAC region is to commonly adopt standards that do not unnecessarily hurt domestic and regional markets, especially where there are insignificant exports outside a region and/or where sanitary conditions are similar.

Related to the SPS is the Agreement on the Technical Barriers to Trade (TBT) that covers all technical regulations, voluntary standards and conformity assessment procedures. It seeks to ensure that technical regulations and standards, including packaging, marking and labelling requirements and procedures for assessing conformity with technical regulations and standards do not create unnecessary obstacles to international trade. The main difference between the two agreements is that the TBT is defined according to the kind of measure it covers while the SPS is defined according to the objective of the measure.

The challenge of rationalization and harmonization of policies therefore requires a critical look at both the relevant technical and economic issues by informed stakeholders at all levels, and a keen awareness that optimal outcomes must be based on tradeoffs between the technical issues and the economic interests of stakeholders. In addition, an important underlying consideration is the ability of individual countries to effectively implement/enforce the agreed on standards.

1.2 Purpose and objectives of the study

Purpose

The general purpose of this study is to assess policy and regulatory constraints to trade in dairy products in COMESA and EAC region. Accordingly, the design of the study is set to scope SPS issues, quality standards, tariffs and non-tariff charges, customs clearance documentation and procedures as they relate to trade in dairy products. In addition, the study explores strategies for integrating informal trade in dairy products into the formal value chain; as well as strategies for promoting private sector alliance in the region for purposes of exploiting potential in the dairy products' trade in COMESA and EAC. The primary output of the study is a proposed regional dairy trade policy platform in form of a set of recommendations to address the identified policy and regulatory constraints to intra/extra regional trade in dairy products.

Objectives

To achieve the purpose of this study, the following specific objectives were pursued through country level baseline studies as well as the regional policy paper: -

1. In-depth analysis of the structure of the dairy sector in terms of the size of the dairy farming industry and production of raw milk; types of processed dairy products and installed capacities of the processing industries; source of primary raw material for the processing industries (distinguishing between regional and extra regional sources); production in volume and value of the processed products for the period 1997-2003.
2. Dairy sector value chain highlighting volume and prices along the chain and creating a ready to use inventory of processors, distributors and producers of dairy products.
3. Quantification of formal imports and exports of dairy products by type (as defined in the tariff book); sources and destinations for the period 1998-2003.
4. Trade policies and regulations governing trade in dairy products, encompassing tariffs, sanitary requirements, and quality and safety standards.
5. Constraints faced in accessing regional market (policy and regulatory provisions in destination or source country and other forms of constraints).
6. Identification of specific policies, procedures, regulations, rules, standards and grades for national rationalisation and/or harmonization.
7. In consultation with stakeholders in the regional, propose a regional dairy trade policy and regulatory framework.

1.3 Scope and methodology

The following COMESA/EAC countries were sampled for the study: Ethiopia, Kenya, Malawi, Mauritius, Tanzania, Rwanda, Uganda and Zambia. These countries accounted for 46% of total milk production over the period 1997-2003 and over 60% of regional trade in dairy products.

In each of the eight countries baseline studies were conducted by National Resource Persons and national workshops were held to deliberate on the findings before synthesis of the national reports into the regional policy paper. The only countries where national workshops had not been held by the time of writing this report were Rwanda, Ethiopia and Mauritius. The inputs of these countries to the process of developing a regional

dairy trade and regulatory policy framework will be obtained through pre-conference consultations, which are to be conducted in all countries ahead of the Regional COMESA/EAC regional dairy trade policy conference.

The national studies applied a value chain analysis framework by carefully identifying relevant input and output products; marketing channels; key participants and institutions including: transporters, traders, certification agents, regulation enforcement institutions and consumers. The process which guided the national studies and the regional policy paper is the ‘policy change cycle from data collection, analysis, dialogue and action. This process leads to the development of the regional policy platform through consultations at the regional conference where the output of the studies will be discussed and recommendations formulated through stakeholder consultations.

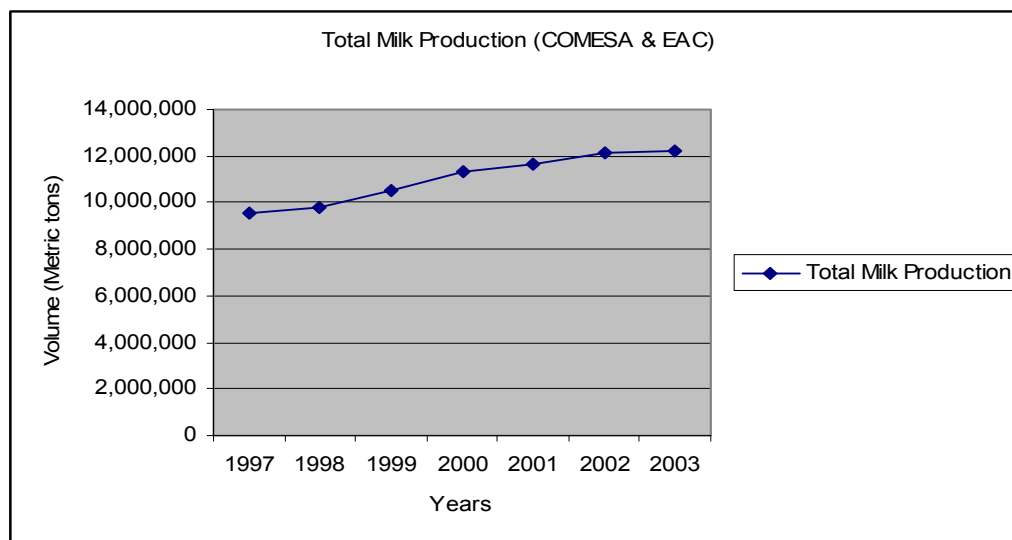
1.4 The structure of the report

The rest of this paper is organized as follows: Section 2.0 discusses the structure of the dairy industry (production and processing), Section 3.0 covers trade (exports and imports) in dairy products, highlighting the surplus/deficit situation, estimating the potential of trade in dairy products in the COMESA and EAC region; and the role of international trade in bridging this gap, Section 4.0 is on dairy products trade policy and regulations, Section 5.0 provides a detail presentation of strategies for integrating the informal trade in COMESA and EAC into the regional dairy sector value chain; Section 6.0 covers proposed strategies for creating linkages among traders in dairy products in the region. Section 7.0 gives a summary of all the proposed recommendations in the report.

2.0 STRUCTURE OF THE DAIRY INDUSTRY IN THE COMESA AND EAC REGION

2.1 Milk production

According to the FAO Data (FAOSTAT 2004) production of fresh cow milk in COMESA and EAC countries stood at 12 million metric tons in 2003 (see annex 1 for complete list of COMESA and EAC countries' production of fresh milk for the period 1997-2003). This was an increase of 20% from 10million metric tonnes in 1997. As evidenced in the chart below, this was a steady growth over the entire period.



The key producing countries are Sudan, Kenya, Egypt, Ethiopia, Tanzania, Uganda, Madagascar and Zimbabwe. These countries account for 97% of the region's total milk production.

Table 1: Principal milk producing countries in COMESA and EAC (including countries sampled for the current study despite their low milk production level)

| | 2003 | 1997-2003 Total | % of total |
|-------------------------|-------------------|-------------------|---------------|
| Angola | 195,000 | 1,336,000 | 1.72 |
| Egypt | 1,900,000 | 11,581,536 | 14.94 |
| Ethiopia | 1,450,000 | 8,492,820 | 10.96 |
| Kenya | 2,700,000 | 16,909,500 | 21.81 |
| Madagascar | 535,000 | 3,715,000 | 4.79 |
| Malawi | 35,000 | 240,000 | 0.31 |
| Mauritius | 4,000 | 33,200 | 0.04 |
| Sudan | 3,264,000 | 21,768,000 | 28.08 |
| Rwanda | 97,981 | 437,971 | 0.56 |
| Tanzania, United Rep of | 835,000 | 5,151,000 | 6.64 |
| Uganda | 700,000 | 3,893,400 | 5.02 |
| Zambia | 64,200 | 433,800 | 0.56 |
| Zimbabwe | 280,000 | 2,050,000 | 2.64 |
| Others | 218,910 | 1,480,140 | 1.91 |
| Grand Total | 12,279,091 | 77,522,367 | 100.00 |

Source: FAOSTAT Data Base (2004)

The following country briefs illustrate the processes behind milk production and the development of the sector in each of the sample countries. One of the major findings is that on average over 80% of milk in the region is produced by the smallholder farmers and that there has been effort through reforms of the sector to adapt to new farming systems. This trend is also a reflection of the dairy sector development initiatives or programs aimed at promoting milk production and consumption as well as policy reforms being undertaken in various countries to meet the ever-increasing milk demand. For example, the dairy sector in Zambia has seen an increase in milk production from small holders due to projects sponsored by Zambia Agricultural Technical Assistance Centre (ZATAC), FAO, Plan Zambia, Land O'Lakes and GTZ. In Ethiopia, the growth of the sector has partly been attributed to improved policy environment and a shift from command to market economy. The latter has created opportunities for private sector investment in the sector (e.g. processing industries). The growth in milk production is also a reflection of milk production potential that exists in these countries if they focus on a strong dairy development push and improved marketing efficiency.

Ethiopia

In Ethiopia, milk production from cows is estimated at 1.5 million tonnes per year. It is produced from the indigenous cattle kept in small-holdings for traction. Essentially, they are located in villages or single farms spread out in the rural areas with very poor communication infrastructure. Utilization may be home consumption or processing to obtain butter and other products for sales at primary markets for family cash needs. Bulk of the milk is processed into butter, as this is the most popular dairy product in Ethiopia. Ninety five percent (95%) of the national milk is market through informal channels and is unprocessed.

Tanzania

The Tanzania dairy industry is still in its infancy. The bulk of the milk produced in the country originates from the traditional cattle herd and is consumed at the household level with very little reaching the commercial market. The traditional and commercial dairy sector has approximately 17.5 millions and 435,000 dairy cattle producing 600 millions and 400 millions litres of milk per year respectively. Over the last two decades, total milk production has increased at the rate of about 2.8% per annum largely due to increases in cattle population rather than increases in productivity.

The supply of milk and milk products is inadequate to meet demand, particularly in urban areas. In an attempt to meet the demand for milk the country imports considerable quantities of dairy products to partially bridge the gap; notably Dry Skimmed Milk Powder (DSMP) and Butter Oil (BO). Most of these have been donations from the World Food Programme (WFP) and the European Economic Community (EEC).

Kenya

Dairy production in Kenya is predominantly smallholding. Market-oriented dairy farming based on exotic cattle dates back to the early years of 20th century (the first decade of the 20th century), when European settlers introduced dairy cattle breeds and other exotic forms of agriculture.

Improved dairy cattle production by indigenous Kenyans was not until after the Swynnerton Plan of 1954, which allowed them to engage in commercial agriculture

(Conelly, 1998). By 1963, when Kenya attained independence, the dairy herd had increased to about 400,000 exotic cattle largely in the hands of the settlers (Omore, et al. 1999).

The development of Kenya's dairy sector has been steered by a number of legislations, complete with the implementing agencies and regulatory bodies, which together constitute the regulatory framework (Waithaka et al., 2003), other than the direct policy pronouncements.

Several factors, which include the presence of significant dairy cattle populations, the historical importance of milk in the diets of most Kenyan communities, a suitable climate for dairy cattle and a conducive policy and institutional environment, have been contributory factors to the success of dairy production by smallholders in Kenya (Conelly, 1998; Thorpe et al. 2000).

Small-scale producers (the smallholders) dominate dairy production, owning over 80 percent of the 3.3 million dairy cattle, producing 56 percent of the total milk production and contributing 80 percent of the marketed milk (Peeler and Omore 1997). The major types of cattle reared for milk production are the improved exotic breeds and their crosses (collectively called 'dairy cattle') and the indigenous (zebu) cattle, which provide milk for communities in the drier parts of the country.

On-farm consumption (non-marketed milk) accounts for about 45 percent of total milk production while the remaining 55 percent is marketed through various channels. About 15 percent of marketed milk flows through milk processors (Muriuki et al. 2001), who include Brookside, Spin Knit, Premier, KCC and other smaller private processors.

Zambia

Zambia's dairy sector is characterized by three categories of milk producers; commercial farmers, traditional/smallholder dairy farmers and emergent dairy farmers, with a cattle population of 2.5million in 2003. Smallholder dairy farmers' contribution is about 40% of the all marketed milk and large-scale commercial and emergent farmers supply 70%. In total, all these farmers produce approximately 190³ million litres of milk per year compared to the country's total milk requirement of 253 million litres of milk per year. This yields a milk deficit, which renders Zambia to import about 25% of its milk requirement.

Malawi

The total cattle herd of Malawi is estimated at around 800,000 mostly Malawi Zebu for beef production. The dairy herd only comprises an estimated 12,000 head. Currently, there are an estimated 4,000 smallholder dairy farmers in the formal sector and around 5 medium or large-scale producers. Total formal milk production is estimated at 6,500metric tons, based on information from the processors and the Milk Bulking Groups (MBGs). Around 80% of this is produced in the Blantyre milk shed area (MSA) in the Southern Region

Intensive smallholder dairy production in Malawi commenced in 1969. Processing plants were installed in Blantyre (1969), Lilongwe (1973) and Mzuzu (1974) to collect and process milk and meet growing urban demand. This activity was organised by

³ This figure is far much higher than the FAOSTAT figure in table 1, an issue which Zambia should take up with the FAO so that country data is well represented.

Government under Malawi Milk Marketing (MMM). Farmers were organised into milk producer groups (MPG's) to operate collection and checking centres. In 1985 under a structural adjustment programme MMM was reorganised and a statutory body Malawi Dairy Industries (MDI) took over the three MMM dairy plants and three dairy farms and given the mandate to operate on commercial lines. MDI served as a treasury fund with the overall purpose of improving and multiplication of livestock for the production of milk and the manufacturing, processing and distribution of milk products. In 1997 the three MDI factories and farms were privatised, representing a significant change from Government to private sector control of the dairy industry. Since that time two new private investors started up in the dairy industry. In the meantime, various other small dairy plants have commenced operation as well.

Mauritius

As of September 2003, the cattle population was 6,963. Dairy farming is predominantly smallholder, where it is done as a part time activity, to augment income from cane farming or other economic activities. Annual milk produce is estimated at 4,000 metric tonnes per year.

Milk production has been on the decline in the past 3 three decades leading to the present situation where the country's milk production is only 5% of its requirement. Among the factors behind the decline is competition from reconstituted milk from imported milk powder. As a result, imported dairy products ended up being far much cheaper than domestic products.

The liberalization of dairy products and removal of customs tariffs on almost all dairy products caused an additional upsurge in the importation of these products. Australia and New Zealand are the main suppliers of dairy products to Mauritius. Australia holds over 60% of the country's market share. Other countries such as South Africa, United Kingdom and France are also significant suppliers of dairy products to Mauritius.

Uganda

Milk production in Uganda is estimated at about 1 million metric tones per year. Smallholder farmers account for about 90% of production with animals ranging between 1 to 40 in number. The national herd, which is estimated to be 6.3million cattle, is predominantly indigenous cattle with some cross and exotic breeds forming 5% of the total herd population.

Dairy production takes place under any of the following four categories of farming systems

- Communal grazing (i.e. pastoral grazing on communal land owned by the clan);
- Free range grazing (i.e. grazing of cattle by moving them all over the farm);
- Fenced grazing (i.e. grazing of cattle in paddocks or/and feeding them with concentrates);
- Zero grazing (i.e. the cow is fed exclusively on concentrates; no grazing).

Rwanda

Livestock production is one of the major agricultural activities and livestock plays a very important role in the socio-economic activities of the country. It contributed 5.3 % of the country's GDP in 1997 and serves as source of animal protein in the form of milk and other dairy products, meat for humans, manure, income, savings and has other non-monetary but important social functions especially for cattle including prestige and payment of bride price.

Smallholder milk producer's mainly keeping traditional and crossbred cattle collectively own 95 % of the cattle in Rwanda. The rest comprise exotic breeds on commercial dairy farms in and around Kigali City. Most traditional cattle are found in Umutara province while Gitarama province has the highest concentration of crossbred cattle.

According to the available information, Rwanda produces about 56,000 tons of milk from cattle, which satisfies only 17 % of the population's needs (MINAGRI, 2002). On the other hand the estimated total milk requirements for the country are 500,000 tons per annum. There is therefore a deficit of 444,000 tons per year. This shortfall was up to 1999 covered by importation of raw and processed milk from Uganda (400,000 tons). In addition substantial amounts of milk powder are also imported into the country. In more recent years the Government took measures to prohibit the importation of raw milk at the same time encouraging importation of improved breeds of cattle from Europe and recently South Africa. Although statistics are not available, these measures have led to an increase in milk volume on the market. However, the volume of imported powder milk and other milk products is still high and may hinder the development of the nascent dairy industry in Rwanda if appropriate measures are not taken to control its wide importation.

The future of the region's trade development very much relies on the production of milk. The constraints that face this level value chain have a direct bearing on future prospects for export development. This paper does not go deep into issues on production constraints and strategies that would help mitigate these constraints; it merely presents a summary of the constraints for purposes of appreciating the challenges of milk production in the region. This summary is presented in table 2.

Table 2: Summary of challenges in milk production

| Country | Constraints |
|----------------|--|
| Ethiopia | <ul style="list-style-type: none"> a) Under-developed infrastructures facilities like road, telecommunication services, cold chain, water supply and energy. b) Difficulty in accessing bank credit c) Difficulty in acquiring land. d) The need for the establishment of a stake-holder based organization for the coordination, regulation and control of the dairy industry. |
| Kenya | <ul style="list-style-type: none"> a) Poor quality of feeds and feeding regimes; b) Seasonal fluctuations in forage availability; c) Inadequate access to AI services resulting to increased use of bulls (of unknown genetic potential); d) Inadequate enforcement of regulations on livestock movement; e) Inadequate and high cost of animal health care; f) Poor rural infrastructure; g) Inadequate and inefficient dairy cooperatives and other marketing groups and channels; and h) Inadequate access to markets |
| Malawi | <ul style="list-style-type: none"> a) Low smallholder productivity and slow herd growth, thereby limiting returns. Insecurity through theft has also been a threat to investment in dairy farming. At farm level, apart from mortality, long calving intervals |

| Country | Constraints |
|-----------|--|
| | <p>and reduced conception rates have further reduced increases in the number of dairy stock.</p> <ul style="list-style-type: none"> b) Limited smallholder access to knowledge that constrains improvements in yields and supply. c) Limited access to capital. Lending conditionalities plus high real interest rates (in excess of 35% in 2002-03) have prohibited small-scale dairy farmers access to credit from financial institutions. d) Critical inputs to smallholders, such as quality feeds and AI, are not consistently available. Artificial insemination service delivery has been inefficient due to a lack of transport by AI technicians, lack of resources such as liquid nitrogen, lack of operational resources, insufficient government AI technicians, etc. e) Feed problems associated with inadequate pastures and high cost of concentrate feeds. |
| Tanzania | <ul style="list-style-type: none"> a) Ill equipped private sector to deliver animal health care services in the vast pastoral regions within the country. b) Erratic supply of veterinary drugs because of illegal veterinary drugs. c) The AI service is unreliable and costly d) Importation of high-grade animals is only afforded by few institutions, specifically HPI and Ministry of Water and Livestock Development. The cost of importation is as high as TSh 5,000,000 (USD 5,000) per animal. |
| Zambia | <ul style="list-style-type: none"> a) Pressure on feed supply, especially after periodic droughts b) The increasing density of dairy units around the urban areas may create risks of the spread of disease between herds; c) Further advances in the spread of tsetse fly could confront dairy producers with a trypanosomiasis threat which would make milk production difficult or even impossible in some areas; d) zoonotic disease in the form of brucellosis and tuberculosis, currently a minor problem in the commercial herd but present at high rates in the surrounding traditional cattle population, could cause serious production losses if it becomes established and may result in those producers selling raw milk to lose their market; and e) The establishment of a relatively free market for milk has led to producers facing an increasing threat from more efficient producers particularly from Zimbabwe and South Africa. |
| Mauritius | <ul style="list-style-type: none"> a) Increasing cost of production b) Ageing of cow breeders c) Non availability of adequate family labour d) Decrease in the quality of milk e) Poor competitiveness with the quality and price of imported milk powder and milk products f) Limited land availability for cultivating pastures g) Seasonal scarcity of fodder and grass h) Insufficient and inefficient marketing facilities scheme i) Stricter Environmental regulations j) Poor Veterinary backup services k) Inefficient Artificial Insemination service |
| Rwanda | <p>The dairy sub-sector is constrained by tremendous pressures created by both reduced availability of land per capita and inputs like feeds and animals with good genetic base for milk production.</p> |

2.2 Dairy processing industry

The dairy processing industry in the region is fairly developed. The industry produces the following products: Milk Powder, UHT Milk, Pasteurized Milk, Cheese, Butter, Yoghurt, Ghee, Cream, Ice Cream, Milk Ice, Ice Confection, Flavoured Milk, Chocolate Milk, Fermented skim milk and Sterilized Milk. The table below provides details on the processed products across the sample countries. Kenya, Zambia, Uganda and Tanzania have most products.

Table 3: Dairy Products Production Diversification in Selected Countries

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius ⁴ |
|---------------------|-------|--------|----------|----------|--------|--------|------------------------|
| Milk Powder | √ | | | | | | |
| UHT Milk | √ | √ | √ | √ | | √ | |
| Pasteurized Milk | √ | √ | √ | √ | √ | √ | |
| Cheese | √ | √ | √ | √ | | √ | |
| Butter | √ | √ | √ | √ | | √ | |
| Yoghurt | √ | √ | √ | √ | √ | √ | √ |
| Ghee | √ | √ | √ | | | √ | |
| Cream | √ | √ | | √ | | √ | |
| Ice Cream | √ | √ | | | √ | √ | √ |
| Milk Ice | √ | | | | | | |
| Ice Confection | √ | | | | | | |
| Flavoured Milk | √ | | | | | √ | √ |
| Chocolate Milk | | | | | | √ | |
| Fermented Skim Milk | | | | | | √ | |
| Sterilized Milk | | | | | √ | | √ |

Installed processing capacity in the EAC and select COMESA countries stands at 3.5 million litres per day. Out of this, only 1.01million litres per day are utilized, with the rest remaining idle. This renders the per-unit cost of production to be unnecessarily high.

Table 4: Processing Capacity Utilization in the Region

| | Installed Capacity (million litres per day) | Utilized Capacity (million litres per day) | Excess Capacity (million litres per day) | % of Utilized Capacity |
|-----------------------|---|--|--|------------------------|
| Kenya | 2 | 0.5 | 1.5 | 30 |
| Uganda ⁵ | 0.33 | 0.12 | 0.21 | 35 |
| Tanzania | 0.51 | 0.15 | 0.36 | 29 |
| Ethiopia ⁶ | 0.13 | 0.02 | 0.11 | 25 |
| Malawi | 0.126 | 0.035 | 0.09 | 28 |
| Zambia | 0.347 | 0.113 | 0.234 | 33 |
| Mauritius | 0.05 | 0.049 | 0.001 | 95 |
| Rwanda | 0.023 | 0.01 | 0.13 | 50% |

⁴ Mauritius produces yoghurt, ice-cream, sterilized milk and flavoured milk using imported raw materials.

⁵ Capacity caters for pasteurised and UHT milk only

⁶ Utilized capacity quoted is for one firm – data on capacity utilization not available on the second firm.

| | Installed Capacity (million litres per day) | Utilized Capacity (million litres per day) | Excess Capacity (million litres per day) | % of Utilized Capacity |
|-------|---|--|--|------------------------|
| Total | 3.523 | 1.01 | 2.5 | |

Source: Country Reports

Kenya's processing capacity accounts for 57% of this capacity, followed by Tanzania, Zambia and Uganda. With exception of Mauritius where capacity utilization is at 95%, in all the other countries, capacity utilization is rather low, ranging between 25% and 35%. In Kenya, capacity utilization of the enormous investment is only 30%! The table below provides a summary of causes for under capacity utilisation across the sample countries.

Table 5: Reasons for Capacity Under-Utilization in the Region

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia ⁷ | Rwanda | Mauritius |
|---|-------|--------|----------|----------|--------|---------------------|--------|---|
| Supply fluctuations occasioned by seasonality in production | √ | √ | √ | | √ | √ | | |
| Inadequate volumes of raw milk | √ | | | | √ | √ | √ | |
| Poor quality of milk | √ | √ | | | √ | | | |
| Lack of cold chain | | √ | | | | | | |
| High preference for liquid milk (narrow product mix which limits value adding opportunities) | √ | | | | | | | |
| Low and decreasing per capita consumption (low demand base) | √ | √ | √ | | √ | √ | | Low and decreasing per capita consumption (low demand base) |
| Factor costs are high (e.g. electricity) | √ | √ | √ | | √ | | | |
| High processing costs (are large and negatively affect prices of milk products and hence consumer prices) | √ | √ | | | | | | |
| Lack of competitiveness | √ | √ | | √ | | √ | | |

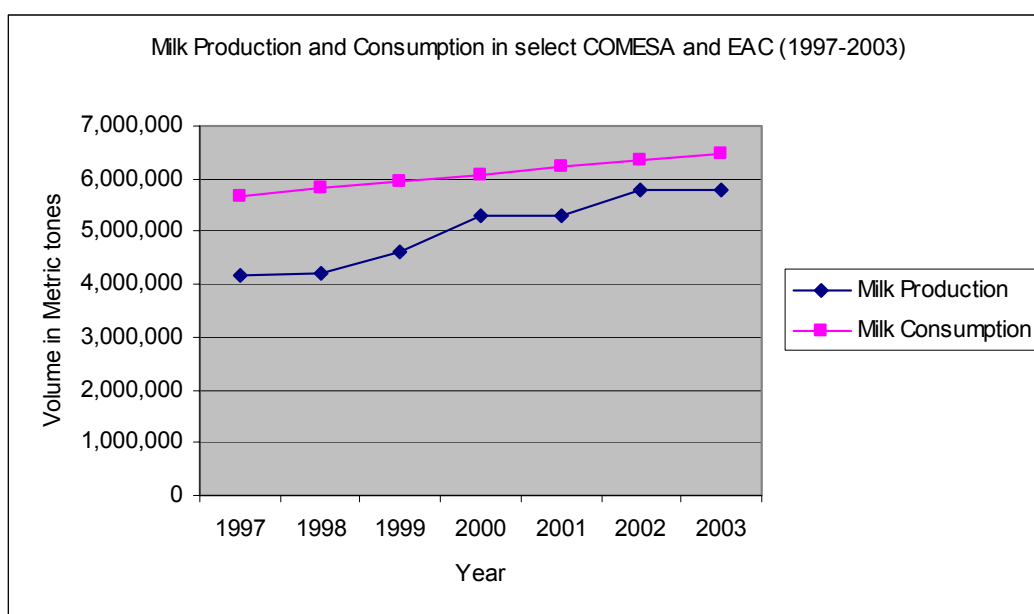
⁷ No reasons given for capacity under-utilization.

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia ⁷ | Rwanda | Mauritius |
|--|-------|--------|----------|----------|--------|---------------------|--------|-----------|
| s (due to relatively high cost of production / inefficiency in processing) | | | | | | | | |
| Use of obsolete technologies | √ | | | √ | √ | | | |
| Poor access to key inputs such as machinery and packaging materials (supplied by monopolies) | √ | | | | √ | | | |
| High and unstable interest rates that discourage new investments (processing require high capital outlays for plant installations) | √ | √ | √ | √ | √ | √ | | |
| Competition from imports for some product lines | | | √ | | | √ | | |
| Frequent changes and prevalence of high taxes (VAT and duties on packaging material) | | | √ | | | √ | | |
| Short Supply of Specialist skills | | | √ | | | | | |
| Poor infrastructure that hinders milk collection | | | √ | | √ | | | |
| Stiff competition from informal milk vendors | √ | √ | √ | √ | | | | |

3.0 TRADE IN DAIRY PRODUCTS AND REGIONAL MARKET POTENTIAL

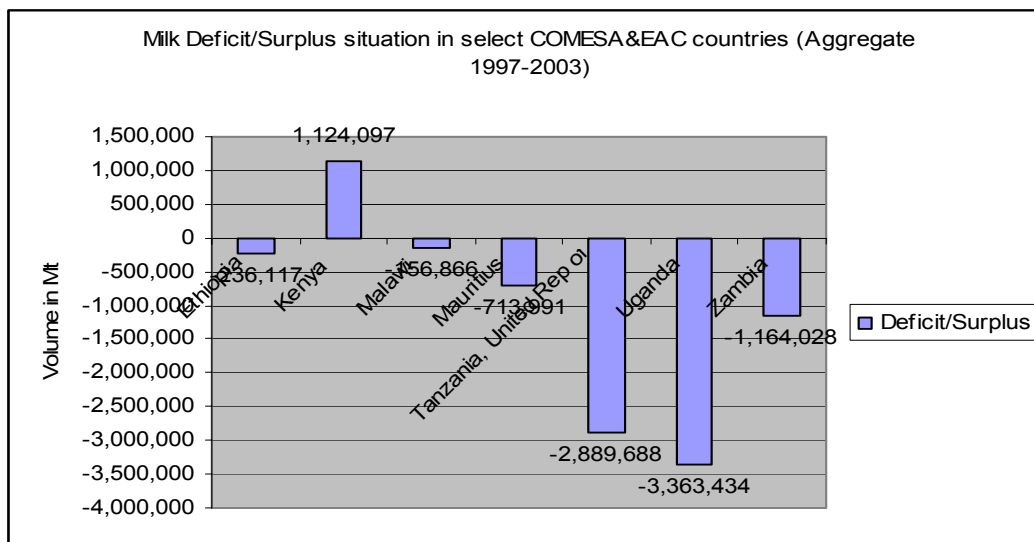
3.1 Production versus Consumption of milk

Over the period 1997-2003, milk consumption in the sample countries of COMESA and EAC averaged 6million metric tons per year compared to average production level of 5million. This yielded an average deficit of 1million metric tons per year. As evidenced in the line graph below, milk production remained lower than consumption through out the review period, with the gap narrowing between 2000 and 2003. These latter years' developments could be attributed to initiatives geared towards promotion of production of dairy products, as alluded to earlier in the report.

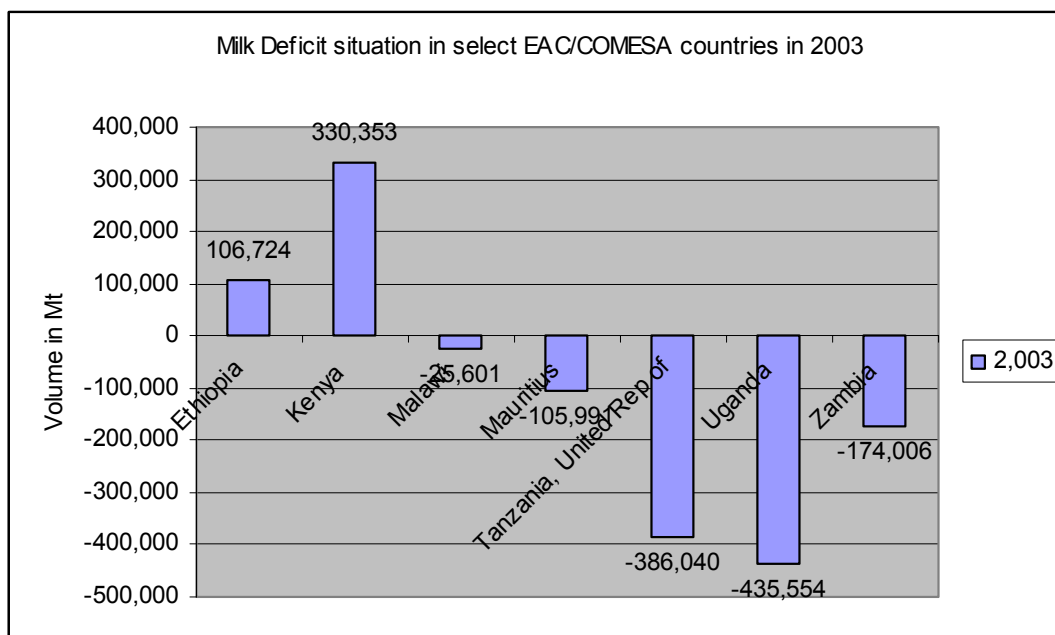


It is worth noting that the milk deficit situation has been persistent despite the average per capita milk consumption level in this countries being only 36 litres per year as compared to the WHO recommended level of 200 litres per person per year. Mauritius per capita milk consumption of 90litres per year was the highest followed by Kenya, whose per capita consumption was reported as 74 litres per year.

A country-by-country analysis of the deficit/surplus situation for the period 1997-2003 showed Kenya as the only country to have reported a tradable surplus. The bar chart below demonstrates this scenario.



An annual comparison, using year 2003 statistics does not change the situation much, as only Ethiopia showed some tradable surplus in addition to Kenya (see the chart). In Rwanda, the deficit in 2003 was 222,257 metric tonnes.

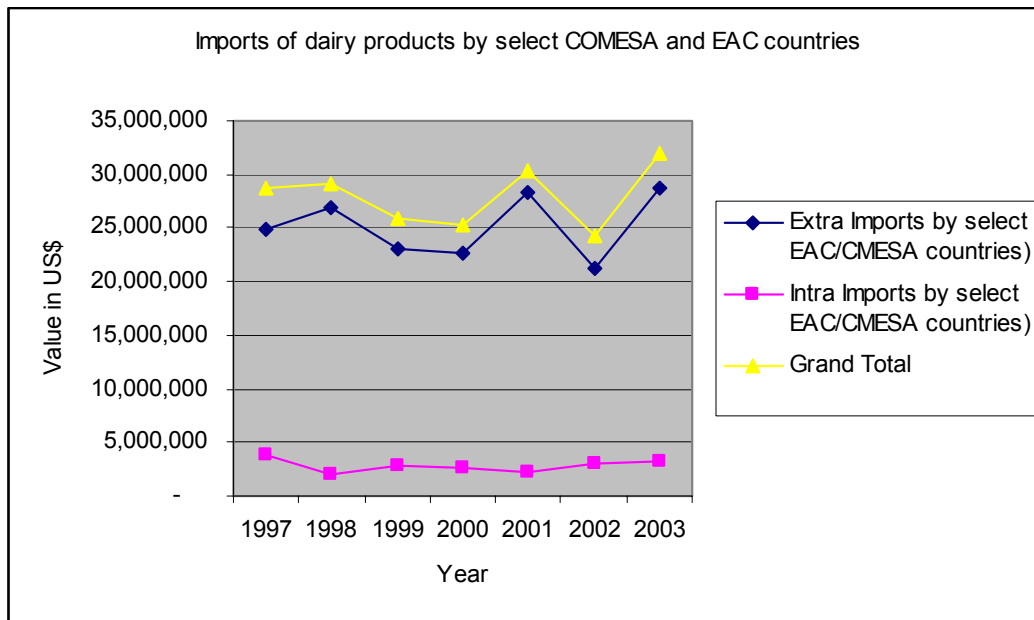


There is high preference for liquid milk in all the countries except Mauritius where consumers prefer powder milk and Ethiopia where bulk of the milk is processed into butter. In Kenya and Uganda, bulk of the milk is consumed in raw form (up to 80% of the marketed milk for Uganda) because it's far cheaper than processed milk. This is expected in countries where per capita incomes are decreasing, as is the case with most of the countries under review.

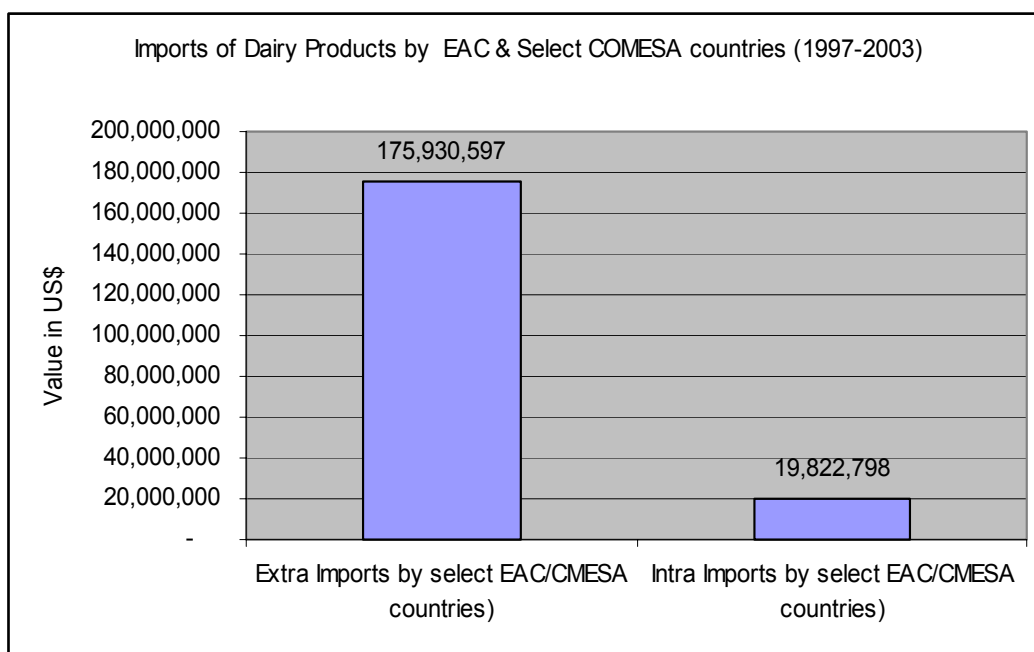
The bulk of the milk produced in the region reaches the consumer through the informal vending channels. It is clear that the informal market commands the largest share of the milk market. This has implications on the growth of the dairy processing industry and the available product mix.

3.2 Imports of dairy products

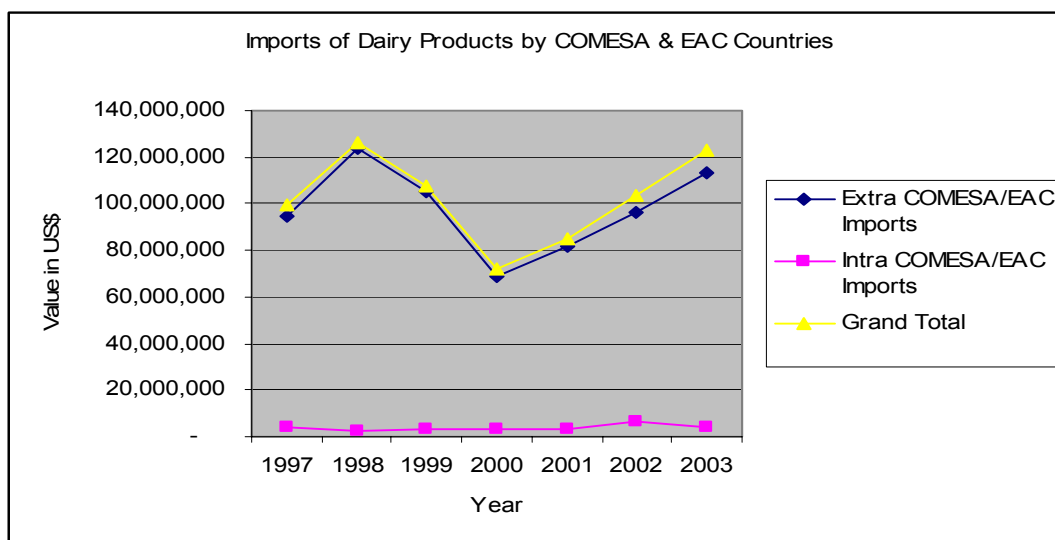
Milk deficit has been serviced through extra regional imports of dairy products, which for the select EAC and COMESA countries average US\$25 million per year. This is evidenced in the line graph, which shows extra-regional imports being far much higher than intra-regional imports, through out the review period.



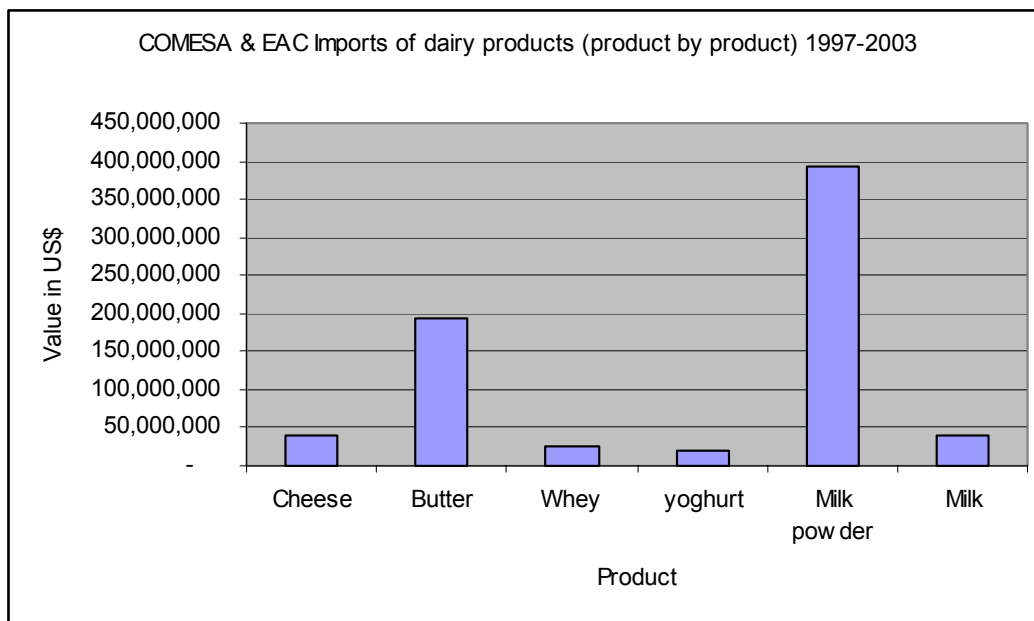
The bar chart shows the significance of the dairy products' market in the EAC and select COMESA countries, which over the period 1997-2003 imported from outside the region dairy products amounting to US\$175millions. Over the same period, imports from within the region amounted to a mere US\$20 million.



The above scenario also applies to the entire COMESA and EAC region, which has an estimated market size of over US\$120million. Over 90% of this market is serviced from extra-regional imports. The line graph shows predominance of extra-regional imports of dairy products in the region.

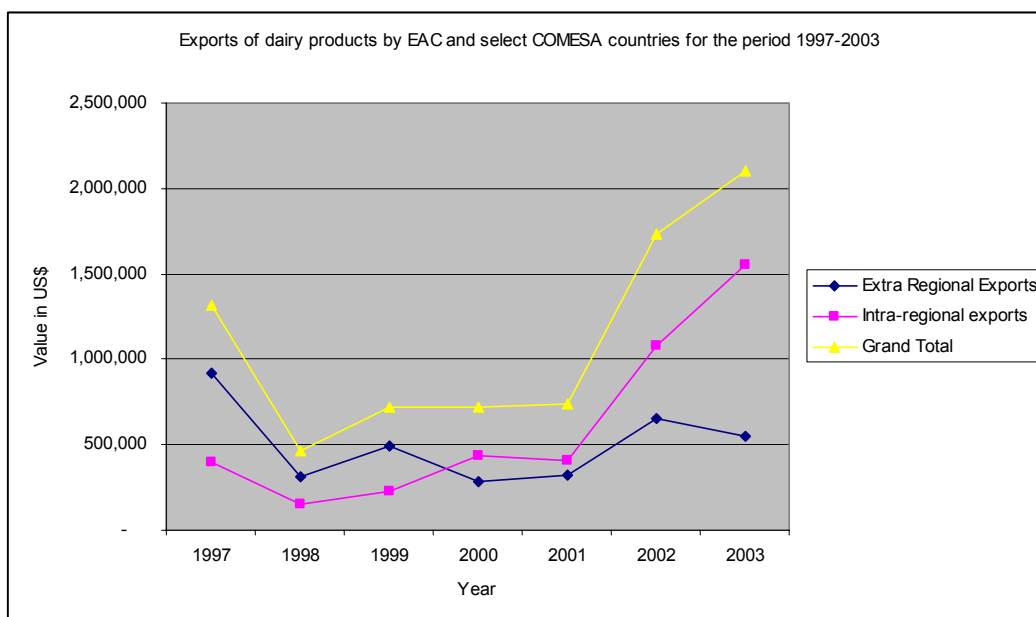


The imports of dairy products are dominated by milk powder, which accounts for 55% of total imports, followed by butter, cheese and liquid milk, which account for 27% and 6% respectively. The bar chart illustrates the composition of dairy products' imports by COMESA and EAC region for the period 1997 to 2003.

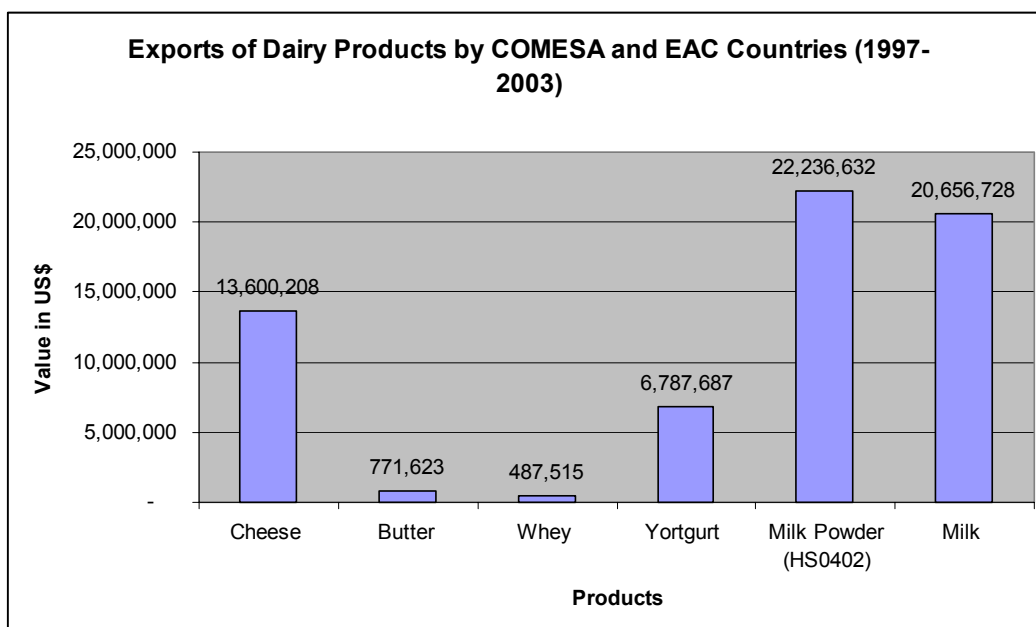


3.3 Exports

Exports of the dairy products by the EAC and select COMESA countries have been very low, averaging US\$1 million per year over the review period. Given the milk deficit situation as analyzed in section 3.1, these results are not surprising. As can be seen in the chart, a noteworthy development between 1999 and 2003 has been increase in exports by 193%. The countries behind this growth were Kenya, Zambia, Mauritius and Zambia (annex 2 for full table on COMESA and EAC extra and intra-regional exports). Regional market has been the key stimulant, as can be seen in the chart, intra-regional exports of dairy products increased from US\$0.716million in 1999 to US\$2.1million in 2003 as compared with extra regional exports which rose from US\$0.4million in 1999 to US\$0.7million in 2003. The exports to the region are reflective of the launch of the COMESA FTA in 2000, which rendered regional exports rather cheaper than extra-regionally sourced dairy products. Thus, if production of fresh milk and processed products were to be increased, there is a ready market for dairy products in the region.

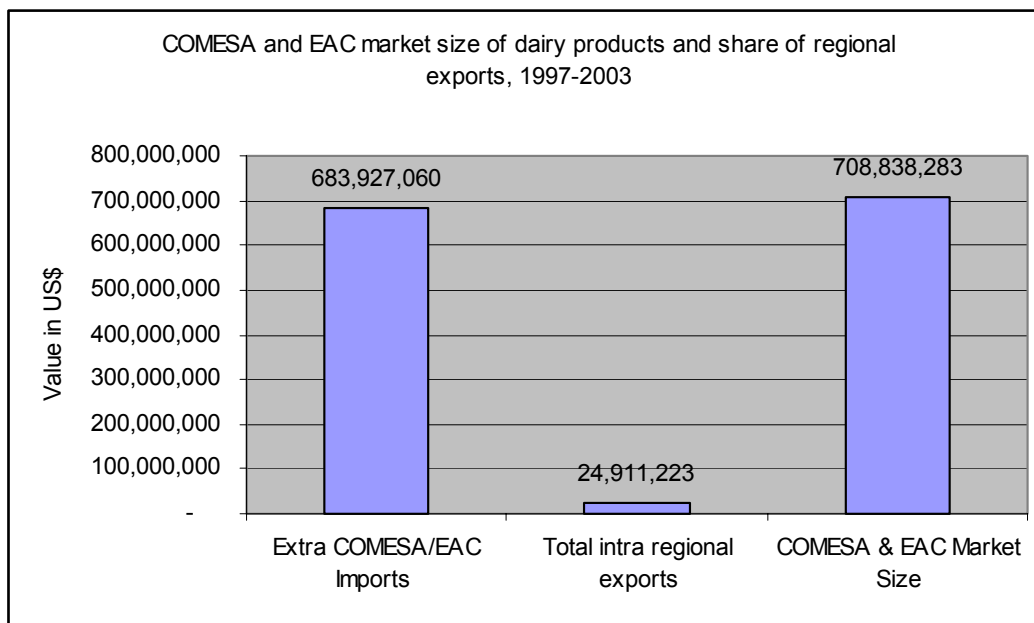


Analysis of the composition of the exports of dairy products showed milk powder and liquid milk (UHT) to be in the lead followed by butter and yogurt. This is illustrated in the chart.



3.4 Regional market potential for dairy products

Using extra regional imports and intra regional exports as a proxy for the regional market size, the EAC and COMESA market for dairy products is about US\$120million per year. If we were to factor market growth dynamics inform of prospects for increased per capita income and possible increase of the per capita milk consumption from the current average level of 36litres per year to the WHO recommended level of 200 litres per day, the future market for dairy products in the region looks bright!



Presently, over 95% of the COMESA and EAC market of dairy products is serviced by extra regional imports. The bar chart, which plots an aggregate position over the review period (1997-2003), illustrates this scenario.

Further, over 80% of extra regional imports of dairy products are sourced from Denmark, South Africa, Canada, USA, France, New Zealand, Australia, the Netherlands and Poland. This raises critical questions on competitiveness of regionally produced dairy products and the extent to which extra-regionally sourced dairy products are subsidized in the source countries. These questions will need to be answered in the course of seeking to develop regional dairy sector.

4.0 TRADE POLICY AND REGULATORY ENVIRONMENT

4.1 COMESA and EAC trade regimes

Both COMESA and EAC member States have agreed upon the trade regime under which dairy products and indeed all other commodities should be traded. According to the trade regimes, member countries have committed themselves to applying preferential tariffs on goods originating from the region. The levels of preferential tariff expressed as a percentage of tariff rebates on Most Favored Nations (MFN) tariffs or tariffs charged on all non COMESA or EAC countries is given as follows: -

In COMESA, eleven countries, which have already ratified the Free Trade Area (FTA) protocol, are levying zero duty on goods from the region. These countries include: Kenya, Malawi, Zambia, Zimbabwe, Egypt, Djibouti, Madagascar, Mauritius, Rwanda, Burundi and Sudan. Tariff reduction commitment for Non FTA COMESA countries is as follows: -

- | | |
|--------------------------------------|---------------|
| • Comoros, Eritrea and Uganda | 80% reduction |
| • DR Congo | 70% reduction |
| • Ethiopia | 10% reduction |

Under the EAC trade regime, Kenya grants market access to commodities imported from Uganda and Tanzania a 90% tax reduction on the MFN rate. Tanzania and Uganda on the other hand grant an 80% tariff reduction on goods originating from Kenya. This scenario is due to change immediately implementation of the EAC Customs Union commences in early 2005.

Preferential duties are allowed only after proof that commodities meet the Rules of Origin criteria as provided under Article 4(1)(e) of the COMESA Treaty and under the provisions of the EAC Rules of Origin.

The COMESA and EAC Rules of Origin are therefore the basis for according market access to COMESA or EAC originating products. The Rules of Origin thus serve as a determinant of where a product is made and the minimum percentage of inputs contained therein from member States.

There are five Rules of Origin and at least one of them must be complied with for any goods to qualify for COMESA tariff treatment.

The rules are:

1. Goods wholly produced or obtained in a member state (that is no material outside the common market has been used).
2. Goods produced in the member states and the C.I.F value of any foreign materials used (that is non-COMESA/EAC) does not exceed 60% of the total cost of all materials used in their production.
3. Goods produced in member states whose value added resulting from the process of production accounts for at least 35% of the factory cost of the goods.
4. Goods produced in member states and are classified or become classified under a tariff heading under which they were imported.

5. Goods of particular importance to the economic development of the member states and containing not less than 25% value added notwithstanding the provision in 3.

Dairy products, being among the most frequently traded agricultural commodities in COMESA and EAC⁸ conforms to the first rule since they are wholly produced within the region. It is however worthy noting that reconstituted liquid milk from milk powder imported from outside the region does not qualify as originating from within the region and does not therefore trade at preferential tariff.

Imposition of arbitrary measures, such as import restrictions to prevent market access, is prohibited under the COMESA trade regime, unless such action is approved by the council of ministers under the safeguard clause of the Treaty. In EAC a similar provision is contained in the EAC Customs Union Protocol, which is due for enforcement in year 2005.

The above trade regimes have mainly addressed tariff applicable on regionally sourced products. This leaves out a host of other trade policies and regulations that are equally important in ensuring free movement of dairy products across COMESA and EAC such as export and import restrictions through mandatory permits, quality standards, sanitary requirements, and enforcement of preferential tariffs, non-tariff charges and customs clearance regulations. In the following section each of these regulations are discussed in detail; the section also analyzes the implications of these regulations on cross border trade and proposed recommendations obtained through national consultative processes.

4.2 Dairy trade policies and regulations in EAC and COMESA countries

A review of the trade policy and regulatory environment that governs trade in dairy products in the COMESA and EAC region includes the following policies/regulations as the most important based on their implication on intra/extra regional exports of these commodities.

- Import controls
- Tariffs and non tariff charges
- Sanitary Requirements
- Quality and Food Safety Standards
- Customs Clearance Procedures

4.2.1 Exports/imports controls/restrictions

Export/Import controls or restrictions are normally applied by countries as a measure of protecting domestic industries. A key characteristic of the import/export regulatory framework is the ad-hoc import/export bans/quotas in anticipation of poor harvests or deficits (in the case of export bans) and gluts (in the case of import bans/restriction).

Out of the eight countries, only three countries had import controls on import of dairy products; namely Kenya, Mauritius and Malawi. The nature of import controls is as detailed in the table. The motivation behind the control is protection of the domestic industry.

⁸ Other most frequently traded agricultural produce includes sugar, rice, wheat flour and livestock and livestock products

Table 6: Import controls on imports of dairy products.

| Country | Import controls/ restriction | Nature |
|-----------|--|--|
| Mauritius | In place on UHT milk | The Ministry of Commerce is responsible for the control of importation of dairy products. Import permits for UHT milk require first clearance from the Agricultural Marketing Board. This permit was put in force at one point in time with a view to protect the local milk producers from competition with imported packed liquid fresh milk. However, since the local milk production can't keep pace with the increasing demand for fresh milk from the consumers, the AMB is not stringent in issuing this permit. In fact according to the AMB there are no specific requirements which importers need to fulfil before getting this clearance. |
| Kenya | In place on all dairy products | <p>A no objection import authorisation is required before importation of dairy products. This is despite the fact that the livestock products are specified in the schedule of goods subject only to meeting technical, sanitary and environmental standards on their arrival in the country (Legal Notice No. 135 of 1993).</p> <p>The import authorisation is meant to protect domestic industry whenever the authorising offices (Kenya Dairy Board and Department of Livestock) determine that there is enough domestic supply of similar product. This criterion is subjective, especially because information on domestic supply of dairy produce, is only privy to the authorising offices and processors who may have an interest in having the domestic dairy industry protected are the source of this information.</p> <p>For one to obtain authorisation, the procedure is that the importer is to first complete the Import declaration form (IDF) including personal details, country of origin and the seller details. The completed IDF is then attached to the Ministry of Livestock and Fisheries authorisation authorisations form depending on what is to be imported.</p> |
| Malawi | In place on all processed dairy products | For processed products an importer is required to apply for an import license from the Ministry of Commerce & Industry. Based on the information the Ministry has about the current status of the milk supply in the country, the Ministry decides whether to issue a license or not. This will happen within 7 days after applying, without any costs. The aim is to protect the local dairy industry. |
| Rwanda | In place for raw and unprocessed milk | Raw milk restrictions are premised on the need to protect the domestic fresh milk producing industry (farming community). |

In Kenya, exports of dairy products are also subjected to similar system of controls as imports, in that before exports are made, export authorisation has to be granted by four government offices as follows: Kenya Dairy Board, Livestock Production and Department of Veterinary Services and the Permanent Secretary, Ministry of Livestock Development.

Box 1

Licensing of Establishments for Processing Dairy Products for Exports

The Kenyan Case:

...Milk exporters are required to process milk from an establishment approved for purposes of processing milk and milk products intended for exports. Such establishments have to be under constant supervision of the Veterinary Department. The aim of this regulation is to give the Veterinary Certificate, which is usually a mandatory requirement for all dairy products exports recognition in the importing countries.

The certificate is a certification that 'the product was manufactured in an establishment duly registered/licensed by the Government (Veterinary Department) and that it is kept under continuous supervision and that the product was inspected prior to shipment and found to be free from dioxin, hormones and chemical residuals'.

Observations

Although the Veterinary Department has determined the standards which exporters must meet for their establishments to be certified as qualifying for processing dairy products, these standards are yet to be published and thus are not in the public domain. This denies investors an opportunity to prospect in the dairy processing; it also denies other competent Authorities in the region vital information which they require in order to grant Kenya's dairy products' market access in the region.

Recommendations

- a) Abolish import export authorization system
Import authorization system, which is not for purposes of enforcing SPS and Food Safety standards should be abolished. By so doing the role of domestic market protection will be relegated to introduction of tariffs on dairy products. This is the practise, which is recognized under the GATTs.
- b) Devise a regional mechanism for detecting cases of dumping and subsidies
There is need to develop a regional mechanism for detecting cases of subsidized and dumped milk products. This will address the reasons behind protective system for import authorisation.
- c) To introduce objectivity for countries which still presses to retain policy on domestic industry, a threshold pegged to perceived injury on domestic industry needs to be defined and agreed upon by the COMESA and EAC member States. Such a threshold, whose information should be shared among the member States, should be used as a trigger for imposition of import restrictions/controls on regionally sourced products.

4.2.2 Tariff and non-tariff charges

Tariffs

Intra-Regional trade in dairy products among the eight sample countries ranges between 0% for COMESA FTA countries to 10%. Import duty on dairy products from third countries ranges between 0% in Mauritius and 60% in Kenya, with all the other countries charging varying duties within this range. Product-by-product tariff charges are as detailed in the table.

Table 7: Import Tariff on imports of dairy products from COMESA, EAC, SADC and other countries

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Rwanda | Zambia | Mauritius |
|--|------------------|--------|----------|----------|------------------|--------|-----------------|-----------|
| 04.01: Milk and cream, not concentrated nor containing sugar or other sweetening matter | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 27% | 3% ⁹ | 5% | 0% | 0% |
| EAC | 15% | 0% | 5% | na | na | na | na | na |
| SADC | na | na | 25% | na | 10% | | 25% | 0% |
| Other Countries | 60% or KES 63/kg | 15% | 25% | 30% | na | 18% | 25% | 0% |
| 04.02: Milk and cream, concentrated or containing sugar or other sweetening matter | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 18% | 1% ¹⁰ | 18% | 0% | 0% |
| EAC | 15% | 0% | 5% | na | na | na | na | na |
| SADC | na | na | na | na | 10% | | 25% | 0% |
| Other Countries | 60% or KES 3/kg | 15% | 25% | 20% | na | 30% | 25% | 0% |
| 04.03: Buttermilk, curdled milk cream, yoghurt, Kephir and other fermented or acidified milk and cream, Whether or not containing added sugar or other sweetening matter or flavoured, or containing added fruit, nuts or cocoa | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 27% | 5% | 18% | 0% | 0% |
| EAC | 15% | 0% | 5% | na | na | na | na | na |
| SADC | na | na | na | na | 25% | | 25% | 0% |
| Other Countries | 60% or KES 63/kg | 15% | 25% | 30% | | 30% | 25% | 55% |
| 04.04: Whey, whether or not concentrated | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 27% | 6% | 15% | 0% | 0% |
| EAC | 15% | 0% | 5% | na | na | na | na | na |
| SADC | na | na | na | na | 10% | na | 25% | 0% |
| Other Countries | 60% or KES 63/kg | 15% | 25% | 30% | na | 18% | 25% | 15% |
| 04.05: Butter and other fats and oils derived from milk; dairy spreads | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 27% | 5% | 18% | 0% | 0% |
| EAC | 15% | 0% | 5% | | | | | |
| SADC | na | na | na | na | 25% | | 25% or K8 | 0% |

⁹ It is 6% for Of fat content, by weight, exceeding 6%

¹⁰ Duty exempt for powder milk of fat content not exceeding 1.5%.

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Rwanda | Zambia | Mauritius |
|------------------------------|------------------|--------|----------|----------|--------|--------|----------------------------|-------------------|
| | | | | | | | 50/ kg | |
| Other Countries | 60% or KES 63/kg | 15 % | 25% | 30% | na | 30% | 25 % or K8 50/ kg | 15% ¹¹ |
| 4.06: Cheese and Curd | | | | | | | | |
| COMESA | Exempt | 6% | 25% | 27% | 5% | 18% | 0% | 0% |
| EAC | 15% | 0% | 5% | na | na | na | na | na |
| SADC | na | na | na | na | 25% | na | 25 % | 0% |
| Other Countries | 60% or KES 63/kg | 15 % | 25% | 30% | na | 30% | 25 % | 0% |

Lack of harmonized tariff on intra-regional trade in dairy products is quite evident. Similarly lacking is a common policy on how the region relates with third countries in regard to imports of dairy products. There is disparity in external tariff policy, a phenomenon, which creates opportunity for trade diversion from the regional countries to the third countries. A common external tariff policy stimulated by the need to promote regional dairy sector is needed.

Tariff reforms on dairy products under EAC Customs Union

The EAC block is already in the process of addressing the concern about regional disparity in intra-regional trade tariff and extra-regional trade tariff through the provisions of the Customs Union Protocol. Under the EAC Customs Union Protocol, Kenya is to grant imports from Tanzania and Uganda a duty free status immediately implementation of the EAC Customs Union is launched (around January 2005).

Uganda and Tanzania are to apply duty on Kenya's imports starting with 10% and 25% upon the start of implementation of the Customs union, and progressively reduced this to zero by the six year of implementation.

Table 8: Tariff on Kenya's exports of dairy products to Tanzania under the EAC Customs Union

| Tariff | Item | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | 6th Year |
|--------|--------------------|----------|----------|----------|----------|----------|----------|
| 04.01 | Milk | 25% | 20% | 15% | 10% | 5% | 0% |
| 04.02 | Milk Powder | 25% | 20% | 15% | 10% | 5% | 0% |
| 04.03 | Yogurt | 25% | 20% | 15% | 10% | 5% | 0% |
| 04.04 | Whey | 25% | 20% | 15% | 10% | 5% | 0% |
| 04.05 | Butter | 25% | 20% | 15% | 10% | 5% | 0% |
| 04.06 | Cheese | 25% | 20% | 15% | 10% | 5% | 0% |

Table 9: Tariff on Kenya's exports of dairy products to Uganda under the EAC Customs Union

¹¹ 0% for pure cow ghee (040590).

| Tariff Heading | Item | 1st Year | 2nd Year | 3rd Year | 4th Year | 5th Year | 6th Year |
|----------------|--------------------|----------|----------|----------|----------|----------|----------|
| 04.01 | Milk | 10% | 8% | 6% | 4% | 2% | 0% |
| 04.02 | Milk Powder | 10% | 8% | 6% | 4% | 2% | 0% |
| 04.03 | Yogurt | 10% | 8% | 6% | 4% | 2% | 0% |
| 04.04 | Whey | 10% | 8% | 6% | 4% | 2% | 0% |
| 04.05 | Butter | 10% | 8% | 6% | 4% | 2% | 0% |
| 04.06 | Cheese | 10% | 8% | 6% | 4% | 2% | 0% |

Common External Tariff

It is 25% for Yogurt, Whey, Butter and Cheese. Milk and Milk Powder is however classified as sensitive products and therefore attracts a duty of 60% in all the three EAC countries as illustrated in table 10.

Table 10: Applicable rates for sensitive products

| Tariff Heading and HS Code | Product description | Kenya | Tanzania | Uganda |
|----------------------------|--|-------|----------|--------|
| 04.01 | Milk and cream, not concentrated nor containing added sugar or other sweetening matter. | | | |
| 0401.11.00 | - Of a fat content, by weight, not exceeding 1% | 60% | 60% | 60% |
| 0401.20.00 | - Of a fat content, by weight, exceeding 1% but not exceeding 6% | 60% | 60% | 60% |
| 0401.30.00 | - Of a fat content, by weight, exceeding 6% | 60% | 60% | 60% |
| 04.02 | Milk and cream, concentrated or containing added sugar or other sweetening matter. | | | |
| 0402.10.00 | - In powder, granules or other solid forms, of a fat content, by weight, not exceeding 1.5% - In powder, granules or other solid forms, of a fat content, by weight, exceeding 1.5% : -- Not containing added sugar or other sweetening matter | 60% | 60% | 60% |
| 0402.21.10 | --- Specially prepared for infants | 60% | 60% | 60% |
| 0402.21.90 | --- Other | 60% | 60% | 60% |
| 0402.29.10 | --- Specially prepared for infants | 60% | 60% | 60% |
| 0402.29.90 | --- Other | 60% | 60% | 60% |
| 0402.91.10 | --- Specially prepared for infants | 60% | 60% | 60% |
| 0402.91.90 | --- Other | 60% | 60% | 60% |
| | -- Other | | | |
| 0402.99.10 | --- Specially prepared for infants | 60% | 60% | 60% |
| 0402.99.90 | --- Other | 60% | 60% | 60% |

Non-Tariff Charges

In addition to import duties, a host of other non-tariff charges are currently being applied on imports of dairy products. These charges include Value Added Tax on the cif value of imports and range between 15% and 17.5% in all the sample countries, except Uganda and Tanzania. The charges are Import Declaration Form (IDF) fees in Kenya at 2.75% of the cif value of the imports and Tanzania at US\$10 per tonne;

Standard Bureau Fees of 0.02% and 1% in Kenya and Malawi, Dairy Authority cess of 0.03% in Kenya, Pre-Shipment Inspection Fees of 1.2% and 0.9% to 1% of cif value of imports in Tanzania and Malawi, respectively; suspended duty of 20% in Tanzania on imports from EAC countries and excise duty of 10% in Uganda and Zambia. The table below provides details on these non-tariff charges across the sample countries.

Table 11: Schedule of non charges on imports of dairy products

| | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------|---------------|--------|--------------------|----------|------------|-------------------|-----------|
| VAT | 16% | Exempt | 0% | 15% | 17,5% | 17.5% | 15% |
| IDF | 2.75 % cif | | | NF | n.a. | 0% | - |
| Standards Bureau Fee | 0.02 % cif | | - | NA | 1% | 0% | - |
| Dairy Authority Cess | 0.03 % | | - | Nil | n.a. | 0% | - |
| Pre-Shipment | | | 1.2% cif | Nil | 0.9-1% cif | NA ¹² | US\$70 |
| Suspended Duty | | | 20% on EAC only | NF | 0 | NA | None |
| Excise duty | | 10% | - | Nil | 0 | 10% ¹³ | None |

The effects of the non-tariff charges have been to negate the benefits of low intra-regional tariff on dairy products. This is an issues raised by traders in the region as being of gross concern.

The main barrier created by imposing a suspended duty is the unpredictability it imposes on traders because of the haphazard manner in which it is applied. It often comes into effect immediately after imposition and therefore could greatly erode the competitiveness of commodities procured prior to its imposition. Another problem is that they tend to stay longer than necessary despite being intended for short-term protection of domestic producers.

Recommendations

a) Reduce import duty on intra-regional trade in dairy products to zero

COMESA countries, which are not yet members of the FTA should consider fast tracking reduction of duty on intra-regionally sourced dairy products to zero. For EAC, Uganda and Tanzania may need to re-categorize dairy and dairy products to Category A so that duty on imports from Kenya may be reduced to zero on the launch of the customs union implementation program in 2005.

b) Regional dairy trade development policy

A regional dairy trade development policy, taking cognizance of the regional market potential, installed capacities, which are at the moment underutilized needs to be developed. This policy should act as a guide to the region's decision on introduction of a Common External Tariff, which upholds the ideals of such a policy.

c) Regional policy on non-tariff charges on dairy products

To address the market distortion effects on non-tariff charges, which vary across the region, there is need to come up with a harmonized schedule of non-tariff charges. Such charges should be limited to the ones allowable under the WTO General Agreement on Trade and Tariffs (GATT) and should be kept very low.

¹² Zambia does not require PSI

¹³ Charged on value added dairy products

4.2.3 Dairy products quality standards

The standards used by the sample countries vary widely. Annex 3 provides a detail presentation of the product standards and highlights specifications in each of the standards across the sample countries. Each country has its own standards and testing methods and as such, a certificate issued in any one of the countries may not be valid in another. The problem is exacerbated by the lack of cooperation among the regulatory and enforcement agencies in these countries.

Table 12: Summary of product standards for milk and milk products to be found in the sample countries

| Product Standard for milk and milk products | KE | UG | TZ | ETHI | MAL | ZAM | RWA | MAU |
|---|----|----|----|------|-----|-----|-----|-----|
| Unprocessed (Whole) milk | √ | √ | √ | √ | √ | | √ | √ |
| Pasteurised liquid milk | √ | | | | | √ | √ | √ |
| Ultra-Heat Treatment (UHT) milk | √ | | | | | | √ | √ |
| Powder milk | √ | √ | | √ | √ | √ | √ | √ |
| Yogurt milk-plain fruit and flavoured | √ | √ | √ | √ | √ | √ | | √ |
| Butter | √ | √ | √ | √ | | | √ | |
| Cheese General | √ | | √ | | | | | |
| Cheese – Specific Type (Cottage Cheese, Cream Cheese, Process Cheese, Cheese Spread and Cheddar Cheese) | √ | | | | | √ | √ | √ |
| Reduced fat milk | √ | | | | | | | |
| Skimmed milk | √ | | | | | √ | | |
| Evaporated milk | √ | | | | | √ | | |
| Evaporated skimmed milk | √ | | | | | | | √ |
| Sweetened condensed milk | √ | | | | | | | √ |
| Skimmed sweetened milk | √ | | | | | | | |
| Ghee | √ | | √ | | | √ | | |
| Cream | √ | | | | √ | √ | | √ |
| Ice cream | √ | √ | | | | | | √ |
| Milk ice | √ | | | | | | | √ |
| Flavoured milk | | | | | | | | √ |
| Pasteurized milk | | | | | | √ | | |

As illustrated in Table 12, there are numerous cases where some countries have not developed standards of dairy products that are being produced by other countries in the region. Therefore, the disparity is not just on specifications and testing methods but also on the available standards.

The participation and involvement of various institutions in the enforcement of standards and certification of quality standards of products and services remains one of the greatest barriers to regional trade. For example, quality and standards assurance in Kenya is enforced by the Kenya Dairy Board (KDB), the Kenya Bureau of standards (KEBS), the Ministry of Health (Public Health Department), the Veterinary Department of the Ministry of Livestock and Fisheries and Local Authorities, each working independently under different statutes. In Ethiopia, the regulatory framework involves Quality and Standards Authority, Ministries of Health and Agriculture, customs authority and the chamber of commerce. In Mauritius the mandate for food inspection is shared among four Ministries, namely, Health, Agriculture, Industry and Commerce

and Local Government. The story is the same in the other countries. The process involves physical examination and laboratory testing/analysis of the goods to verify their adherence to the required national standards.

As mentioned earlier, lack of coordination among the various enforcement Agencies complicates matters for traders, who have to go through these Agencies before their goods can be cleared by the customs. The process is cumbersome and expensive since every organization has to make independent assessments, thus duplicating efforts in some cases. There are cases where some offices of these Agencies lack requisite equipment and facilities for testing, at the border posts. As a result, samples for analysis have to be transported to laboratories in the capital or provincial headquarters. This implies delay in clearance of the goods by the customs often at extra costs to the traders. The traders incur extra cost of warehousing, transport charges, spoilage and pilferage and other miscellaneous expenses, thus escalating the cost of operation and reducing profitability.

Inspection certificates from other countries are not usually considered since inspectors insist on carrying out their own assessments. Cases of intimidation, harassment and extortion of traders by responsible officials during this exercise are widespread, especially for perishables such as dairy products.

The regulatory capacity is weak in most of the countries under review to be able to provide effective monitoring. The Malawi Bureau of Standards (MBS), for example, lacks dairy-specific knowledge and experience, and its ability to inspect dairy products and monitor the dairy industry is limited. At production level, the quality checking is also insufficient and therefore the quality of milk is inconsistent. In Uganda, the bodies responsible for checking and enforcing the standards (Uganda National Bureau of Standards-UNBS, the Ministry of Agriculture, Animal Industries and Fisheries – MAAIF, the Dairy Development Authority and Urban Authorities) are thin on the ground, poorly facilitated and do not have the basic facilities such as laboratories, testing equipment for use in the field and inadequate trained manpower. Similar problems face the regulatory agencies in Zambia. Partly, this is attributable to inadequate funding advanced to these agencies. The weak regulatory framework has led to proliferation of informal cross border trade in milk and milk products, which puts the countries at the risk of animal disease and public health risks.

The administration of quality standards in some countries is too centralized. In Uganda, the exporters and importers from Mbale (Kenya Border) and Rakai (Tanzania Border), for example, would be at a disadvantage if they have to come to Kampala for import permits, sanitary or quality certificates. A lot of un-inspected produce crosses the borders, often within a few meters of the officials, rendering measures meaningless. Moreover, a lot more trade takes place at unofficial crossings where these measures cannot be enforced.

Box 2
Harmonized Dairy Standards in EAC

The EAC Member States have harmonized quality standards for the following dairy products

- UHT Milk
- Yogurt (Sweetened and Flavoured)
- Dried whole milk and skimmed milk powder
- Unprocessed whole milk
- Milk and milk products – methods of microbiological examination Part 1: Total plate count
- Milk and milk products – methods of microbiological examination Part 2: Coliform plate count
- Milk and milk products – methods of microbiological examination Part 3: Yeast and mould
- Milk and milk products – methods of microbiological examination Part 4: Swab test
- Pasteurized liquid milk
- Dairy milk ices and dairy ice cream
- Milk based baby foods
- Butter
- Milk powders
- Condensed milk

The standards are not yet in use. During this study it was established that the private sector is also unaware of these standards. It is therefore important that private sector input into the standards be obtained before they are released for application.

Recommendations

a) Develop quality standards for all dairy products, which are being produced in the region.

Standards for all dairy products currently being produced in the region need to be developed, irrespective of whether one or only two countries are the only ones producing such products.

b) Harmonize quality standards on dairy products and testing methods

For commodities where quality standards are in place across the countries, there is need to harmonize them in order to address the divergences observed in this study.

c) Rationalization of the role of bureaus of standards and ministries of health on matters pertaining to milk and milk products quality and safety standards

The region needs to develop a trade facilitation program, clearly spelling out the role of bureaus of standards and ministries of health on matters pertaining to product quality and food safety.

d) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of product quality and food safety standards.

A regional capacity building program should be introduced, targeting institutions involved in enforcement of enforcement of product quality and food safety

standards. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resource, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

e) Regional mark of quality

In recognition of institutional limitations which are manifested by lack of staff at border points and testing facilities, the region needs to development an accreditation system which should come up with regionally recognized mark of quality for dairy products.

4.2.4 Sanitary requirements

4.2.4.1 Animal disease attestation

It is mandatory in all countries that imports of dairy products be accompanied by Animal Health Certificate issued by a Competent Authority – i.e arms of the Government responsible provisional of Veterinary Services. Table 14 provides details of the conditions, which must be certified on the Animal Health Certificate.

Table 14: Sanitary Requirements

| Country | Sanitary Requirements |
|----------------|---|
| Zambia | <i>The following requirements are applicable to imports of all dairy products:</i> (a) Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; (b) Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; (c) Laboratory Tests before disposal |
| Mauritius | The veterinary services requires that the exporting country is free from BSE, Foot and Mouth Disease and mad cow disease. |
| Tanzania | a) Imports must be from countries not under veterinary restrictions. In addition certification for FMD, and Rinderpest, needed. <i>This requirement is applied on raw (whole) milk</i> b) Certification of HACCP for imports of Pasteurized and UHT milk |
| Malawi | <i>The following requirements are applicable to imports of all dairy products:</i> a) Certification by Competent Authority that there were no cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months in the country of origin b) Certification that milk is processed in Government registered and licensed factories which are subjected to regular inspections |
| Kenya | <i>The following requirements are applicable to imports of all dairy products:</i> Imports of milk and milk products must be certified by an official veterinary surgeon as meeting the following animal health attestation requirements: a) The area within a 10km radius of the farms of origin has been free from any disease to which cattle are susceptible and which are notified to the Veterinary Authorities of the country |

| Country | Sanitary Requirements |
|---------|---|
| | <p>of origin within the previous 3 months</p> <p>b) There has been no Foot and Mouth Disease, Lumpy Skin or Contagious Bovine Pleuropneumonia within 50km of the farms of origin within the previous 3 months</p> <p>c) There has been no Foot and Mouth Disease Types SAT1, SAT3 or ASIA 1 or Rinderpest or Vesicular stomatitis recorded in the country of origin within the previous four years. There is no recorded case of Bovine spongiform encephalopathy in the country of origin</p> <p>d) That the milk or milk products originate from animals that have passed the following tests within 30 days prior to the exports:</p> <ul style="list-style-type: none"> ➤ Single comparative intradermal Tuberculin Test for Tuberculosis applied and interpreted according to the standards of WHO/OIE/FAO ➤ Serum Agglutination Test for Brucellosis interpreted with regard to any previous vaccination according to the standards of WHO/OIE/FAO ➤ Complement fixation test for Johnes Disease (Paratuberculosis). <p>e) Do not constitute any danger of introducing infectious or contagious diseases such as vibriosis, leptospirosis, Trichomoniasis, Brucellosis, the herds have been free for 2 years and in any case of Bovine Leucosis and Johnes Disease for 5 years. There is no recorded case of Bovine Spongiform Encephalopathy (BSE) in the country of origin.</p> <p>f) Having been prepared from raw milk derived from animals, not showing clinical signs of a disease that can be transmitted through milk/milk products that the raw milk was produced, handled and kept hygienically and subjected to preliminary qualitative tests, including Resazurin test, adulteration tests, organoleptic test, etc. and found to be of good quality before processing.</p> |
| Uganda | <p><i>The following requirements are applicable to imports of all dairy products:</i></p> <p>Certification by Competent Authority that there were no cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months in the country of origin</p> |
| Rwanda | <p><i>The following requirements are applicable to imports of all dairy products:</i></p> <p>Certification by Competent Authority that there were no cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months in the country of origin</p> |

The procedure for importation in all countries requires that an importer obtain a no objection permit from the Veterinary services office. This permit stipulates the above for certification by the exporting country in the animal health certificate.

Results from national baseline studies indicate that animal health requirements and enforcement procedures have been single most impediments to trade in dairy products in COMESA and EAC countries. These impediments have assumed the following forms: -

- Lack of capacity and requisite infrastructure to monitor processing activities of licensed establishments for purposes of authenticating exports of dairy products to the satisfaction of Veterinary Authorities in the importing countries. Lack of information on the prerequisite for licensing of establishments for processing dairy products is also an impediment to investments in the sector, especially among small

and medium enterprises that rely on such public information to initiate investment ventures. The case of Kenya in box 1 illustrates the significance of this limitation.

- Lack of cooperation among veterinary services competent Authorities in the region, whose actions in enforcement of sanitary requirements is abrupt and unilateral, often catching traders unaware. Lack of cooperation mechanism means that the ensuing dispute, may linger for months, despite the problem at the center of the dispute being a simple clarification of a fact, e.g. disease control measures put in place by the importing country (see the Zambia/Kenyan case, where Kenya's exports to Zambia was halted by the Zambian Authorities on animal disease question)
- Lack of a common strategy to addressing animal disease problem in the region. As a result, there are instance where milk and milk products are barred from one country despite the disease which prompts this action being known to be confined in a specific geographic location within the country.

Box 3
The Case of
Zambia/Kenya Dairy Trade

Case:

Tuzo Long Life(UHT) milk denied market access in Zambia

Why?

"We regret to inform you that after considering the report of the inspection of the dairy industry in Kenya, a few concerns have arisen with regards to the occurrence and control of certain livestock diseases and safety of the milk with regards to these diseases. Until more detailed risk analysis is carried out in this regard we can not authorize the importation of Tuzo Long Life Milk".

After clarification, the following provided as a way forward for Kenya Long Life to be allowed market access in Zambia

- Need map of livestock disease distribution for Kenya
- The progress on the planned Brucellosis survey in Nakuru by the Veterinary Department
- Is Tuberculosis and Brucellosis testing and accreditation of the dairy farms mandatory and if it is under what legal framework

4.2.4.2 Public health attestation

Public health import permit is mandatory before milk imports into the following countries: Kenya, Ethiopia, Tanzania, Mauritius, Malawi, Zambia and Rwanda. The permit stipulates food safety requirements, which the milk product being imported must comply with. Taking Kenya's requirements as an illustration, the public health requirements prescribe the following conditions: -

That milk and milk products: -

1. Were manufactured in establishments approved for the purposes of processing milk/milk products intended for export by a competent Health/Veterinary Authority
2. Were subjected to an initial treatment having an effect at least equivalent to that achieved by pasteurization at a temperature of at least 72 degrees centigrade for at

east 15 seconds so as to produce a negative reaction to the phosphatase test, followed by:

- c) a second heat treatment involving high temperature pasteurization, UHT or Sterilization, so as to produce a negative reaction to the peroxidase test, or
 - d) in case of milk powder or dry milk based product, a second heat treatment having an effect at least equivalent to that achieved by the first treatment, so as to produce a negative reaction to phosphatase test, followed by a drying process, or
 - e) an acidification process such that the PH value is lowered and kept at below 6 for at least one hour
- 3. Do not contain any harmful additives and is unconditionally passed safe and fit for human consumption, and are permitted to circulate and be distributed in Kenya.
 - 4. Do not contain foreign substances including toxins (microbial or otherwise) or chemical residuals.
 - 5. Have not been exposed to radioactive contamination and have a radioactivity level not exceeding 21BQ per kg, calculated on CS 137.
 - 6. Have been processed, handled, stored and transported or shipped hygienically and all necessary precautions taken to prevent contamination and that they are sound prior to dispatch.
 - 7. Were subjected to necessary quality control including laboratory tests and found to be of good quality and free from pathogenic organisms, including coliforms, listeria, etc.
 - 8. Were manufactured from milk derived from animals reared within the country of origin,
 - 9. Is not of inferior quality than otherwise specified under various Kenyan standards.

The areas of concern with regard to public health/food safety issues are as follows: -

a) Divergences in the public health requirements.

While for all the countries mentioned above the requirements in county reports were not as elaborate, as the one summarized for Kenya, it is evident that the requirements vary across the countries. In addition:

b) Multiplicity of institutions involved in the enforcement of public health requirements on dairy products.

The following institutions have an aspect of public health requirements which they are interested in checking before milk imports can be allowed into the country: Veterinary Services, Ministries of Health, Bureaus of Standards, Local Authorities (public and animal health sections). There lacks collaboration among these institutions as a result of statutes, which fail to recognize that there are players in the inspection process.

c) Institutional limitations

The capacity to adequately enforce the law and regulations is low mainly due to the inadequate staffing levels, the lack of suitably trained personnel, and lack of logistical support to the enforcement staff.

4.2.4.3 Recommendations

a) Establish a system for facilitating cooperation between Veterinary Services on the following areas: -

- Share of information on disease and disease control systems
- Joint animal disease control system, especially along common borders
- Joint regional information dissemination targeting traders on regulatory requirements

b) Harmonization of sanitary requirements and implementation procedures.

There is need to harmonize sanitary requirements (animal disease and public health attestation requirements) in the region. The role of the following institutions will also need to be rationalized: Veterinary Services, Ministries of Health, Bureaus of Standards and Local Authorities in the region will need text missing

c) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of sanitary requirements.

A regional capacity building program should be introduced, targeting institutions involved in enforcement of sanitary requirements. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resource, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

d) Establish a mechanism for settlement of disputes on SPS issues.

A regional mechanism for facilitating reporting and settlement of cases of SPS disputes need to be established.

4.2.5 Customs requirements and procedures

Trade in dairy products is subjected to customs documentation and procedures which include declaration of the goods being traded (exports/imports) in the Customs Entry Document and other mandatory requirements, which traders must fulfil before the products can be cleared by the customs. A description of these document and requirements is detailed below.

Customs entry documents

In the eight sample countries, customs clearance procedures have been greatly eased by the introduction of a single entry document (SED), which replaced numerous customs forms that were cumbersome and difficult for traders. Although the SEDs have been adopted from the model COMESA Customs Document (COMESA CD), the level of details varies across the countries.

While the single entry documents are lauded by the traders of the dairy products as having eased the burden associated with declaration of goods in numerous customs forms, the following areas of concerns were noted.

- In some countries details called for in the SED put off cross border traders, who may not have these details or may shy from giving the details. The examples of details, which were of concern to the traders include Personal Identification Number.

- Lack of knowledge among traders and enforcement customs officers on how to complete the form and its use, which resulted in rejection of the documents and consequent delays in customs clearance.

Other Customs requirements in the clearance of dairy products

There are other regulatory requirements, which are mandatory in the process of clearing goods declared in the SED. The principle behind these requirements is that goods, which the customs clears, must have been permitted to enter the country on having met regulations being enforced by other government departments. The regulatory requirements, which fall under this category are as follows:

- Sanitary Certificate (Issued by the Department of Veterinary Services)
- Quality Standards Certificate (Issued by Standards Bureau)
- Import Health Certificate (Issued by the Ministry of Health)
- Export Health Certificate (Issued by the Ministry of Health)
- Import Permit (Ministry of Agriculture/Livestock Develop.)
- Export Permit (Issued by Ministry of Agriculture/Livestock Develop.)

There is however customs specific regulatory requirements aimed at providing information to assist the customs officials in valuation of the dairy products and other products in general. As a results of these requirements, the traders are required to furnish the customs with the following sets of documents.: -

- Import Declaration Form (IDF) obtained from PSI firm
- Proforma Invoice to the inspection unit (e.g. PSI Firm)
- Original Commercial Invoice (for customs valuation)
- Certificate of origin (for dairy products originating from EAC and COMESA)

As evidenced in table 15, these requirements vary across the sample countries. In Kenya and Tanzania, traders are required to lodge customs documents through licensed clearing agents (if dairy products and other products in general are for commercial use)

Table 15: Summary of Customs Clearance Requirements for Dairy Products imports/Exports in the Selected Countries

| | | KE | UG | TZ | ETH | MAL | ZAM | MAU |
|---|--|----|----|-----------------|-----|-----|-----|-----|
| 1 | Import Declaration Form (IDF) obtained from PSI firm | √ | √ | √ ¹⁴ | | | √ | |
| 2 | Proforma Invoice to the inspection unit (e.g. PSI Firm) | √ | | √ | √ | | | |
| 3 | Original Commercial Invoice (for customs valuation) | √ | | | √ | √ | √ | √ |
| 4 | Bank Permit/Letter of Credit | | | | √ | | | |
| 5 | Pre-shipment Inspection (for Customs Clean Report of Finding – CCRF) | √ | √ | √ ¹⁵ | √ | | | √ |
| 6 | Sanitary Certificate (Issued by the Department of Veterinary Services) | √ | √ | √ | √ | | √ | |
| 7 | Quality Standards Certificate (Issued by Standards Bureau) | √ | √ | √ | √ | | √ | |
| 8 | Import Health Certificate (Issued by the Ministry of Health) | √ | √ | √ | | | | |

¹⁴ Obtained from a commercial bank that later issues a Provisional Classification and Valuation Report, PCVR. IDF acts as import license.

¹⁵ Since July 2004, Tanzania has changed from pre-shipment inspection to destination inspection.

| | | KE | UG | TZ | ETH | MAL | ZAM | MAU |
|----|---|----|----|----|-----|-----|-----|-----|
| 9 | Export Health Certificate (Issued by the Ministry of Health) | √ | √ | √ | | | | |
| 10 | Import Authorization Permit (Ministry of Agriculture/Livestock Develop.) | √ | √ | √ | √ | √ | √ | √ |
| 11 | Export Permit (Issued by Ministry of Agriculture/Livestock Develop.) | √ | | √ | √ | √ | √ | √ |
| 12 | Lodgement of customs documents by licensed clearing agents (if dairy is for commercial use) | √ | | √ | | | | |
| 13 | Certificate of origin (for dairy products originating from EAC and COMESA) | √ | √ | √ | √ | √ | √ | √ |

Where as the significance of the additional requirements can be supported by all trade facilitating institutions in the sample countries, a number of concerns have been raised concerning the extent to which these requirements have hindered development of trade in dairy products as follows: -

Export/Import authorization permit: Subjectivity with which this regulatory requirement is enforced and the fact that it is issued only at the capital discourages traders from pursuing the import/export authorisation. Specifically lack of objective criteria for rejection/approval of an application discourages formal trade in dairy products. Cross border traders overcome this limitation by opting for informal trade.

Sanitary/Animal Health, Quality and Food Safety Certificates. As already mentioned under sections dealing with these regulatory requirements, trade in dairy products in the region is affected by duplicity of roles among the enforcement institutions. To require that traders accompany imports of dairy products with these certificates in order for the products to be cleared by the customs amounts to discouraging trade. This is especially because, as cited earlier, the requisite services leading to access of the certificates are not within the reach of traders, in most instances. Where as one cannot argue for exemption of these requirements in the process of customs clearance, there is need to address the concerns about down stream efficiency among the enforcement institutions. Anything short of this reduces the above customs requirements to superfluous conditions, which the traders avoid through informal trading or avoiding trade in the dairy products.

Pre-shipment inspection: PSI policy is undesirable and a duplication of duties already assigned to public bodies, since, more often than not, imports already inspected have to be re-inspected and re-valued before clearance thereby imposing extra costs to the trader. PSI therefore contributes to uplifting of the effective rates of duty thus restricting trade. The policy is unnecessary for agricultural products which are already subjected to inspection by public health officials and other quality regulatory bodies, and therefore amounts not only to duplication of duties but also double taxation of traders.

Recommendations

- i) **The COMESA Simplified Single Entry Document** and Certificate of origin, which are currently under review needs to be completed in order to facilitate cross border trade of dairy products by small and medium traders. Dairy products should therefore be among the commodities to qualify for clearance through this document.
- ii) **Requirements for customs documents** to be lodged by licensed clearing agents should be reviewed, with the aim of making the requirement optional for agricultural consignments that are less than US\$5000. This policy change should however be backed by extensive education of customs entry documents and procedures.
- iii) **Pre-shipment inspection** should be eliminated for regionally sourced dairy products. Along with this policy measure, the requirement for IDF and IDF fees should also be phased out, for regionally sourced dairy products, especially because IDF is merely a record of intention to import. Actual imports are captured through customs statistics.
- iv) **All trade regulatory institutions**, which have to inspect dairy products (as in deed all other commodities) before release should carry out inspection at the same time to avoid delays.
- v) **For the few countries**, which are still enforcing foreign exchange controls, mandatory requirement of irrevocable LC before issuance of export permit for regionally destined exports of dairy products should be dropped. Other less punitive trade finance instruments, such as Cash Against Documents (CAD) should be applied.

5.0 Integrating the Informal Milk Markets into Domestic and regional milk supply chains in Eastern and Central Africa

5.1 Overview

A major outcome of the ECAPAPA/RATES/ILRI study has been the documentation of the important role informal (“raw or traditional”) milk markets play in Eastern and Central Africa, with industrially processed milk product markets playing only a minor role. This dominance of informal markets limits the supply of quality milk and reduces the efficiency in domestic and cross-border milk markets. The informal milk markets flourish because they are favoured by current trends in production, which is mainly small-scale, and trends in consumption of dairy products, which is mainly driven by cost considerations. Most poor consumers are reluctant to pay for “value-adding”, which may actually mean “cost-adding” in their mind. Though they dominate and supply over 80% of marketed milk in the region, the informal small-scale milk markets are largely neglected or actively discouraged due to perceived quality and safety concerns.

Since demand of milk is predicted to grow dramatically due to population growth, urbanization and a modest increase in incomes (Delgado et al., 2001), pro-active steps should be taken to transform the markets to meet the increasing demand for quality milk and integrate them into domestic and regional milk supply chains. Such a strategy, if commonly agreed upon and adopted regionally, would ease the flow of milk across borders and along the value chains, thus increasing benefits to consumers, traders and producers. This chapter outlines the importance of the informal milk markets in the region and the factors behind its dominance, and proposes a strategy for integrating these markets into overall milk supply in domestic and regional markets.

5.2 The nature of informal milk markets in the region

The term ‘informal’ is open to different interpretations. It was coined to refer to people operating outside the law including taxation, but now commonly refers to small-scale traders operating with licenses as well. Therefore, many informal traders are not necessarily informal in terms of legal status. In dairy markets, industrial processing or its absence is commonly applied to separate formal from informal milk markets. All industrial processors are licensed while traders of non-industrially processed milk may or may not be licensed. Most people enter informal dairy marketing as a survival strategy, as it often offers an immediate opportunity for income generation, particularly for those without access to land resources. ‘Informality’ in dairy farming is also sometimes linked to traditional or indigenous products or practices, which are labeled informal because they are at variance with accepted international norms that stress cold-chain pathways and pasteurization.

Informality is frequently viewed as a symptom of underdevelopment, but this can be looked at differently. Informal businesses have the distinct advantage of demonstrating more flexibility in responding quickly to new opportunities than does the formal sector. The informal dairy sector is associated with many benefits: it provides off-farm employment for a huge number of people, offers higher prices to farmers, and

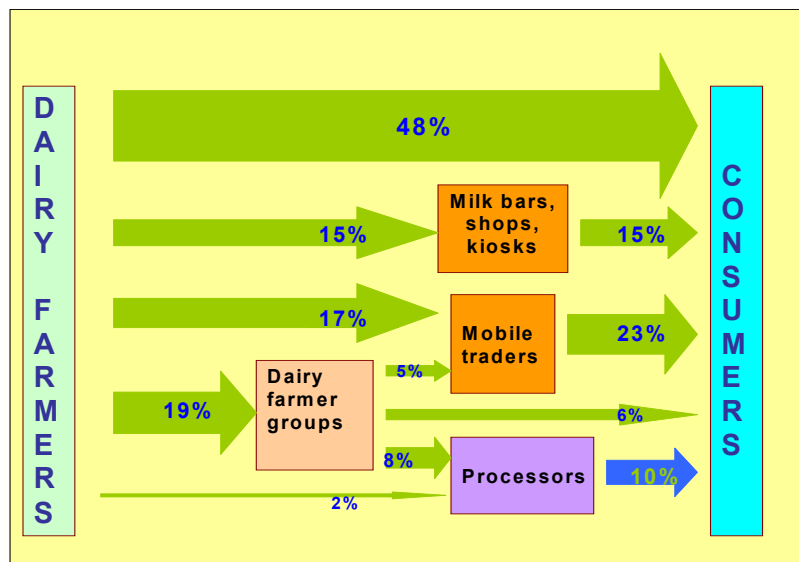
convenient delivery and lower process to consumers. The issue is that because the businesses are informal, they may be risky because they are without regulatory support or recognition, and so are often vulnerable in terms of incomes, which frequently fluctuate. They are also vulnerable to exploitation because they are unorganised, have little voice and lack understanding of business knowledge and technology. But they have the ability to grow and what is needed is to provide them with some of the protective benefits that ‘formality’ can offer.

5.3 Role of the informal traders in the milk market value chain

Presently over 70% of milk is reaches the consumers through informal traders. Common intermediaries in informal milk marketing chains include producer-sellers, mobile (itinerant) traders, wholesalers, farmer groups and retailers in milk bars, shops, kiosks and traditional butter processors (mainly in Ethiopia). Aggregate milk flows through these channels in the region are presented in Figure 1.

It is important to note that these trends are not unique to COMESA and EAC. The dominance of informal milk markets also applies to other countries in the South e.g., Nicaragua (86%) and India (83%).

Figure 1. How milk gets to consumers from farmers in Eastern and Central Africa, and percentage of raw and processed milk going through the different market channels



5.4 Impetus for prevalence of informal milk traders in the value chain

The major factors behind the dominance of informal milk markets are mainly lower price and traditional taste preferences. Available evidence indicates that formal milk markets will grow only as household incomes increase. The informal market is thus likely to predominate for many years to come, as it is driven by demand from mostly poor consumers. Besides the price advantage, other factors underlying the high demand

are the income and relatively high value employment (over thrice the minimum wage) that is generated for the traders. Over 70% of jobs in dairy processing and marketing are directly generated in the small-scale informal sector.

Milk prices along informal supply chains are less variable compared to processed milk pathways. It was observed during this study that in some cases where milk is processed, intermediaries take as much as 100% of the consumer price. On the other hand, partly because they avoid pasteurizing and packaging costs, informal markets are able to offer higher prices to farmers and lower retail prices to consumers. Where intermediaries are involved, they take only 20-50% of the consumer price. The intermediaries also sometimes get the milk delivered at the doorstep of the consumer and in variable quantities. The dominance of liquid milk that is highly perishable is also an important factor favouring shorter milk market channels and limiting the development of processed milk markets. In addition, poor infrastructure and high costs of electricity for cooling stifle the growth of the formal sector.

Though informal small-scale milk markets dominate in the region, they are largely neglected or actively discouraged by policies based on perceived quality and safety concerns. This discouragement occurs despite the many widely acknowledged benefits. The quality and safety concerns can however be largely addressed as outlined below.

5.5 Proposed strategies for transforming the informal sector

It is considered that since informal markets will continue to dominate in the foreseeable future, more attention must be given to resolving the constraints affecting them and enable them to evolve towards being formal. An example where trade is hindered due to such concerns is across the Uganda-Rwanda border. This has resulted in marked differences in prices for raw milk across the border. Recent research has however shown that the safety and quality concerns can be addressed through hygienic handling of milk and training of traders on safety and quality standards of milk. A system of certification of milk handled by the trained traders, observing the recommended hygienic standards will be a compulsory complement. While these efforts can be pursued at national level, a regional program designed for adaptation at national level would play a catalytic role in this process. Besides, if the program would in-build implementation time frame, implementation peer review process would serve as vital stimulant to adaptation of the regional program at national level, including facilitating change of legislations to accommodate the features of the program. It is therefore recommended that a regional program be drawn to encompass the following strategies:

-

a) Hygienic handling of milk products by informal traders

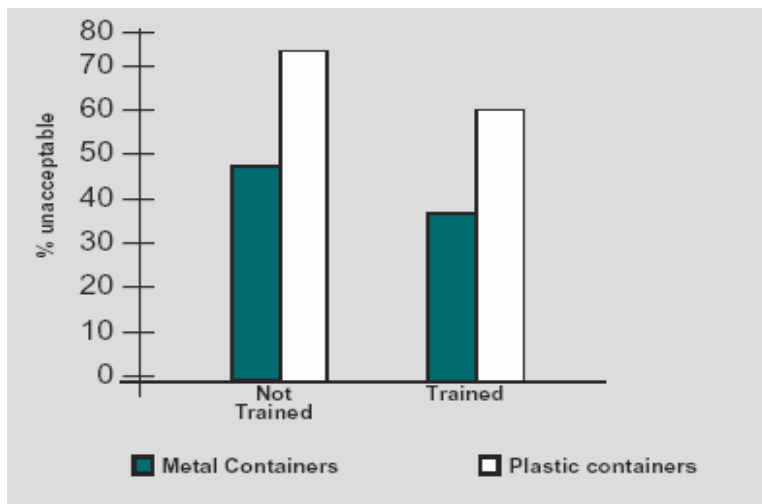
Introduce packaging regulations, which encourage use of metal instead of plastic containers among informal traders for milk destined for the market through informal channels.

b) Training of informal traders on safety and quality of milk

Design a regional training program on safety and quality of milk targeting informal traders. The training manual should be such that it is easy for designated institutions and programs to apply at national level.

Figure 2 shows the improvements in quality that can be attained through training. The pilot study conducted in Kenya showed that licensing alone, as is currently the practice, does not improve the quality of marketed milk, hence the justification for linking training with certification.

Figure 2. Comparison of quality of milk samples from untrained and trained traders according to Kenyan national hygiene standards for coliform counts (50,000 cfu/ml)



Source: MoLFD/KARI/ILRI SDP Policy Brief 4

Such a link would facilitate systematic testing of traded raw milk, and present a useful basis and premise upon which the informal markets can be integrated into domestic and regional milk supply chains, resulting in enhanced access to raw milk by all stakeholders at lower prices overall. Cleaner milk would last longer and boost consumer confidence in the product. The current common consumer practice of boiling raw milk prior to consumption must continue to be reinforced because milk borne zoonoses such as brucellosis can only be eliminated through appropriate heat treatment.

c) Certification of milk handled by trained informal traders

A certification system will need to be put in place for milk handled by informal traders. This will call for definition of parameters to guide the certification process.

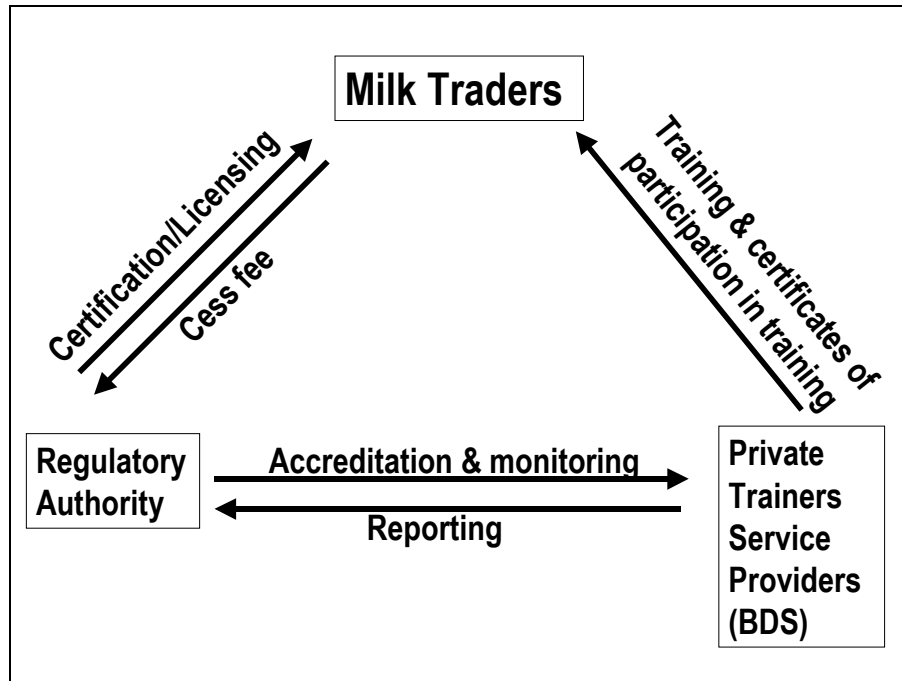
d) Business Development Services as a vector for integrating informal milk traders to formal milk market value chain

It is proposed that the strategy to address milk quality concerns and transforming the informal milk markets be based on the concept of business development services (BDS), and be supervised by national regulatory authorities.

The national regulatory authority would accredit private training service providers with a minimum qualification of a certificate in hygienic milk handling and quality control. The accredited private training service providers would offer training to traders based on a regionally certified curriculum on basic hygienic milk handling and quality control. Existing training/quality assurance materials in milk quality control in various countries could be synthesised into one generic guideline for adaptation by all

countries. The traders would then be issued with a certificate of participation at the end of the training. The certificate of participation would be the basis for issuance of a trading license when it is presented to the regulatory authority upon payment of some cess fee. These interactions between the national regulatory authority, accredited service provider and milk trader are presented in the figure below.

Figure 3. Proposed interactions between milk quality regulator, accredited service provider and milk trader



For ease of implementation, such a scheme could be undertaken on a pilot basis initially, and expanded as lessons are learnt. The funding required to initiate such a pilot could be sourced from national authorities or from international agencies such as FAO, etc.

6.0 STRATEGIES FOR EXPLOITATION OF THE REGIONAL MARKET POTENTIAL

6.1 Perspective

As already pointed out earlier in this report, the EAC and COMESA market for dairy products is over US\$120million per year. If we were to factor market growth dynamics in form of prospects for increased per capita income and possible increase of the per capita milk consumption from the current average level of 36litres per year to the WHO recommended level of 200 litres per day, the future market for dairy products in the region looks brighter.

Over 95% of the COMESA and EAC market of dairy products is serviced by extra regional imports. Further, over 80% of extra regional imports of dairy products is sourced from Denmark, South Africa, Canada, USA, France, New Zealand, Australia, the Netherlands and Poland.

The following factors represent underlying opportunities for increased trade that may be tapped by dairy businesses in COMESA to expand trade and enhance their long-term return on investment goals:

Surplus and Deficit Countries

COMESA has a mixed bag of what we may call milk surplus and deficit countries resulting from years of investment and comparative advantages. With some level of marketing effort and improved access there should be visible increase in trade between the milk deficit and surplus countries.

Seasonal Supply Cycles

Like all things agricultural, the weather determines the production levels of milk. In most African countries milk yields fall by more than 50% during drier periods lasting up to 6 months per year. Due to limited capacity to process long life dairy products, many countries experience predictable periods of scarcity and surplus.

Countries to the north, south and east experience different weather patterns making possible periods of accelerated import and export in almost all of COMESA.

Trans-national Retail Chains

Shoprite Checkers, Metro Cash and Carry, Uchumi, Imalaseko are but a few retail chains that have ventured out of their home countries by opening one or more outlets in other countries. Shoprite Checkers is emerging as dominant retailer in all but three of the 8 countries where the RATES/ECAPAPA study was carried out.



It is the practice of most retail chains that a listing in one of their outlets earns a product an almost guaranteed entry into all others. By supplying Shoprite in all countries it operates in COMESA from Mauritius to Angola and Bulawayo to Cairo, Kaposhi Cheese Zambia, for example, has a real opportunity of becoming a continental brand! Market access is greatly enhanced by this single development.

The EAC Customs Union and COMESA Free Trade Area (FTA)

By reducing entry prices, increasing trade margins and protecting the regional market from the international dairy giants, the EAC Customs Union and COMESA FTA offers a real prospect for increased trade in dairy. Combined impact of high tariffs and high freight charges is detrimental to trade initiatives and it is only by expanding the FTA can COMESA countries will begin to register growth in dairy trade.

Idle Capacity

Most dairy plants in COMESA are operating at capacity utilizations of less than 40%. Excess processing capacity, if where accompanied by abundant low priced milk as it happens during long rains in Uganda and Kenya, is one of the “low hanging fruits” for increased cross boarder trade in COMESA.

A combination of marginal process costing and low priced raw milk is a big incentive for importers to order in bulk and stock a head of low season.

Trans-national Dairy Processors

Dairy processors with subsidiaries in one or more countries are contributing in lowering the barriers to trade among affected countries. List of the emerging trans-national operators include; Parmalat SA, Zimbabwe DairiBoard and lately Brookside Kenya. Trans-national companies usually lobby for favourable trade regimes among the countries they operate in, sometimes leading to reduced tariff and non-tariff barriers.

Trans-nationals also enjoy better access to two or more markets due commonality of brands and ready distribution structures. Zimbabwe dairy exports to Malawi have increased drastically, at the expense of Zambian processors, since Dairiboard acquired a subsidiary in Malawi.

As more companies build partnerships across national borders, governments will increasingly find it unjustifiable to maintain steep trade barriers.

Privatization

Privatization results in a number of trade friendly outcomes. Privatized establishments tend to be more efficient and market their products more aggressively leading to probable increase in export. In many instances, privatized companies end up as subsidiaries of companies from neighbouring countries leading to increased trade as demonstrated above.

Trans-national Suppliers

Trans-national suppliers of packaging, ingredients and equipment tend to create uniformity in taste, packaging and product quality. Some suppliers encourage trade among their customers by providing reference, guarantees and other networking

arrangements. An example of a trans-national supplier that continues to influence regional trade in dairy and other packaged foods is Tetra Pak.

Other Trade

As a first moving consumer good, dairy can piggyback on expanding exports of other food items. Cross boarder traders of juices, cooking oils, bread spreads etc can easily take up distributorship of UHT milk, milk powder and cheese. There is evidence of increased regional trade in the above items that dairy can ride on.

6.2 Strategies for exploitation of the regional market potential

While trade policies and regulatory issues have been underpinned as key impediments to the intra-regional trade, lack of market networks and private sector alliances in the dairy industry has been shown to be a key factor in the equation for exploitation of the regional market potential. This spells need for clear strategies for forging such alliances through investment ventures and marketing networks. This section proposes a range of these strategies as follows: -

Establishment of regional supply networks

Without any organized cross boarder supply networks, the regional dairy industry has proved unresponsive to season-linked changes in supply and demand situations happening in not-too-remote parts of COMESA. The result is simultaneous persistent shortages and glut that puts to question the multi-million dollar investments by private sector, national governments and development partners to develop and grow the sector.

At almost no additional costs but rationalization of capacity, employing new approach to marketing and collaboration among stakeholders, dairy processors in COMESA have the opportunity to grow their business beyond the realm of their current projections. Players in different climatic zones with certain amount of excess capacity need to look at ways of collaborating by forming supply networks to fill seasonal supply gaps and possibly develop common export brands to create synergies. An example is where processors from Uganda, Zambia and Zimbabwe who currently supply their neighbouring sections of the DR Congo can jointly develop a common single brand of UHT milk and marketing campaign that is specific to that market.

Processors with real regional ambitions are faced with three key choices; substantially increase their processing capacity to meet year round demand in multiple markets, buy into companies with similar product lines in a number of target countries, or form strategic supply alliances with processors in strategic countries. A well thought out hybrid is probably the way to go subject to factors like available capital, shared vision and legal environment.

To reclaim a fair share of trade, COMESA processors have to find ways to link milk producers with diverse consumers all over the continent and beyond via a responsive grid spanning the region's geography. This value grid will deliver better returns to farmers, processors, traders and value for money to consumers. Its principles are analogous to those of the rivers NILE and ZAMBEZI; checking floods in Eastern, Central and parts of Southern Africa and delivering life sustaining waters to Botswana, Kalahari Desert, the Sudan and Egypt!

Other additional strategies are as summarized in Table 16: -

Table 16: Proposals for forging linkage of the regional dairy value chain

| Model | Explanation | Application | Benefits |
|----------------------------------|--|--|--|
| Contract Packing | Processing and packing of products for a client under his own label and recipe | <ul style="list-style-type: none"> • Usually done for one processor by another • Usually subject to availability of capacity and raw materials • Appropriate entry strategy before installing own capacity • May be used to fill seasonal gaps | <ul style="list-style-type: none"> • Good way to venture into difficult export markets • Leads to lower unit costs of production • Useful in managing over supply • Builds partnerships • No need to build own capacity |
| Franchising | Where one processor allows the other the use of his brand at a rental cost | <ul style="list-style-type: none"> • Appropriate where brand goodwill exist • Revenue sharing arrangement based on sales or margins • Shared cost of marketing • Use of trademarks | <ul style="list-style-type: none"> • Quick volume growth • Lower cost of entry • Shared expertise • Instant goodwill • Makes it possible to multi source • Consistency in product quality |
| Cooperative Branding | Processors in same or different markets agree to sell under one label | <ul style="list-style-type: none"> • Processors in one country may adopt one label for export • Agreement on minimum quality standard • Joint promotion budget • Common trademarks | <ul style="list-style-type: none"> • Continuity of supply • A way of meeting large orders • Keeps away competitors • Shared cost of marketing |
| Reciprocal Representation | Two or more companies agree to carry the other's products in home countries or regions | <ul style="list-style-type: none"> • Appropriate where in cases of complementing product lines • Reciprocating companies have shared regional ambitions • Collaboration may be on selected products | <ul style="list-style-type: none"> • Allows quick entry • Low cost of distribution • Beats protectionist sentiments • Improved capacity utilization for all parties |
| Private Labels | Key retailer, distributor or wholesaler develops own brand then contracts out the manufacture to a processor | <ul style="list-style-type: none"> • Happens where the distributor, retailer or wholesaler is major buyer • Appropriate where processor is facing stiff competition • A response to weak performance by processor brands • Requires excess capacity on side of processor | <ul style="list-style-type: none"> • Increased sales due to dedicated support • Minimal marketing expense by processor • Minimal entry effort if for export • Increased efficiency due better capacity utilization • Stimulates category growth |
| Supply Networks | Two or more companies agree to supply each other or regular or on need basis | <ul style="list-style-type: none"> • Appropriate for companies in different supply cycles • Players agree on common quality parameters • Appropriate for semi finished goods or under private label arrangement | <ul style="list-style-type: none"> • Ensures uninterrupted supply • Balances off supply and demand • Leads to stable pricing • Better efficiencies • Increased profitability • Removes justification for protectionism |

7.0 PROPOSED POLICY RECOMMENDATIONS FOR ENHANCING TRADE IN DAIRY PRODUCTS

7.1 Import controls/restrictions

a) Abolish import export authorization system

Import authorization system, which is not for purposes of enforcing SPS and Food Safety standards should be abolished. By so doing the role of domestic market protection will be relegated to tariffs on dairy products. This is the practise, which is recognized under the GATTS.

b) Devise a regional mechanism for detecting cases of dumping and subsidies

There is need to develop a regional mechanism for detecting cases of subsidized and dumped milk products. This will address the reasons behind protective system for import authorisation.

7.2 Tariff and non tariff charges

a) Reduce import duty on intra-regional trade in dairy products to zero

COMESA countries, which are not yet members of the FTA should consider fast tracking reduction of duty on intra-regionally sourced dairy products to zero. For EAC, Uganda and Tanzania may need to re-categorize dairy and dairy products to Category A so that duty on imports from Kenya may be reduced to zero on the launch of the customs union implementation program in 2005.

b) Regional dairy trade development policy

A regional dairy trade development policy, taking cognizance of the regional market potential, installed capacities, which are at the moment underutilized needs to be developed. This policy should act as a guide to the region's decision on introduction of a Common External Tariff, which upholds the ideals of such a policy.

c) Regional policy on non-tariff charges on dairy products

To address the market distortion effects on non-tariff charges, which vary across the region, there is need to come up with a harmonized schedule of non-tariff charges. Such charges should be limited to the ones allowable under the WTO General Agreement on Trade and Tariffs (GATT) and should be kept very low.

7.3 Product quality standards

a) Develop quality standards for all dairy products which are being produced in the region.

Standards for all dairy products currently being produced in the region needs to be developed, irrespective of whether one or only two countries are the only ones producing such products.

b) Harmonize quality standards on dairy products and testing methods

For commodities where quality standards are in place across the countries, there is need to harmonize them in order to address the divergences observed in this study.

c) Rationalization of the role of bureaus of standards and ministries of health on matters pertaining to milk and milk products quality and safety standards

The region needs to develop a trade facilitation program, clearly spelling out the role of bureaus of standards and ministries of health on matters pertaining to product quality and food safety.

d) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of product quality and food safety standards

A regional capacity building program should be introduced, targeting institutions involved in enforcement of enforcement of product quality and food safety standards. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resource, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

e) Regional mark of quality

In recognition of institutional limitations which are manifested by lack of staff at border points and testing facilities, the region needs to development an accreditation system which should come up with regionally recognized mark of quality for dairy products.

7.4 Sanitary requirements and Food Safety Standards

a) Establish a system for facilitating cooperation between Veterinary Services on the following areas: -

- Share of information on disease and disease control systems
- Joint animal disease control system, especially along common borders
- Joint regional information dissemination targeting traders on regulatory requirements

b) Harmonization of sanitary requirements and implementation procedures

There is need to harmonize sanitary requirements (animal disease and public health attestation requirements) in the region. The role of the following institutions will also need to be rationalized: Veterinary Services, Ministries of Health, Bureaus of Standards and Local Authorities in the region will need text missing?

c) Capacity building geared towards efficiency in trade facilitation among the institutions involved in enforcement of sanitary requirements

A regional capacity building program should be introduced, targeting institutions involved in enforcement of sanitary requirements. The design of such a program will need to address infrastructural requirements by these institutions (equipment/laboratory facilities etc), human resource, country outreach through establishment of branches or sharing same offices among countries at the border areas, etc.

d) Establish a mechanism for settlement of disputes on SPS issues

A regional mechanism for facilitating reporting and settlement of cases of SPS disputes need to be established.

7.5 Customs documentations and procedures

- a) The COMESA Simplified Single Entry Document and Certificate of origin, which are currently under review needs to be completed in order to facilitate cross border trade of dairy products by small and medium traders. Dairy products should therefore be among the commodities to qualify for clearance through this document.
- b) Requirements for customs documents to be lodged by licensed clearing agents should be reviewed, with the aim of making the requirement optional for agricultural consignments that are less than US\$5000. This policy change should however be backed by extensive education of customs entry documents and procedures.
- c) Pre-shipment inspection should be eliminated for regionally sourced dairy products. Along with this policy measure, the requirement for IDF and IDF fees should also be phase out, for regionally sourced dairy products, especially because IDF is merely a record of intention to import. Actual imports are captured through customs statistics.
- d) All trade regulatory institutions which have to inspect dairy products (as in deed all other commodities) before release should carry out inspection at the same time to avoid delays.
- e) For the few countries, which are still enforcing foreign exchange controls, mandatory requirement of irrevocable LC before issuance of export permit for regionally destined exports of dairy products should be dropped. Other less punitive trade finance instruments, such as Cash Against Documents (CAD) should be applied.

7.6 Proposed strategies for integrating the informal milk trade to the formal milk market value chain

A regional program designed for adaptation at national level would play a catalytic role in the process. The program should include implementation time frame, and an implementation peer review process would serve as a vital stimulant to adaptation of the regional program at national level, including facilitating change of legislation to accommodate the features of the program. It is therefore recommended that a regional program be drawn to encompass the following strategies: -

a) Hygienic handling of milk products by informal traders

Introduce packaging regulations, which encourage use of metal instead of plastic containers among informal traders for milk destined for the market through informal channels.

b) Training of informal traders on safety and quality of milk

Design a regional training program on safety and quality of milk targeting informal traders. The training manual should be easy for designated institutions and programs to apply at national level.

c) Certification of milk handled by trained informal traders

A certification system will need to be put in place for milk handled by informal traders. This will call for definition of parameters to guide the certification process.

d) Business Development Services as a vector for integrating informal milk traders to formal milk market value chain

It is proposed that the strategy to address milk quality concerns and transforming the informal milk markets be based on the concept of business development services (BDS), and be supervised by national regulatory authorities.

7.7 Strategies for exploitation of the regional market potential

a) Contract Packing

Processing and packing of products for a client under his own label and recipe

b) Franchising

Where one processor allows the other the use of his brand at a rental cost

c) Cooperative Branding

Processors in same or different markets agree to sell under one label

d) Reciprocal Representation

Two or more companies agree to carry the other's products in home countries or regions

e) Private Labels

Key retailer, distributor or wholesaler develops own brand then contracts out the manufacture to a processor

f) Supply Networks

Two or more companies agree to supply each other on regular or on need basis

g) Forward Trading

Getting customers to commit themselves to purchase given quantities of products a head of time

References

Baltenweck I., Staal S.J., Owango M., Muriuki H., Lukuyu B., Gichungu G., Kenyanjui M., Njubi D., Tanner J. and Thorpe W. 1998. *Intensification of dairying in the Greater Nairobi milk-shed: Spatial and household analysis*. Smallholder Dairy (Research & Development) Project. MoA/KARI/ILRI Collaborative Research Report. ILRI (International Livestock Research Institute), Nairobi, Kenya.

Bebe B.O., 2003. *Herd dynamics of Smallholder dairy in the Kenya highlands*. PhD thesis, Wageningen University, The Netherlands. ISBN: 90-5808-788-3.

CBS (Central Bureau of Statistics). 2002. *Economic Survey 2002*. Ministry of Finance and Planning, Nairobi, Kenya.

CBS (Central Bureau of Statistics). 2001. *1999 Population and housing census*. Volume I. CBS, Office of the President and Ministry of Planning and National Development, Nairobi, Kenya.

CBS (Central Bureau of Statistics). 1999. *Statistical abstract 1999*. CBS, Office of the President and Ministry of Planning and National Development, Nairobi, Kenya.

Conelly W.T. 1998. *Colonial era livestock development policy: Introduction of improved dairy cattle in high-potential farming areas of Kenya*. *World Development* 26:1733–1748.

Delgado, C., M. Rosegrant, H. Steinfeld, S. Ehui and C. Courbois. 2001 (updated from 1999). *Livestock to 2020: The Next Food Revolution*. Food, Agriculture, and the Environment Discussion Paper 28. International Food Policy Research Institute (IFPRI), Food Agriculture Organization of the United Nations (FAO), and the International Livestock Research Institute. Washington, D.C. 72 pp.

East African Community, 2003. *Sanitary Standards, Measures and Procedures for Mammals, Birds and Bees*. Harmonised Sanitary and Phytosanitary Standards Measures and Procedures (Volume 2).

ECAPAPA/RATES/ILRI Study, Country Reports, 2004

FAO (Food and Agriculture Organization of the United Nations). 1993. *Kenya Dairy Development Project preparation report*. Report 34/93 CP-KEN 33. FAO, Rome, Italy.

FAO Stats (2004)

Finance Bill, 2002. Ministry of Finance, Nairobi, Kenya

KEBS (Kenya Bureau of Standards, 2000. *Kenya Standard Code of Hygienic Practice for Production, Handling and Distribution of Milk and Milk Products*. KS. 67. 020.

Kaitho R.J., Biwott J., and Tanner J.C., Gachuiri C.K., and Wahome R.G. 2000. *Reallocation of fixed amount of Concentrate for Smallholder Dairy Farms in Central Highlands of Kenya.* Smallholder Dairy (Research and Development) Project Report. Nairobi, Kenya.

Kenya Government. 1965. The Dairy Commission of Inquiry (Kibaki) Report. Ministry of Agriculture. (DAIRY/INQ/A/64).

Kiptarus J. 2002. *Milk marketing – dairy imports/exports.* Paper presented at a Kenya Dairy Board-Milk Processors workshop at Fairview Hotel. 22nd October 2002.

Leaver J.D., Santos F.J. and Anderson S. 1998. Meeting consumer demands for milk and identifying research priorities. In: Gill M., Smith T., Pollott G.E., Owen E. and Lawrence T.L.J. (eds), *Proceedings of a symposium organised by the British Society of Animal Science held at Nairobi, Kenya, 27–30 January 1998.* BSAS Occasional Publication 21. BSAS (British Society for Animal Science), Edinburgh, UK. pp. 43–51.

Lekasi J.K., Tanner J.C., Kimani S.K. and Harris P.J.C. 1998. *Manure management in the Kenya highlands: Practices and potential.* The Henry Doubleday Research Association, Brainsdale, Victoria, Australia. 35 pp.

Makhapila J. 2003. A Historical Perspective of the Kenya Dairy Industry. Paper presented at a KDB senior management seminar. 15th April 2003

Mbugua P.N. 1999. *Production of concentrates and their use in smallholder dairy sector in Kenya.* Smallholder Dairy (Research and Development) Project Report. Nairobi, Kenya.

Mburu B.N. 2002. *A Study on Dairy Micro and Small Enterprises with Potential for growth in Nairobi, Nakuru, Eldoret, Kisumu and Meru Urban Areas.* A TechnoServe-Kenya report.

MoALD (Ministry of Agriculture and Livestock Development), 2001. *Animal Production Division Annual Report.*

MoALD&M (Ministry of Agriculture, Livestock Development and Marketing). 1993. *Kenya Dairy Development Policy.*

MoLFD (Ministry of Livestock and Fisheries Development) 2003. *Review of the national livestock development policy draft.* July 2003.

MoARD (Ministry of Agriculture and Rural Development). 1995. *Agricultural sector review.* ASIP Secretariat, Kilimo House, Nairobi, Kenya.

MoARD (Ministry of Agriculture and Rural Development). Kenya Dairy Development Policy proposal 2000. Unpublished.

MoLFD/KARI/ILRI Smallholder Dairy Project (SDP) Policy Brief No 4.

MoALD&M (Ministry of Agriculture, Livestock Development and Marketing), 1998. *Assessment of information needs and options for information Management study report.* ASIP Secretariat, Kilimo House, Nairobi, Kenya

MoLD (Ministry of Livestock Development). 1991. *Kenya Dairy Master Plan.* Report prepared for the Ministry by the Danish International Development Agency, August 1991. MoLD, Nairobi, Kenya.

Mullins G., Wahome L., Tsangari P. and Maarse L. 1996. *Impact of intensive dairy production on smallholder farm women in Coastal Kenya.* *Human Ecology* 24:231–253.

Muriuki H.G. 1991. *Liquid milk supply and demand in the formal (KCC) market in Kenya: A government price fixed market.* MSc thesis, University of Illinois at Urbana-Champaign, USA.

Muriuki H.G., Thorpe W. 2002. *Smallholder dairy production and marketing in eastern and southern Africa: Regional synthesis.* ILRI (International Livestock Research Institute). 2002. *Proceedings of a South–South workshop held at NDDB, Anand, India, 13–16 March 2001.* NDDB (National Dairy Development Board), Anand India, and ILRI (International Livestock Research Institute), (multi-document CD-Rom) Nairobi, Kenya.

Muriuki H.G. 2003. *The Smallholder dairy sub-sector in Kenya.* A national sub-sector assessment for FAO Action Programme for the Prevention of Food Losses.

Ngigi M.W. 2002. *An evaluation of the impacts of Transaction Cost and Market Participation of Smallholder Dairy Farmers in Central Kenya.* PhD thesis, University of Nairobi, Kenya.

Ngurare V.K. 2003. *Introduction to a structured Kenya Dairy Board.* A paper presented to a KDB Strategic planning workshop. Unpublished.

Odima, P.A., McDermott, J.J. and Mutiga, E.R. 1994. *Reproductive performance of dairy cows on smallholder dairy farms in Kiambu District, Kenya: Design, Methodology and Development constraints.* In: *Proceedings of the 7th ISVEE Symposium.* 15th - 19th August, 1994. Nairobi, Kenya. *The Kenya Veterinarian* 18(2): 366.

Omiti J. 2002. *Impacts of liberalization in Kenya's dairy sector.* ILRI (International Livestock Research Institute) 2002. *Smallholder dairy production and marketing—Opportunities and constraints. Proceedings of a South–South workshop held at NDDB, Anand, India, 13–16 March 2001.* NDDB (National Dairy Development Board), Anand India, and ILRI (International Livestock Research Institute), (multi-document CD-Rom) Nairobi, Kenya.

Omiti J., Muma M. 2000. *Policy and institutional strategies to commercialise the dairy sector in Kenya.* IPAR Occasional Paper series. Institute of Policy Analysis and Research, Nairobi, Kenya. Occasional Paper No. 006/2000.

Omoro A., Arimi S., Kangethe E., McDermott J., Staal S., Ouma E., Odhiambo J., Mwangi A., Aboge G., Koroti E., and Koech R. 2001 a. *Assessing and Managing*

Milk-borne Health Risks for the Benefit of Consumers in Kenya. MoA/KARI/ILRI/UoN/KEMRI Collaborative Research Report, Smallholder Dairy (Research & Development) Project, Nairobi, Kenya.

Omore A., Cheng'ole Mulindo J., Fakhrul Islam S.M., Nurah G., Khan M. I., Staal S.J. and Dugdill B.T. 2001 b. *Employment Generation Through Small-Scale Dairy Marketing and Processing: Experiences from Kenya, Bangladesh and Ghana.* A joint study by the ILRI Market-oriented Smallholder Dairy Project and the FAO Animal Production and Health Division (draft).

Omore, A.O., McDermott, J.J., S. Arimi, S.M. and Kang'ethe, E.K. 2000. *Analysis of Public Health risks from Consumption of Informally Marketed milk in Kenya.* Paper presented at the Faculty of Veterinary Medicine Biennial Scientific Conference. Nairobi, Kenya.

Omore A., Muriuki H., Kenyanjui M., Owango M. and Staal S.J. 1999. *The Kenya Dairy Sub-sector; A rapid appraisal.* Smallholder Dairy (Research and Development) Project Report. Nairobi, Kenya. 51 pp.

Ouma E., Staal S.J., Omore A., Wanjohi P., Njoroge L. and Njubi D. 2000. *Consumption patterns of dairy products in Kenya.* MoA/KARI/ILRI Collaborative Research Report, Smallholder Dairy (Research & Development) Project, Nairobi, Kenya.

Owango M., Lukuyu B., Staal S.J., Kenyanjui M., Njubi D. and Thorpe W. 1998. *Dairy co-operatives and policy reform in Kenya: Effects of livestock service and milk market liberalisation.* *Food Policy Journal* 23(2):173–185.

Peeler E.J. and Omore A. 1997. *Manual of livestock production systems in Kenya.* 2nd edition. KARI (Kenya Agricultural Research Institute), Nairobi, Kenya. 138 pp.

Romney D., Kaitho R., Biwott J., Wambugu M., Chege L., Omore O., Staal S.,m Wanjohi P. and Thorpe W. 2000. *Technology development and field-testing: Access to credit to allow smallholder dairy farmers in central Kenya to reallocate concentrates during lactation.* Proceedings of the 3rd All Africa Conference on Animal Agriculture and 11th Conference of the Egyptian Society of Animal Production, Alexandria, Egypt. 6-9 November 2000: Vol. II, 133-139.

SDP (Smallholder Dairy Project), 2003. *Policy brief on dairy products preferences and consumption patterns in Kenya (Draft).*

Sharma V.P. 2002. *Implications of international trade regulations (World Trade Organization agreement on agriculture and Codex Standards) for smallholder dairy development.* . ILRI (International Livestock Research Institute). 2002. *Proceedings of a South-South workshop held at NDDDB, Anand, India, 13–16 March 2001.* NDDDB (National Dairy Development Board), Anand India, and ILRI (International Livestock Research Institute), (multi-document CD-Rom) Nairobi, Kenya.

Staal S.J, Owango M., Muriuki H., Kenyanjui M., Lukuyu B., Njoroge L., Njubi D., Baltenweck I., Musembi F., Bwana O., Muriuki K., Gichungu G., Omore A., and Thorpe W. 2001. *Dairy System Characterisation of the Greater Nairobi Milk*

Shed. Smallholder Dairy (R&D) Project. KARI/MoA/ILRI Collaborative Dairy Research Programme, ILRI, Nairobi, Kenya.

Staal,S., Waithaka, M., Njoroge, L., Mwangi, D.M., Njubi, D., Wokabi, A. 2003. *Costs of milk production in Kenya (draft).* MoA/ KARI/ILRI Collaborative Research Report. Smallholder Dairy (Research and Development) Project, Nairobi, Kenya.

Staal S. and Muriuki H. 2000. *Policies and the informal sector in the dairy industry.* Paper orally presented at a Land O'Lake Round Table Meeting in Malawi. (unpublished).

Staal S., Delgado C. and Nicholson C. 1997. *Smallholder dairying under transactions costs in East Africa. World Development* 25:779–794.

Staal S., Chege L., Kenyanjui M., Kimari A., Lukuyu B., Njubi D., Owango M., Tanner J., Thorpe W. and Wambugu M. 1998a. *Characterisation of dairy systems supplying the Nairobi milk market: A pilot survey in Kiambu District for the identification of target groups of producers.* Smallholder Dairy (R&D) Project. KARI/MoA/ILRI Collaborative Dairy Research Programme, ILRI, Nairobi, Kenya. pp. 85.

Staal S., Owango M., Muriuki H., Lukuyu B., Musembi F., Bwana O., Muriuki K., Gichungu G., Omore A., Kenyanjui M., Njubi D., Baltenweck I. and Thorpe W. 1998b. [*Dairy systems characterisation of the Nairobi milk shed: Application of spatial and household analysis.*](#) MoA/ KARI/ILRI Collaborative Research Report. Smallholder Dairy (Research and Development) Project, Nairobi, Kenya.

Staal S., Ouma E. and Jabbar M. 2000a. *Household Demand for Dairy and Food Products in Urban and Rural Kenya.* Smallholder Dairy (R&D) Project.

Staal S.J., Delgado C., Balteweck I., Kruska R. 2000b. *Spatial Aspects of Producer Milk Price Formation in Kenya: A joint household and GIS approach.* Paper (poster) submitted to IAAE meetings, Berlin. August 2000.

Staal S.J., Kruska R., Balteweck I., Kenyanjui M., Wokabi A., Njubi D., Thornton P. and Thorpe W. 1999. *Combined household and GIS analysis of smallholder production systems: An application to intensifying smallholder dairy systems in Central Kenya.* Paper presented at the third international symposium on Systems Approaches for Agricultural Development (SAAD-III) held at Lima, Peru, 8–10 November 1999, National Agrarian University, La Molina, Lima, Peru.

Thorpe W., Muriuki H.G., Omore A., Owango M.O. and Staal S. 2000 (a). *Dairy development in Kenya: The past, the present and the future.* Paper presented at the annual symposium of the Animal Production Society of Kenya, Nairobi, Kenya, 22–23 March 2000.

Thorpe W., Muriuki H.G., Omore A., Owango M.O. and Staal S. 2000 (b). *Development of smallholder dairying in Eastern Africa.* Paper prepared for the UZ/RVAU/DIAS/DANIDA-ENRECA project review workshop, 10-13 January 2000, Bronte Hotel, Harare, Zimbabwe.

Waithaka M., Omore A. Muriuki H., Hooton N., Staal S.J., Odhiambo P. 2003.
The Policy Environment in the Kenya Dairy Sub-Sector: A Review (draft).
MoA/KARI/ILRI Collaborative Research Report. Smallholder Dairy (Research and Development) Project, Nairobi, Kenya.

ANNEX 1

Production of Fresh Cow Milk in COMESA and EAC

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Period Total | % of total |
|------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------------|---------------|
| Angola | 175,000 | 190,000 | 191,000 | 195,000 | 195,000 | 195,000 | 195,000 | 1,336,000 | 1.72 |
| Burundi | 23,800 | 26,600 | 22,950 | 18,550 | 19,250 | 19,250 | 19,300 | 149,700 | 0.19 |
| Comoros | 4,400 | 4,450 | 4,500 | 4,550 | 4,550 | 4,550 | 4,550 | 31,550 | 0.04 |
| Congo, Dem Republic of | 5,800 | 5,300 | 5,200 | 5,200 | 5,200 | 5,000 | 5,000 | 36,700 | 0.05 |
| Djibouti | 7,350 | 7,700 | 7,700 | 8,050 | 8,050 | 8,050 | 8,050 | 54,950 | 0.07 |
| Egypt | 1,324,376 | 1,351,880 | 1,596,880 | 1,638,400 | 1,870,000 | 1,900,000 | 1,900,000 | 11,581,536 | 14.94 |
| Eritrea | 43,000 | 48,000 | 49,000 | 50,000 | 52,000 | 39,200 | 39,200 | 320,400 | 0.41 |
| Ethiopia | 937,970 | 949,230 | 960,620 | 1,295,000 | 1,450,000 | 1,450,000 | 1,450,000 | 8,492,820 | 10.96 |
| Kenya | 2,057,000 | 2,008,000 | 2,342,000 | 2,672,000 | 2,441,500 | 2,689,000 | 2,700,000 | 16,909,500 | 21.81 |
| Madagascar | 520,000 | 525,000 | 530,000 | 535,000 | 535,000 | 535,000 | 535,000 | 3,715,000 | 4.79 |
| Malawi | 33,000 | 33,000 | 34,000 | 35,000 | 35,000 | 35,000 | 35,000 | 240,000 | 0.31 |
| Mauritius | 6,000 | 5,500 | 5,000 | 4,700 | 4,000 | 4,000 | 4,000 | 33,200 | 0.04 |
| Namibia | 74,000 | 79,000 | 82,500 | 88,500 | 92,000 | 105,000 | 105,000 | 626,000 | 0.81 |
| Rwanda | 34230 | 35581 | 36059 | 57803 | 63484 | 97981 | 112463 | 437601 | 0.56 |
| Seychelles | 280 | 310 | 310 | 310 | 310 | 310 | 310 | 2,140 | 0.00 |
| Sudan | 2,928,000 | 3,000,000 | 3,072,000 | 3,120,000 | 3,168,000 | 3,216,000 | 3,264,000 | 21,768,000 | 28.08 |
| Swaziland | 37,100 | 37,600 | 34,000 | 37,500 | 37,500 | 37,500 | 37,500 | 258,700 | 0.33 |
| Tanzania, United Rep of | 600,000 | 670,000 | 687,000 | 710,000 | 814,000 | 835,000 | 835,000 | 5,151,000 | 6.64 |
| Uganda | 468,650 | 493,500 | 509,250 | 511,000 | 511,000 | 700,000 | 700,000 | 3,893,400 | 5.02 |
| Zambia | 56,700 | 58,800 | 61,500 | 64,200 | 64,200 | 64,200 | 64,200 | 433,800 | 0.56 |

| | | | | | | | | | |
|--------------------|-----------|-----------|------------|------------|------------|------------|------------|------------|--------|
| Zimbabwe | 280,000 | 290,000 | 300,000 | 310,000 | 310,000 | 280,000 | 280,000 | 2,050,000 | 2.64 |
| Grand Total | 9,616,656 | 9,819,451 | 10,531,469 | 11,360,763 | 11,680,044 | 12,220,041 | 12,293,573 | 77,521,997 | 100.00 |

Source: FAOSTAT 2004

Annex 2

Exports of Dairy Products by COMESA and EAC Countries, 1997-2003

| Exporter | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total | % |
|-----------------|-----------|-----------|-----------|-----------|---------|-----------|-----------|------------|----|
| Egypt | | | | | | | | | - |
| Extra-Exports | 2,352,742 | 1,052,296 | 4,326,015 | 1,157,362 | 685,652 | 1,408,588 | 220,492 | 10,982,655 | |
| Intra-Exports | 52,107 | 14,283 | 1,376 | 12,151 | 939 | - | 130,305 | 80,856 | |
| Sub-total | 2,404,849 | 1,066,579 | 4,327,391 | 1,169,513 | 686,591 | 1,408,588 | 350,797 | 11,063,511 | 22 |
| Zimbabwe | | | | | | | | | |
| Extra-Exports | 1,546,075 | 768,400 | 1,065,578 | 1,690,403 | 66,743 | 325,113 | 2,689,789 | 5,462,312 | |
| Intra-Exports | 6,317,363 | 3,023,570 | 2,003,351 | 2,583,298 | 191,530 | 954,001 | 957,324 | 15,073,113 | |
| Sub-total | 7,863,438 | 3,791,970 | 3,068,929 | 4,273,701 | 258,273 | 1,279,114 | 3,647,113 | 20,535,425 | 40 |
| Kenya | | | | | | | | | |
| Extra-Exports | 776,268 | 88,802 | 234,231 | 187,768 | 275,294 | 333,764 | 220,492 | 1,896,127 | |
| Intra-Exports | 137,269 | 73,454 | 153,486 | 211,766 | 147,812 | 149,522 | 363,201 | 873,309 | |
| Sub-total | 913,537 | 162,256 | 387,717 | 399,534 | 423,106 | 483,286 | 583,693 | 2,769,436 | 5 |

Annex 2 (cont'd)
Exports of Dairy Products by COMESA and EAC Countries, 1997-2003

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total | % |
|------------------|---------|---------|---------|---------|-----------|-----------|-----------|-----------|---|
| Zambia | | | | | | | | | |
| Extra-Exports | 35 | 7,267 | 19,747 | 11,091 | 1,739,385 | 5,222 | 158,961 | 1,782,747 | |
| Intra-Exports | - | 35,325 | 7,987 | 85,347 | 106,299 | 58,992 | 502,729 | 293,950 | |
| Sub-total | 35 | 42,592 | 27,734 | 96,438 | 1,845,684 | 64,214 | 661,690 | 2,076,697 | 4 |
| Namibia | | | | | | | | | |
| Extra-Exports | 216,214 | 510,645 | 119,187 | 36,984 | 101,724 | 66,824 | 69,861 | 1,051,578 | |
| Intra-Exports | 100,525 | 102,862 | 141,563 | 140,922 | 354,907 | 1,131,938 | 1,352,998 | 1,972,717 | |
| Sub-total | 316,739 | 613,507 | 260,750 | 177,906 | 456,631 | 1,198,762 | 1,422,859 | 3,024,295 | 6 |
| Congo DR | | | | | | | | | |
| Extra-Exports | - | - | - | - | - | 903,914 | - | 903,914 | |
| Intra-Exports | - | - | 284 | - | - | 127,950 | - | 128,234 | |
| Sub-total | - | - | 284 | - | - | 1,031,864 | - | 1,032,148 | 2 |
| Mauritius | | | | | | | | | |

| | | | | | | | | | |
|-------------------|---------|---------|---------|--------|---------|-----------|-----------|-----------|---|
| Extra-Exports | 140,095 | 7,531 | 72,357 | 10,916 | 9,330 | 303,437 | 57,508 | 543,666 | |
| Intra-Exports | 7,192 | 1,050 | 3,939 | 22,591 | 121,861 | 797,130 | 219,846 | 953,763 | |
| Sub-total | 147,287 | 8,581 | 76,296 | 33,507 | 131,191 | 1,100,567 | 277,354 | 1,497,429 | 3 |
| Uganda | | | | | | | | | |
| Extra-Exports | 3,862 | 176,076 | 167,184 | 60,583 | 4,782 | 4,541 | 93,296 | 417,028 | |
| Intra-Exports | 255,536 | 41,905 | 16,082 | 4,006 | 15,032 | 29,678 | 414,196 | 362,239 | |
| Sub-total | 259,398 | 217,981 | 183,266 | 64,589 | 19,814 | 34,219 | 507,492 | 779,267 | 2 |
| Madagascar | | | | | | | | | |
| Extra-Exports | 106,089 | 92 | 17,410 | 18,239 | 30,275 | 16,473 | - | 188,578 | |
| Intra-Exports | 85,346 | 52 | 420 | 3,524 | 30,259 | 25,820 | 2,786,587 | 145,421 | |
| Sub-total | 191,435 | 144 | 17,830 | 21,763 | 60,534 | 42,293 | 2,786,587 | 333,999 | 1 |

Annex 2 (cont'd)
Exports of Dairy Products by COMESA and EAC Countries, 1997-2003

| | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | Total | % |
|-------------------|-------|-------|-------|--------|--------|--------|--------|---------|---|
| Sudan | | | | | | | | | |
| Extra-Exports | 1,569 | 885 | 3,198 | 33,016 | 25,344 | 77,720 | 9,257 | 141,732 | |
| Intra-Exports | - | - | 87 | - | - | - | - | 87 | |
| Sub-total | 1,569 | 885 | 3,285 | 33,016 | 25,344 | 77,720 | 9,257 | 141,819 | 0 |
| Ethiopia | | | | | | | | | |
| Extra-Exports | | 4,138 | | 5,618 | 3,177 | | 11,468 | 12,933 | |
| Intra-Exports | - | - | - | 115 | 142 | - | - | 257 | |
| Sub-total | - | 4,138 | - | 5,733 | 3,319 | - | 11,468 | 13,190 | 0 |
| Malawi | | | | | | | | | |
| Extra-Exports | 72 | - | - | 943 | - | 361 | 57 | 1,376 | |
| Intra-Exports | - | - | - | - | 118 | 2,075 | 988 | 2,193 | |
| Sub-total | 72 | - | - | 943 | 118 | 2,436 | 1,045 | 3,569 | 0 |
| Seychelles | | | | | | | | | |
| Extra-Exports | - | - | - | 34 | 28 | - | 6,772 | 6,834 | - |
| Intra-Exports | - | - | - | - | - | - | - | - | - |
| Sub-total | - | - | - | 34 | 28 | - | 6,772 | 6,834 | 0 |

| Tanzania | | | | | | | | | |
|-----------------|-----------|---------------|----------|--------------|---------------|--------------|---|----------------|---|
| Extra-Exports | 39 | 25,046 | 6 | 7,492 | 13,479 | 3,005 | - | 580,478 | |
| Intra-Exports | - | 59 | 41,763 | 115,193 | 17,687 | 44,729 | - | 219,431 | |
| Sub-total | 39 | 25,105 | 41,769 | 122,685 | 31,166 | 47,734 | - | 268,498 | 1 |

Annex 3

Product Quality Standards

3.1 Unprocessed Whole Milk

Table 3.1: Quality Standards for Unprocessed Whole Milk

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|---------------------------|---------------------|---------------------|-----------------------------|---------------------------|--------|--------------------|
| Chemical | | | | | | | |
| Milk fat | Not less than 3.3% | Not less than 3.3% | Not less than 3.5% | Not less than 3.5% | Not less than 3.5% | | Not less than 3.0% |
| Milk solids non-fat | Not less than 8.50% | Not less than 8.50% | Not less than 8.50% | | Not less than 8.2% | | Not less than 8.5% |
| Total Solids | | | | Not less than 12.8% | | | |
| Added water, preservatives, or other added substances | None | None | None | | None | | |
| Natural Constituents | 100% | 100% | 100% | | | | |
| Protein | | | | Not less than 3.20 | | | |
| Natural constituents | 100% | | | | | | |
| Density/Specific Gravity | 1.026-1.032g/ml (at 20°C) | 1.026-1.032g/ml | 1.026-1.032g/ml | 1.026-1.032g/ml (at 15.6°C) | 1.028-1.030g/ml | | |
| Freezing point depression of milk | 0.525-0.545 | 0.525-0.545 | 0.525-0.545 | 0.525-0.545 | | | |
| Titrateable acidity | | | | | Not less than 0.18 m/v as | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|--|--|--|---|--|--------|------------------|
| | | | | | lactic acid | | |
| Rapid Platform Tests on quality (applied on unprocessed milk) | <ul style="list-style-type: none"> • Organoleptic test at room temperature • Determination of insoluble matter • Determination of Ph • Clot-on-boiling (c.o.b) test • Alcohol test • Alizarin-alcohol test • Ten-minute resazurin test • Half-hour methylene blue reduction (m.b.r) test | <ul style="list-style-type: none"> • Organoleptic test at room temperature • Determination of insoluble matter • Determination of Ph • Clot-on-boiling (c.o.b) test • Alcohol test • Alizarin-alcohol test • Ten-minute resazurin test • Half-hour methylene blue reduction (m.b.r) test | <ul style="list-style-type: none"> • Organoleptic test at room temperature • Determination of insoluble matter • Determination of Ph • Clot-on-boiling (c.o.b) test • Alcohol test • Alizarin-alcohol test • Ten-minute resazurin test • Half-hour methylene blue reduction (m.b.r) test | | | | |
| Bacteriological grades | | | | | | | |
| a) Total plate count | | | | | Not less than 10^5 | | 10^5 per g |
| Plate incubation period | 48 hours at 32°C | 48 hours at 32°C | 72 hours at 30°C | | | | 48 hours at 30°C |
| Graded as follows: | | | | | | | |
| Quality a) Very good b) Good c) Bad d) Very bad | Counts ('000 per mL) 0 – 1,000 1,000– 2,000 2,000 – 5,000 5,000 and over | Counts ('000 per mL) 0 – 1,000 1,000– 2,000 2,000 – 5,000 5,000 and over | Counts ('000 per mL) <200 200– 1,000 1,000 – 5,000 5,000 and over | Counts ('000 per mL) 0 – 1,000 1,000– 2,000 2,000 – 5,000 5,000 and over | Satisfactory if methylene is not decolourised after 30 mins. At +-1 degree Celsius | | |
| Being revised to: | | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|--|--|--|--|--------|--------|---|
| Quality e) Very good f) Good g) Bad h) Very bad | Counts (*000 per mL) 0 – 500 500 – 1,000 1,000 – 2,000 2,000 and over | | | | | | |
| b) Coliform plate count | | | | | | | |
| Plate incubation period | 24hours at 37°C | | 24hours at 37°C | | | | |
| Quality a) Very good b) Good c) Bad d) Very bad | Counts (per mL) 0 -1,000 1,000 – 50,000 50,000 – 500,000 500,000 and over | Counts (per mL) 0 -1,000 1,000 – 50,000 50,000 – 500,000 500,000 and over | Satisfactory if coliform absent in 1:100 dilution | Counts (per mL) 0 -1,000 1,000 – 50,000 50,000 – 500,000 500,000 and over | | | |
| 2. Pesticides and antibiotics | | | | | | | |
| i) Pesticide residue in milk | | | | List is long but these are examples | | | |
| Pesticide a) Aldrin and Dieldrin (total) b) Heptachlor and Heptachlorepoide (total) c) DDT and its analogues d) Lindane e) SHC + HCH | Max. limit (mg/kg) on whole milk basis 0.006 0.006 0.05 0.01 0.01 | Max. limit (mg/kg) on whole milk basis 0.006 0.006 0.05 0.01 0.01 | Max. limit (mg/kg) on whole milk basis 0.006 0.006 0.05 0.01 0.01 | Max. limit (mg/kg) on whole milk basis 0.006 0.006 0.05 0.01 0.01 | | | Max. limit (mg/kg) on whole milk basis – Less than 0.01 |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|---|---|---|-----------------|--|---------------|------------------|
| f) Endrin | 0.01 | 0.01 | 0.01 | | | | |
| Mastitis | | | | | Not more than 200000 somatic cells with microscopic exam. Or 500000 with California Test | | |
| ii) Antibiotics | | | | | | | |
| Antibiotics in milk | NIL | NIL | NIL | NIL | Less than 0.05 i.u./ml using the TTC test | | NIL |
| iii) Aflatoxin, max µg/l | | | | 0.05 | | | |
| 3. Milk packaging | | | | | | | |
| Packaging material | Sanitized containers made of approved materials | Sanitized containers made of approved materials | Sanitized containers made of approved materials | | | | |
| | | | | | | | |

3.2 Pasteurised Liquid Milk

Table 3.2: Quality Standards for Pasteurised Liquid Milk

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|--|--|--|---|--|---|--|
| PASTEURIZATION PROCESS | | | | | | | |
| Holder method | The temperature of milk is raised to 65°C and retained at this temperature for 30 minutes and rapidly cooled to 10°C or less | | The temperature of milk is raised to 63°C and retained at this temperature for 30 minutes | | | Heated to a temperature of not less than 63°C and retained at this temperature for 30 minutes and rapidly cooled to 4°C or less | The temperature of milk is raised to 63-65°C and retained at this temperature for 30 minutes and rapidly cooled to 4°C or less |
| High Temperature short time method (HTST) | The temperature of milk is raised to not less than 72° C and retained at this temperature for 15 seconds and rapidly cooled to 10° C or less | | The temperature of milk is raised to not less than 71.5° C and retained at this temperature for 15 seconds | | | Heated to a temperature of not less than 71.5°C and retained at this temperature for 15 seconds and rapidly cooled to 4°C or less | |
| COMPOSITION | | | | | | | |
| Whole milk (min) - Milk Fat Content - Milk Solids Non-Fat | Above 3.25% 8.5% | Whole milk (min) - Above 3.2% - 8.5% | Whole milk (min) - Above 2% - ≥ 8.5% | Whole milk (min) - Above 3.25% - 8.5% | Whole milk (min) - Above 3.0% - ≥ 8.0% | Whole milk (min) - Above 3.2% - ≥ 8.30% | |
| Fat Reduced Milk - Milk Fat Content - Milk Solids Non-Fat | 2.25-3.25% 8.1% | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|---|--------|---|--------------------|---|-------------------------------------|-----------|
| Low Fat Milk - Milk Fat Content - Milk Solids Non-Fat | 1.25-2.25% 7.9% | | | | | | |
| Fat Free Milk (max) - Milk Fat Content - Milk Solids Non-Fat | 0.5 7.9% | | | | | | |
| Total solids | | 11.70% | ≥ 10.50% | ≥ 12.80% | | 12% | |
| Added water, preservatives, or other added substances | None | | | | None | None | |
| Natural Constituents | | | 100% | | | | |
| Protein | | | | Not less than 3.20 | | | |
| Freezing point depression of milk | 0.545°C on average but not less than negative (-) 0.525°C | | | | Average negative (-) 0.54°C but no more than negative (-) 0.525°C | Approximately negative (-) 0.530 °C | |
| Density | 1.026-1.032 g/ml at 20° C | | 1.026 to 1.032 g/ml at room temperature | | | | |
| Condition | | | Homogenized before pasteurisation | | | | |
| Veterinary drugs or other foreign substances | Nil | | | | | | |
| Pesticide Residues | Nil | | | | | | |
| Phosphatase Test | | | Negative or trace | Negative | < 10 mg | <10 micrograms for 1 ml of milk | |
| Methylene Blue | | | | | | Not less than 2 | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|------------------------------------|--------|--------|----------|----------|------------------------|---|-----------|
| Keeping Quality Test | | | | | | hours | |
| PH | | | 6.6-6.9 | | | | |
| MICROBIAL LIMITS | | | | | | | |
| Total plate count, per ml | 30,000 | | | | Less than 30000 per ml | <50,000 per ml | |
| Corliforms, per ml | 10 | | | | < 10 per ml | 5 per ml | |
| Salmonella, per 30ml | Nil | | | Nil | | | |
| E.coli per ml | Nil | | | | | | |
| Listeria monocytogenes, per 30ml | Nil | | | | | | |
| Staphylococcus aureus | Nil | | | | | | |
| Mycobacterium tuberculosis, per ml | Nil | | | | | | |
| Faecal Coliform | | | | | | Nil per ml | |
| Antibiotics | | | | NIL | | NIL | |
| Pesticide residues | | | | | | Max. limit (mg/kg) on whole milk basis Aldrin/ Dieldrin– 0.01ppm Anilzaline-0.01 Atrazine- 0.01ppm Amitraz-0.01ppm Ametryn- 0.05ppm Azinphos/ Methyl-0.05ppm Bromophos-0.05 | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|------------------------|---|--------|--|------------------|--------|--|--|
| | | | | | | | |
| PACKAGING | In commercial disinfected sealed containers made of glass, approved metals, or any other suitable material. | | Sanitized containers made of approved material | | | Sanitized containers made of approved material | Aseptically packed in sterilized container |
| LABELLING | | | | | | | |
| Name of Food | Pasteurized liquid milk | | | | | | |
| Name of Manufacturer | Name, physical location and address of the manufacturer or packer shall be clearly marked | | | | | | |
| Butter fat Content | Must be declared | | | Must be declared | | | |
| Other Requirements | Expiry date, net contents, country of origin, conditions of storage and batch number | | | | | | |
| | | | | | | | |

3.3 Ultra-Heat Treatment (UHT) Milk

Table 3.3: Quality Standards For Ultra-Heat Treatment (UHT) Milk

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|--|--------|----------|----------|--------|--------|---|
| PROCESS REQUIREMENTS | | | | | | | |
| Process | <ul style="list-style-type: none"> - Milk is subjected to temperatures between 135° C for 2-4 seconds, followed by immediate cooling at room temperature - Direct heat – where steam injection is used for heating, only culinary steam shall be used, and the compositional quality of the milk shall be the same before and after treatment. | | | | | | Milk is subjected to temperatures between 135° C for 2-4 seconds, followed by immediate cooling at room temperature |
| High Temperature short time method (HTST) | The temperature of milk is raised to not less than 72° C and retained at this temperature for 15 seconds and rapidly cooled to 10° C or less | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|-------------------------------|--------|----------------------------------|----------|--------|-------------------------------------|--------------------|
| | | | | | | | |
| | | | | | | | |
| COMPOSITION | | | | | | | |
| Milk fat percentage (m/m) | | | | | | | |
| Whole milk (min) | 3.25 | ≥3.5% | ≥3.0% | | | ≥3.2% | Not less than 3.0% |
| Fat Reduced Milk | 2.25 <3.25 | | | | | | |
| Low Fat Milk | 1.25 <2.25 | | | | | | |
| Fat Free Milk | 0.5 (max) | | | | | | |
| Milk Solids Not Fat | | | | | | ≥8.30% | Not less than 8.5% |
| Natural Constituents | | | | | | 100% | |
| Freezing point depression of milk | | | | | | Approximately negative (–) 0.530 °C | |
| PH variation on 5 days incubation (Max) | 0.3 | | 0.3 (7 days incubation at 55 °C) | | | | |
| Protein | | ≥3.2% | | | | | |
| Carbohydrate | | ≥4.6% | | | | | |
| Calcium | | ≥0.1% | | | | | |
| Vitamin A | | ≥0.15% | | | | | |
| Vitamin B1 | | ≥0.04% | | | | | |
| Method of PH Test | Determination of PH variation | | | | | | |
| Titrateable acidity | 0.02 | | 0.02 (7 days | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|--|--------|----------------------|----------|--------|------------------------|---|
| variation on 5 days incubation, g max., % lactic acid | | | incubation at 55 °C) | | | | |
| Bacterial spores | | | <3 per ml | | | | |
| Method of Acidity Test | Determination of titratable acidity | | | | | | |
| Creaming index | | | <30 | | | | |
| Added water, preservatives, or other added substances | None | | | | | None | |
| Freezing point depression of milk | 0.54°C on average but not less than negative (-) 0.525°C | | | | | | |
| Density | - Density of milk measured at 20° C shall range from 1.026 to 1.032 g/ml | | | | | | |
| Veterinary drugs or other foreign substances | Nil | | | | | Nil | |
| Pesticide Residues | Nil | | | | | As in pasteurised milk | Max. limit (mg/kg) on whole milk basis – Less than 0.01 |
| Added water, preservatives, or other added substances | None | | | | | | |
| Freezing point depression of milk | 0.54°C on average but not | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|---|--------|----------|----------|--------|---|-----------------------|
| | less than negative (-) 0.525°C | | | | | | |
| MINIMUM SHELF LIFE | 30 Days | | | | | | |
| PATHOGENIC MICRO-ORGANISMS | | | | | | | |
| Microbial Limits | Nil | | | | | Nil | 10 ⁵ per g |
| <i>Faecal coliform</i> | | | | | | Nil | |
| PACKAGING | | | | | | | |
| Packaging Material | Sterile, light proof, gas proof, non-toxic, does not impart any flavour to the milk. | | | | | Sterile containers made of approved materials | |
| Packaging | Packaged and sealed aseptically | | | | | Aseptically packed | Aseptically packed |
| LABELLING | | | | | | | |
| Name of Food | UHT liquid milk | | | | | | |
| Name of Manufacturer | Name, physical location and address of the manufacturer or packer shall be clearly marked | | | | | | |
| Type of Milk | Whole or Fat reduced Milk | | | | | | |
| Butter fat Content | Must be declared | | | | | | |
| Other Requirements | Expiry date, net | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|------------------------|---|--------|----------|----------|--------|--------|-----------|
| | contents, country of origin, conditions of storage and batch number | | | | | | |
| | | | | | | | |

3.4 Powder Milk

Table 3.4: Quality Standards for Powder Milk

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|--------|--------|----------|----------------------|----------------|---------|-----------|
| 1. Whole Powder Milk | | | | | | | |
| Milk Fat Content | ≥26% | 26-40% | | 26-42% | 26-42% | 26-40% | ≥26% |
| Water | ≤5% | ≤5% | | ≤5% | ≤5% | ≤5% | ≤5% |
| Natural Constituents | | | | | | | |
| Total Solids | | | | | ≥96% | | |
| Milk Protein in Milk SNF | | | | ≤34% | ≥34% | | |
| Total Ash (on dry matter basis) | | | | | ≤7.3% | | |
| Titrateable acidity (lactic acid) | | | | 18 (m/0.1n NaOH SNF) | ≤1.2% | | |
| Solubility -Roller dried -Spray-dried | | | | ≤15 (m/k) | ≥85% ≥98.5% | | |
| Scorched Particles | | | | Equal and same | Disc B (15mg) | | |
| 2. Partly Skimmed Powder Milk | | | | | | | |
| Milk Fat Content | ≤ 1.5% | | | 1.5-26% | 1.5-26% | 1.5-26% | 1.5-26% |
| Water | ≤ 5% | | | ≤5% | ≤5% | ≤5% | |
| Natural Constituents | | | | | | | |
| Total Solids | | | | | ≥96% | | |
| Milk Protein in Milk SNF | | | | ≤34% | ≥34% | | |
| Total Ash (on dry matter basis) | | | | | ≤8% | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|-------|--------|----------|----------------------|----------------|-----------------|-----------|
| Titratable acidity (lactic acid) | | | | 18 (m/0.1n NaOH SNF) | ≤1.4% | | |
| Solubility -Roller dried -Spray-dried | | | | ≤15 (m/k) | ≥85% ≥98.5% | | |
| Scorched Particles | | | | Equal and same | Disc B (15mg) | | |
| | | | | | | | |
| 3. Skimmed Powder Milk | | | | | | | |
| Milk Fat Content | ≤1.5% | | | ≤1.5% | ≤1.5% | ≤1.5% | ≤1.5% |
| Water | ≤5% | | | ≤5% | ≤5% | ≤5% | |
| Natural Constituents | | | | | | | |
| Total Solids | | | | | ≥95% | | |
| Milk Protein in Milk SNF | | | | ≤34% | ≥34% | | |
| Total Ash (on dry matter basis) | | | | | ≤9.3% | | |
| Titratable acidity (lactic acid) | | | | 18 (m/0.1n NaOH SNF) | ≤1.5% | | |
| Solubility -Roller dried -Spray-dried | | | | ≤15 (m/k) | ≥85% ≥98.5% | | |
| Scorched Particles | | | | Equal and same | Disc B (15mg) | | |
| Clour | | | | White | | | |
| Copper Content | | | | ≤1.5 ppm | | | |
| Iron Content | | | | ≤10 ppm | | | |
| Microbial Requirements | | | | | | | |
| Total count per g | | | | | 50,000 | | |
| Coliforms per g | | | | Nil | 10 | Nil (in 0.01ml) | |
| Staphylococcus aureus per g | | | | Nil | 10 | Nil | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|--------------|---------------|-----------------|-----------------|---------------|---|------------------|
| Salmonella per 25g | | | | Nil | Nil | Nil | |
| Yeast and Moulds Count | | | | | | | |
| Whole milk powder | | | | | 10 | | |
| Partly skimmed milk powder | | | | | 50 | | |
| Aflatoxin (M-g/kg) | | | | ≤0.05 | | | |
| PACKAGING | | | | | | | |
| Packaging Material | | | | | | Sanitized containers made of approved materials | |
| Packaging | | | | | | | |
| | | | | | | | |

3.5 Yoghurt Milk - Plain, Fruit and Flavoured Milk.

Table 3.5: Quality Standards for Yoghurt Milk

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------|--|--|---|------------------|---|--------|---|
| Milk fat | ≥2.25% | ≥3% for plain yoghurt and ≥2% for flavoured yoghurt. | ≥2.5% for butter fat yoghurt and ≤1.25 for low fat yoghurt. | Max 3%, Min 0.5% | ≥2.25% for full cream yoghurt and ≤1.25% for low fat yoghurt. | ≥2% | ≥3% for full cream yoghurt and 0.5-3% for low fat yoghurt. |
| Milk solids, non-fat | ≥8.5% | ≥8.2% for plain yoghurt and ≥8.5% for flavoured yoghurt. | ≥8.5% | ≥8.2% | Not less than 8.5% for both full cream and low fat yoghurt | ≥8.5% | |
| Essential Raw Materials | Pasteurized milk, evaporated or condensed milk, pasteurised partly skimmed milk, evaporated or partly skimmed milk, pasteurised skimmed milk, evaporated or condensed skimmed milk, pasteurised cream, a mixture of two or more products | | | | Whole milk, low fat milk, skimmed milk (all of these might be concentrated or cream). A mixture of two or more is possible as well. | | Whole milk, low fat milk, skimmed milk (all of these might be concentrated or cream). A mixture of two or more is possible as well. |
| Essential Ingredients | Cultures of lactobacillus bulgaricus and Streptococcus thermophilus | | Cultures of lactobacillus bulgaricus and Streptococcus thermophilus | | Cultures of Lactobacillus bulgarius and Streptococcus thermophilus | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|---|---------------|---|-----------------|--|---------------|--|
| Essential Ingredients for Fruit Flavoured and Flavoured Yoghurt | Fruits (fresh, canned, quick frozen, powdered, fruit puree, fruit pulp, jam, fruit syrup, fruit juice). Other foods (sweet products, chocolate, cocoa, nuts, coffee, spices, other harmless natural flavouring foods). | | | | | | Fruits (fresh, canned, quick frozen, powdered, fruit puree, fruit pulp, jam, fruit syrup, fruit juice). Other foods (sweet products, chocolate, cocoa, nuts, coffee, spices, other harmless natural flavouring foods). |
| Optional Additions | Milk products pasteurized in the production, Cultures of suitable lactic acid producing bacterial, Sugars | | For flavoured yoghurts the maximum amount of additions in the final product shall be 30% or less (yoghurt shall be 70% or more) | | Milk powder, skimmed milk powder, butter milk Approved sweeteners Approved stabilizers, emulsifiers and thickeners For flavoured yoghurts the maximum amount of additions in the final product shall be 30% | | Approved sweeteners Approved stabilizers, emulsifiers and thickeners For flavoured yoghurts the minimum amount fruit or fruit juice in the final product shall be 5%. Others are sugar, gelatin ($\leq 1\%$ of yoghurt), permitted colouring agents and preservatives |
| Microbial | | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---------------------------------|-------------------------------------|--------|-----------|----------|--------|-----------|-----------------|
| Requirements | | | | | | | |
| Total viable count (30oC/48hrs) | | | | | | | 10 ⁵ |
| Coliforms per g | | | | | | | 10 |
| Staphylococcus aureus per g | | | | | | | 100 |
| Salmonella per 25g | | | | | | Absent | Absent |
| Listeria per g | | | | | | Absent | Absent |
| E. coli per g | | | | | | Absent | 1 |
| Faecal coliform in 0.01ml | | | | | | Nil | |
| PESTICIDE RESIDUES | | | | | | | |
| Aldrin and diedrin | 0.006 (milks) | | | | | | |
| Carbaryl | 0.1 (milks and milk products) | | | | | | |
| Carbophenothion | 0.004 (milks) | | | | | | |
| Chlordane | 0.002 (milks) | | | | | | |
| Chlorfenvinphos | 0.008 (milk of cattle, goat, sheep) | | | | | | |
| Chlormequat | 0.1 (milk of cattle, goat, sheep) | | | | | | |
| Chlorobenzite | 0.05 (milk of cattle, goat, sheep) | | | | | | |
| Chlorpyrifos | 0.01 (milks) | | | | | | |
| 2-4-D | 0.05 (milk of cattle, goat, sheep) | | | | | | |
| PACKAGING | | | | | | | |
| Packaging | Suitable non- | | Sanitized | | | Sanitized | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|---|---------------|--------------------------------------|-----------------|---------------|--------------------------------------|------------------|
| Material | toxic material which is inert to yoghurt | | containers made of approved material | | | containers made of approved material | |
| Packaging | Packaged and sealed aseptically | | | | | | |
| | | | | | | | |
| LABELLING | | | | | | | |
| Name of Food | Yoghurt | | | | | | |
| Name of Manufacturer | Name, physical location and address of the manufacturer or packer shall be clearly marked | | | | | | |
| Type of Milk | Fruit / Flavored | | | | | | |
| Butter fat Content | Must be declared | | | | | | |
| Other Requirements | Expiry date, net contents, country of origin, conditions of storage and batch number | | | | | | |
| SAMPLING | Same as liquid milk before | | | | | | |
| | | | | | | | |
| | | | | | | | |

3.6 Butter

Table 3.6: Quality Standards for Butter

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--------------------------------------|--|---------------------------------|----------|-------------------------------|--------|--------|-----------|
| RAW MATERIALS | Milk and products obtained from milk | | | | | | |
| PERMITTED INGREDIENTS | - Sodium chloride (Edible salt) - Starter cultures of harmless lactic acid and/or flavour producing bacteria, potable water | | | | | | |
| COMPOSITION | | | | | | | |
| Minimum milk fat content | 80% | 82.5% (81% for unsalted butter) | 80% | 80% (82% for unsalted butter) | | | |
| Maximum milk solids –not fat content | 2% | | 2% | | | | |
| Maximum water content | 16% | 16% | 16% | 16% | | | |
| Maximum salt Nacl | 3% | 2% (min) | 1.8% | 2.5% | | | |
| Minimum Curd | | 1.5% (same for unsalted butter) | | | | | |
| CHEMICAL REQUIREMENTS | | | | | | | |
| Butter Serum PH | 6.6-7.0 | | 6.6-7.0 | | | | |
| Acid Value of fat | Max 0.1% | | | | | | |
| Reichert-Polenske values | | | | | | | |
| -Reichert value | 20 - 35 | | | | | | |
| -Polenski value | 1 – 3.5 | | | | | | |
| -Kirshner values | 20 - 33 | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|--|--------|---|--------------------------------|--------|--------|-----------|
| Iodine value | 26 - 40 | | | | | | |
| Saponification value | 219 - 239 | | | | | | |
| Refractive index 40°C | 1.4530 – 1.4590 | | | | | | |
| FOOD ADDITIVES | Max. level | | | | | | |
| B – Carotene Synthetic | 25 mg/kg | | | | | | |
| Carotenes (Natural extracts) | 600mg/kg | | | | | | |
| Annatto | 20mg/kg (bixin, norbixin basis) | | | | | | |
| B-apo-8-Carotenoic acid, methyl or ethyl ester | 35 mg/kg | | | | | | |
| Acidity Regulators - Sodium Phosphates - Sodium carbonate - Sodium hydrogen carbonate - Sodium hydroxide - Calcium hydroxide | 29g/kg singly or combination expressed as anhydrous substances | | 2g/kg singly or combination expressed as anhydrous substances | | | | |
| CONTAMINANTS | | | | | | | |
| Heavy Metals | Maximum Level | | | | | | |
| Lead | 0.05 | | | 0.05 (applies to heavy metals) | | | |
| Iron | 2 | | | | | | |
| Copper | 0.05 | | | 0.05 | | | |
| Pesticide Residues | mg/kg | | | | | | |
| Aldrin and diedrin | 0.006 (milks) | | | | | | |
| Carbaryl | 0.1 (milks and | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------|--|--------|---|----------|--------|--------|-----------|
| | milk products) | | | | | | |
| Carbophenothion | 0.004 (milks) | | | | | | |
| Chlordane | 0.002 (milks) | | | | | | |
| Chlorfenvinphos | 0.008 (milk of cattle, goat, sheep) | | | | | | |
| Chlormequat | 0.1 (milk of cattle, goat, sheep) | | | | | | |
| Chlorobenzite | 0.05 (milk of cattle, goat, sheep) | | | | | | |
| Chlorpyrifos | 0.01 (milks) | | | | | | |
| 2-4-D | 0.05 (milk of cattle, goat, sheep) | | | | | | |
| etc | | | | | | | |
| MICROBIAL LIMITS | | | | | | | |
| Total count | 10 ⁵ | | | | | | |
| E. Coli | Absent in 1g | | | | | | |
| Salmonella | Absent in 25g | | | | | | |
| Moulds | 10 per g | | | | | | |
| Yeasts | 10 per g | | | | | | |
| PARASITES | Free from Parasites | | | | | | |
| MYCOTOXINS | Not in amounts which represent a hazard to health. | | | | | | |
| AFFLATOXINS | Max. 10ppm | | | | | | |
| PACKAGING | | | Sanitized containers made of approved materials | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|---|---|--------|----------|----------|--------|--------|-----------|
| LABELLING | | | | | | | |
| Name of Food | Butter but suitable qualification shall be used for butter with more than 95% fat | | | | | | |
| Source of Milk | Indicate the animal(s) from which the milk has been derived | | | | | | |
| Salted or Unsalted | Butter may be labelled to indicate whether it is salted or unsalted | | | | | | |
| Name of Manufacturer | Name, location and address of the manufacturer or packer shall be clearly marked | | | | | | |
| Butter fat Content / Storage Conditions | Must be declared / shall be given | | | | | | |
| | | | | | | | |

3.7 Cheese (General)

Cheese: Fresh or matured non-liquid product obtained by drawing off the whey after coagulation of milk, cream, skimmed or partly skimmed milk, butter milk or a combination of some or all of these raw materials.

Coagulation Enzyme: A milk coagulating enzyme preparation approved for cheese making is a product which is not harmful to the health of the consumer, and with the aid of which either singly or in combination with calf rennet and/or a suitable lactic acid producing bacteria, cheese can be manufactured which has all the characteristics of the type of cheese concerned.

Table 3.7: Quality Standards for Cheese

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|--|--------|--|----------|--------|--------|-----------|
| 1. ADDITIONS (not to replace any milk constituent) | <ul style="list-style-type: none"> - Cultures of harmless lactic acid producing bacteria or harmless mould inoculations for mould ripened cheese. -Rennet or other approved coagulating enzymes. - NaCl at good manufacturing practice. - Calcium chloride, max.200mg/kg of the milk used. - Natural flavoring substances not derived from milk, such as spices | | <ul style="list-style-type: none"> - Cultures of harmless lactic acid producing bacteria or harmless mould inoculations for mould ripened cheese. -Calf- rennet or other approved coagulating enzymes. - NaCL at good manufacturing practice. -Natural flavouring substances not derived from milk, such as spices | | | | |
| 2. FOOD ADDITIVES | | | Optional | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|---|--------|----------|----------|--------|--------|-----------|
| a. Emulsifiers - sodium, potassium and calcium salts of the mono-di- and polyphosphoric acids - sodium, potassium and calcium salts of citric acid - citric acid and/or phosphoric acid with sodium hydrogen carbonate | 40g/kg, singly or in combination, calculated as anhydrous substances, except that added phosphorous compounds should not exceed 9g/kg calculated as phosphorous | | | | | | Permitted |
| b. Acidifiers/P^H controlling agents - citric acid, phosphoric acid, acetic acid, lactic acid, sodium hydrogen carbonate and/or calcium carbonate | 40g/kg, singly or in combination, calculated as anhydrous substances, except that added phosphorous compounds should not exceed 9g/kg calculated as phosphorous | | | | | | Permitted |
| c. Colours - Annatto - Beta- Carotene - Chlorophyll including coper chlorophyll - Riboflavin - Cleoresin of Paprika - Curcumin d. Preservatives - Either sorbic acid, and its | 600mg/kg singly or in combination Limited by Good Manufacturing Practices (GMP) 3g/kg singly or in combination expressed as the | | | | | | Permitted |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|--|--------|----------|----------|--------|---|-----------|
| sodium and potassium salts, or propionic acid and its sodium and calcium salts - Nisin | acids. Max. 12.5 mg of pure nisin per kg | | | | | | Permitted |
| e. Microbial Requirement (All Cheese) - Pathogenic micro-organisms - Faecal coliforms - Non-faecal coliforms | Nil per gram Nil per gram Max. 10 per gram | | | | | Nil per g Nil per g Max. 10 per g | |
| f. Microbial Requirement (Fresh Cheese) - Mould - Yeast | Max 10 per gram Max 10 per gram | | | | | | |

3.8 Specific Type of Cheese

Table 3.8: Quality Standards for Specific Type of Cheese

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--------------------------|-------|--------|----------|----------|--------|---|-----------|
| 1. Cheese | | | | | | 30-50% | |
| Milk Fat Content | | | | | | | ≥40% |
| Water | | | | | | | |
| Natural Constituents | | | | | | 100% | |
| 2. Cottage Cheese | | | | | | | |
| Milk Fat Content | | | | | | | 10-18% |
| Water | ≤80% | | | | | | ≤80% |
| | | | | | | | |
| 3. Cream Cheese | | | | | | ≥65% | |
| Milk Fat Content | ≥65% | | | | | ≤55% | ≥65% |
| Water | ≤55% | | | | | | ≤55% |
| Stabilizers | ≤0.5% | | | | | | |
| 4. Process Cheese | | | | | | | |
| Milk Fat Content | ≥45% | | | | | ≥65% | ≥45% |
| Water | ≤43% | | | | | ≤55% | |
| 5. Cheese Spread | | | | | | | |
| Milk Fat Content | | | | | | | |
| Water | | | | | | | >50% |
| 6. Cheddar Cheese | | | | | | | |
| Milk Fat Content | ≥50% | ≥31% | | | | ≥50% (made from matted and milled curd of milk) | |
| Water | | ≥36% | | | | | |
| SNF | | ≥33% | | | | | |
| 7. Cheese | | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|-------|--------|----------|----------|--------|--------|--|
| Danbo/Gouda | | | | | | | |
| Milk Fat Content | | ≥24.5% | | | | | |
| Water | | ≥46% | | | | | |
| SNF | | ≥33% | | | | | |
| 8. Skim Milk Cheese | | | | | | | |
| Milk Fat Content | ≤15% | | | | | ≤15% | |
| Water | | | | | | | |
| SNF | | | | | | | |
| Microbial Requirements | | | | | | | |
| Staphylococcus aureus | | | | | | | 10,000 per g for unpasteurized milk |
| Salmonella | | | | | | | Absent in 25g |
| Listeria | | | | | | | Absent in 25g |
| E. coli | | | | | | | 10 per g for pasteurized milk, 10,000 per g for unpasteurized milk |

3.9 Other Milk Products

Table 3.9: Quality Standards for Other Dairy Products

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--------------------------------------|------------|--------|----------|----------|--------|--------|----------------------------|
| 1. Reduced Fat Milk | | | | | | | |
| Milk Fat Content | 2.25-3.25% | | | | | | |
| Water | | | | | | | |
| Milk SNF | ≥8.25% | | | | | | |
| 2. Skimmed Milk | | | | | | | |
| Milk Fat Content | ≥8.5% | | | | | | ≤0.5% |
| Water | | | | | | | |
| Milk SNF | ≥8.5% | | | | | | ≥8.5% |
| Max Pesticide residues | | | | | | | ≤0.01mg/kg |
| Total viable count (30oC for 48 hrs) | | | | | | | 10 ⁵ per g |
| 3. Evaporated Milk | | | | | | | |
| Milk Fat Content | ≥7.5% | | | | | | ≥7.5% |
| Water | | | | | | | |
| Milk SNF | ≥17.5% | | | | | | ≥25% |
| Other ingredients | | | | | | | Permitted food conditioner |
| 4. Evaporated Skimmed Milk | | | | | | | |
| Milk Fat Content | | | | | | | |
| Water | | | | | | | |
| Milk SNF | | | | | | | |
| Milk Solids including Fat | ≥20% | | | | | 20% | |
| 5. Sweetened Condensed Milk | | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|--|------------------------------|--------|----------|----------|------------------------------|--------|---|
| Milk Fat Content | ≥9% | | | | | | ≥8% |
| Water | | | | | | | |
| Milk SNF | ≥22% | | | | | | ≥28% |
| Other ingredients | | | | | | | Permitted food conditioner, may contain sugar |
| 6. Skimmed Sweetened Condensed Milk | | | | | | | |
| Milk Fat Content | | | | | | | |
| Water | | | | | | | |
| Milk SNF | | | | | | | |
| Milk Solids including Fat | ≥26% | | | | | | |
| Natural Constituents | | | | | | | |
| 7. Ghee | | | | | | | |
| Milk Fat Content | ≥99% | | ≥99.6% | | | ≥99.3% | |
| Water | ≤1% | | ≤0.3% | | | ≤0.5% | |
| Insoluble impurities | | | | | | | |
| Fatty acids | ≤0.3% | | ≤0.3% | | | | |
| Oxidants | | | | | | | |
| Coliform bacteria | Nil | | | | | | |
| Colouring Matter | Nil | | | | | | |
| Iodine value | | | 26-38 | | | | |
| Saponification value | | | 220-234 | | | | |
| Peroxide value meg/ke | | | ≤0.1 | | | | |
| 8. Cream | | | | | | | |
| Milk Fat Content | ≥35% for heavy cream, 20-35% | | | | ≥35% for heavy cream, 20-35% | ≥18% | ≥18% for cream, ≥45% for double |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-----------------------------|---|--------|----------|----------|---|----------|--|
| | for medium cream and 10-20% for light cream | | | | for medium cream and 10-20% for light cream | | cream, ≥35% for heavy whipped cream, 10-18% for half cream and ≥28% for whipped ream |
| Caseinates | | | | | | | ≤0.1% for cream, 0.1% for double cream, ≤0.1% for heavy whipped cream, ≤0.1% for half cream and ≤0.1% for whipped ream |
| Total Solids | | | | | | | ≤2% for cream, ≤2% for double cream, ≤2% for heavy whipped cream, ≤2% for half cream and ≤2% for whipped ream |
| Plate count per g | ≤100,000 | | | | ≤100,000 per ml | ≤100,000 | |
| Coliform count per g | ≤10% | | | | Nil | ≤10 | |
| Faecal coliform count per g | Nil | | | | | Nil | |
| Sweeteners and Flavouring | | | | | ≤13% of sucrose, vanilla may be used for flavouring | | |
| 9. Ice-Cream | | | | | | | |
| Stabilizer | ≤1% by weight of finished | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-----------------------------|-------------------------------------|--------|----------|----------|--------|--------|------------------|
| | product | | | | | | |
| Preservatives | Nil | | | | | | ≥10% |
| Milk Fat Content | ≥10% | 12% | | | | | |
| Water | | 12% | | | | | |
| Milk SNF | | 11% | | | | | |
| Total Solids | ≥36% | | | | | | |
| Emulsion stabilizer | | 0.70% | | | | | |
| Solids per litre | ≥171 g | | | | | | |
| Plate count per g | | | | | | | |
| Coliform count per g | ≤10% | | | | | | 100 per g |
| Faecal coliform count per g | Nil | | | | | | |
| Total viable count per g | | | | | | | 10 ⁵ |
| Staphylococcus aureus | | | | | | | 100 per g |
| Salmonella | | | | | | | Absent in 25g |
| Listeria | | | | | | | Absent in 1g |
| E. coli | | | | | | | 1 per g |
| 10. Milk Ice | | | | | | | |
| Stabilizer | ≤0.5% by weight of finished product | | | | | | |
| Preservatives | Nil | | | | | | |
| Milk Fat Content | ≥3% | | | | | | 10-18% |
| Water | | | | | | | |
| Total Solids | ≥8% | | | | | | ≥8% (whole milk) |
| Solids per litre | ≥171 g | | | | | | |
| Plate count per g | ≤100,000 | | | | | | |
| Coliform count per g | ≤10% | | | | | | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|-------|--------|----------|----------|--------|--------|---|
| Faecal coliform count per g | Nil | | | | | | |
| Total viable count per g | | | | | | | 10 ⁵ |
| Staphylococcus aureus | | | | | | | 100 per g |
| Salmonella | | | | | | | Absent in 25g |
| Listeria | | | | | | | Absent in 1g |
| E. coli | | | | | | | 1 per g |
| 11. Flavoured Milk | | | | | | | |
| Milk Fat Content | | | | | | | ≥3% |
| Milk SNF | | | | | | | ≥8.5% |
| Other Ingredients stabilizer | | | | | | | Permitted colouring substance food conditioner. May contain added sugar |
| Campylobacter | | | | | | | Absent in 25g |
| Total viable count per g | | | | | | | 10 ⁵ |
| Coliform count per g | | | | | | | 100 per g |
| Faecal coliform count per g | | | | | | | |
| Staphylococcus aureus | | | | | | | 100 per g |
| Salmonella | | | | | | | Absent in 25g |
| Listeria | | | | | | | Absent in 1g |
| E. coli | | | | | | | 1 per g |
| 12. Reconstituted Milk | | | | | | | |
| Milk Fat Content | | | | | | ≥3% | |

| Principal Requirements | Kenya | Uganda | Tanzania | Ethiopia | Malawi | Zambia | Mauritius |
|-------------------------------|--------------|---------------|-----------------|-----------------|---------------|---------------|------------------|
| Water | | | | | | | |
| Milk SNF | | | | | | ≥8.3% | |
| Total Solids | | | | | | 12% | |
| Faecal coliform in 0.01 ml | | | | | | Nil | |
| Pathogenic micro organisms | | | | | | Nil | |
| | | | | | | | |

ANNEX 4

SANITARY REQUIREMENT

Raw (whole) milk

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <p><i>The following requirements are applicable to imports of all dairy products:</i></p> <ul style="list-style-type: none"> • Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; • Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; • Laboratory Tests before disposal |
| Mauritius | <p>The veterinary services requires that the exporting country is free from most contagious animal diseases (e.g., BSE (mad cow disease))</p> |
| Tanzania | <ul style="list-style-type: none"> • Imports must be from countries not under veterinary restrictions. In addition certification for FMD, and Rinderpest, needed. <i>This requirement is applied on raw (whole) milk</i> • Certification of HACCP for imports of Pasteurized and UHT milk |
| Malawi | <p><i>The following requirements are applicable to imports of all dairy products:</i></p> <ul style="list-style-type: none"> • Certification by Competent Authority that there were no cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months in the country of origin • Certification that milk is processed in Government registered and licensed factories which are subjected to regular inspections |

| | |
|-------|--|
| Kenya | <p><i>The following requirements are applicable to imports of all dairy products:</i></p> <p>Imports of milk and milk products must be certified by an official veterinary surgeon as meeting the following animal health attestation requirements:</p> <ul style="list-style-type: none"> • The area within a 10km radius of the farms of origin has been free from any disease to which cattle are susceptible and which are notified to the Veterinary Authorities of the country of origin within the previous 3 months • There has been no Foot and Mouth Disease, Lumpy Skin or Contagious Bovine Pleuropneumonia within 50km of the farms of origin within the previous 3 months • There has been no Foot and Mouth Disease Types SAT1, SAT3 or ASIA 1 or Rinderpest or Vesicular stomatitis recorded in the country of origin within the previous four years. There is no recorded case of Bovine spongiform encephalopathy in the country of origin • That the milk or milk products originate from animals that have passed the following tests within 30 days prior to the exports: <ul style="list-style-type: none"> ➤ Single comparative intradermal Tuberculin Test for Tuberculosis applied and interpreted according to the standards of WHO/OIE/FAO ➤ Serum Agglutination Test for Brucellosis interpreted with regard to any previous vaccination according to the standards of WHO/OIE/FAO ➤ Complement fixation test for Johnes Disease (Paratuberculosis). • Do not constitute any danger of introducing infectious or contagious diseases such as vibriosis, leptospirosis, Trichomoniasis, Brucellosis, the herds have been free for 2 years and in any case of Bovine Leucosis and Johnes Disease for 5 years. There is no |
|-------|--|

| | |
|--------|---|
| | <p>recorded case of Bovine Spongiform Encephalopathy (BSE) in the country of origin.</p> <ul style="list-style-type: none"> • Having been prepared from raw milk derived from animals, not showing clinical signs of a disease that can be transmitted through milk/milk products that the raw milk was produced, handled and kept hygienically and subjected to preliminary qualitative tests, including Resazurin test, adulteration tests, organoleptic test, etc. and found to be of good quality before processing. |
| Uganda | |
| Rwanda | |

Pasteurized milk

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; ➤ Laboratory Tests before disposal |
| Mauritius | The veterinary services requires that the exporting country is free from most contagious animal diseases (e.g., BSE (mad cow disease) |

| | |
|----------|---|
| Tanzania | Certification of HACCP |
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are hygienically and professionally packed |
| Kenya | |
| Uganda | |
| Rwanda | |

UHT

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officers ➤ Laboratory Tests before disposal |
| Mauritius | The veterinary services requires that the exporting country is free from most contagious animal diseases (e.g., BSE (mad cow disease) |
| Tanzania | Certification of HACCP |
| Malawi | |
| Kenya | |
| Uganda | |
| Rwanda | |

Powdered milk

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; ➤ Laboratory Tests before disposal |
| Mauritius | Exporting country is free from contagious animal diseases (e.g., BSE (mad cow disease) |

| | |
|----------|---|
| Tanzania | None |
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are hygienically and professionally packed |
| Kenya | |
| Uganda | |
| Rwanda | |

Whey

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | None |
| Mauritius | Exporting country is free from contagious animal diseases (e.g., BSE (mad cow disease) |
| Tanzania | From countries not under veterinary restrictions e.g. FMD, rinderpest, etc. |
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are transported under sanitary frozen (4C) conditions in refrigerated trucks |
| Kenya | |
| Uganda | |
| Rwanda | |

Yogurt

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; ➤ Laboratory Tests before disposal |
| Mauritius | Exporting country is free from contagious animal diseases (e.g., BSE (mad cow disease) |
| Tanzania | Countries not under disease restriction |

| | |
|--------|---|
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are transported under sanitary frozen (4C) conditions in refrigerated trucks |
| Kenya | |
| Uganda | |
| Rwanda | |

Butter

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; ➤ Laboratory Tests before disposal |
| Mauritius | Exporting country is free from contagious animal diseases (e.g., BSE (mad cow disease)) |
| Tanzania | No |
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are transported under sanitary frozen (4C) conditions in refrigerated trucks |
| Kenya | |
| Uganda | |
| Rwanda | |

Cheese

| Country | Sanitary Requirements |
|-----------|---|
| Zambia | <ul style="list-style-type: none"> ➤ Certification – Foot and Mouth Disease, Tuberculosis, Brucellosis free; ➤ Government Veterinary Officer sealed in exporting country – seals must be intact when examined by Zambian Government Veterinary Officer; ➤ Laboratory Tests before disposal |
| Mauritius | Exporting country is free from contagious animal diseases (e.g., BSE (mad cow disease)) |
| Tanzania | No |

| | |
|--------|---|
| Malawi | <ul style="list-style-type: none"> • No cases of FMD, Rinderpest or any infectious disease of cattle, pigs, sheep, goats and other domestic animals for the last six months • Milk is processed in Government registered and licensed factories which are subjected to regular inspections • Products are transported under sanitary frozen (4C) conditions in refrigerated trucks |
| Kenya | |
| Uganda | |
| Rwanda | |