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Recent developments in the dairy sector in Eastern Africa

Towards a regional policy framework for value chain development

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Key messages

In Eastern Africa, the dairy sector is crucial for rural development, poverty reduction and food and nutrition security. Yet, its potential remains underexploited. Despite a strong interest from policymakers and investors and the on-going re-structuring of dairy value chains, a number of production, marketing and trade constraints hinder their development.

East African countries face similar issues, notably low dairy farm productivity and inadequate milk quality. These challenges stem from various constraints, including technological, capacity, organisational and policy ones. Removing some of these bottlenecks may require regional-level interventions, especially to remove barriers to trade products as well as inputs.

This note shows that there are opportunities to strengthen or build upon existing regional structures and market complementarities, so to activate stronger regional levers and coordinate actions across countries around a regional strategy. Various stakeholders have indicated that the related priority areas should be creating a regional regulatory framework and developing capacities.

Introduction

Regional economic integration is progressing steadily in Eastern Africa and contributing to economic growth and development in that region. In Eastern Africa alone three Regional Economic Communities (the EAC, IGAD, and COMESA) are establishing common policy and regulatory frameworks providing for the integration of regional markets. East African countries in particular have accomplished much in terms of market integration as shown by the rapid increase in intra-regional trade in recent years, thanks in part to better transport infrastructure, more efficient customs and inspection procedures at border crossing points and lower behind-the-border barriers to trade (notably import licensing). These increasing trade linkages are allowing domestic sectors to expand and exploit complementarities.

Regional markets for agricultural and food products constitute an important dimension of regional economic integration for East African countries, because of the importance of the agricultural sector to their economies and its potential to contribute to economic growth and poverty reduction. Understanding how progress is being made in the integration of agricultural and food markets and broader regional cooperation in agricultural development and agro-food value chain development, and how these can have positive impacts on the livelihoods of vulnerable households is important for various stakeholders.

This Briefing Note considers the case of the dairy sector in Eastern Africa, to understand dynamics within a specific agro-food sub-sector and the interactions with other agricultural and non-agricultural sectors. Eastern African countries have in common the importance of the livestock and dairy sectors as major sectors for agricultural development, and they have already made some progress in developing a common approach and a common market for these sectors. Regional initiatives have emerged in support of national processes such as the Comprehensive Africa Agriculture Development Programme (CAADP), but this process is far from complete. The dairy sector is one of the few sectors where the concept of value addition has been successfully adopted along the supply chain and the benefits transcend beyond the households that depend on dairy directly, to also the other value chain actors (farm input dealers, dairy equipment, dairy ingredients dealers, raw milk traders, milk transporters, small/ medium/ large scale milk processors, distributors etc.)[1].

The Briefing Note looks at the various actors and factors that have contributed that process, including public institutions, the private sector and external actors at national and regional levels, production issues, market and business trends, as well as the inherent political drivers. It provides some insights to policymakers, private actors and development partners on how to move that regional integration process forward, building on the positive strategic and business partnerships, innovative business case stories and accomplishments to further inform policy and support private sector development in that sector in Eastern Africa.

1. Trends, bottlenecks and opportunities in Eastern African dairy farming and marketing

Milk production

Eastern Africa is the leading first milk-producing region in Africa, representing 68% of the continent's milk output.[2] Ethiopia, Kenya and Tanzania are among the biggest dairy producers in Africa. As in Sub-Saharan Africa (SSA) in general, cow milk production is predominant in Eastern Africa, followed by goat milk, sheep milk and camel milk.[3] The dairy sector is one of the fastest growing agricultural sub-sectors in Eastern African countries, which has generated significant economic returns and employment opportunities along dairy value chains. In Rwanda, according to the 2013 National Dairy Strategy (NDS), milk production has been rising rapidly, from 51.5 million (m) litres (l) in 2000 to 445 m l in 2012 and continued rapid growth is expected. This rapid rise in milk production has been attributed to a favourable policy and institutional environment and important investments by the Government and development partners.

Table 1: Dairy production in Eastern Africa in 2011

Country	Milk (million t) 2011	Milk (% growth rate, 2000-11)	Butter (1000 t)	Cheese (1000 t)
Ethiopia	4.4	14.2	17.6	5.8
Kenya	4.3	5.5	14.7	0.3
Rwanda	0.2	5.3	0.7	n/a
Tanzania	1.8	7.8	31.5	13.0
Uganda	1.2	8.0	n/a	n/a

Source: FAO STAT, 2014.

1 EPRC, 2012, Dairy Sector Reforms and Transformation.
2 Eastern Africa has the highest concentration of indigenous and exotic cattle, with indigenous breeds being predominant. Ethiopia hosts the largest cattle population in Africa, estimated at 50.9 m (ILRI, 2013). Tanzania, Kenya, Uganda and Rwanda have cattle populations of 18.2, 12.9, 12.8, and 1.1 m, respectively (FAO, 2011; SNV 2008; and UBOS, 2013).
3 At the SSA level, the proportion are roughly 80, 10, 5 and 5%, respectively.

Demand and supply of dairy products

East Africans are relatively important consumers of milk and dairy products compared to other African countries. Generally, milk consumption is rising although there are disparities among eastern African countries. Population growth, urbanisation, rising incomes and changing lifestyles are the main drivers of this trend. In Kenya, annual per capita milk consumption estimates vary between 80 and 100 l, which is the highest in Africa. Furthermore, milk consumption by Kenyans is growing at 2 to 3% per year. Due to this rapid growth, demand is outstripping supply in Kenya (according to the Kenya Dairy Board), which is creating tensions in the raw milk market. According to the 2010 Kenya Dairy Master Plan, domestic demand was expected to more than double by 2030, increasing from 110 to 220 m l, given population growth projections and current trends in milk utilisation (total utilisation projected to rise to 12.8 bn l). In contrast, in Rwanda, per capita milk consumption is relatively low, estimated at 40 l per year. According to the 2013 NDS, consumer demand for both raw and processed milk is not increasing fast enough to clear projected raw milk supplies. In Tanzania and Uganda, milk consumption is also lower than in Kenya, with people consuming 40 and 45 l of milk per capita and per year (FAO, 2011).

Table 2: Contribution of the dairy sector to GDP and farm employment

Country	% share of agricultural GDP	% share of GDP	Smallholder dairy farmers (m)
Ethiopia	40	12-16	
Kenya	50	3	2
Rwanda	15	6	0.1 million
Tanzania	n/a	1.8	n/a
Uganda	50	7-9	0.7

FAO, 2011; Rwanda NDS, 2013; and IMPS, 2013.

On the supply side, the production of dairy products is increasing but trends differ among countries in the region. From a heavily state-managed industry, with the objective of satisfying domestic food consumption and nutrition needs, to the reforms that led to a private-sector-driven industry, especially in the processing sector, the eastern African dairy production and marketing has gone through a broad-ranging transformation, especially over the past decade. During that period, there has been an increase in private investment in dairy processing and intensive dairy cattle systems, around which improved husbandry, improved breeds, and feed systems were developed, adopted and disseminated, with many dairy farmers settling in and around urban areas through a process of sedentarisation. This led to an increase in productivity and production. At the same time, the range of products offered in the market has expanded. While dairy products used to be limited essentially to raw milk and pasteurised milk, consumers can now access a range of processed products, including UHT milk, fermented milk (or traditional sour milk), butter, cheese, yoghurt, milk powder and so forth.

Trade dynamics

Dairying in Eastern Africa essentially remains a domestic, or even localised, business. In the Eastern Africa Community (EAC), only 10 to 20% of the raw milk supply, depending on the country and sources, is marketed and distributed through formal channels, whereas less then one per cent of dairy products are exporters within or outside the region. To a large extent, this is explained by the fact that milk and dairy products are difficult to trade due to their perishability, tropical temperatures that exacerbate the perishability issue and also to the relatively high costs of trading across borders in the region.[4] Yet, recent data show that intra-regional trade in dairy products is slowly rising. In recent years, Uganda has become the first exporter of dairy products in the region, with its dairy exports valued at USD24.6 in 2013 (including both the regional and overseas markets). About four-fifths of Ugandan dairy exports were destined to Kenya. The other markets were the Democratic Republic of Congo (DRC), South Sudan and Sudan. Uganda also exported some dairy products to the United Arab Emirates, Egypt, Syria and India, mainly UHT milk, milk powder, butter, ghee and other butterfat-based products.

[4] World Bank. 2010. NTBs and Regional Standards in the EAC Dairy Sector, Africa Trade Policy Notes Note #2.

Kenya in contrast imports dairy products to meet an expanding domestic demand. Recently, imports of milk powder have jumped as the Government is replenishing the national milk reserve, which was depleted in early 2014 following a long dry spelt that depressed milk production.[5] Rwanda is also an importer of dairy products, mainly UHT milk, butter and milk powder coming from Uganda. It exports small quantities of dairy products (UHT milk and sour milk) mostly to Burundi, the DRC, and South Sudan. Rwanda has also started to export cheese to Europe, Russia and the UAE, and ghee to India. Actors in Rwanda are also getting ready exploit dairy export opportunities in Burundi and the DRC where the gap between demand and supply is growing.[6]

Table 3: Uganda's dairy exports to selected countries in 2011-13 (in USD1,000)

Importing country	2011	2012	2013
DRC	$2,161	$2,440	$1,467
Kenya	$13,146	$13,989	$19,674
Rwanda	$79	$237	$259
Ex-Sudan	$1,017	$2,300	$2,617
Tanzania	$457	$434	$527

Source: UEPB Reports, 2014.

Overall in the EAC area, there is a gap between supply and demand for dairy products that is met by imports from outside the region. Imports come from Europe, Australia, New Zealand, South Africa and the USA. However, there are signs that the movement of dairy products from surplus-producing areas to deficit areas within Eastern Africa is on the rise. Furthermore, as local dairy processors have become more competitive over time, local products are increasingly competitive with imported products, as the downward trends in Kenya's imports of milk and cream from extra-regional origins (EAC, 2013).

Structure and performance of dairy supply chains

Dairy farming in Eastern Africa

Dairy production systems are generally categorised into three types, pastoral, agro-pastoral and sedentary systems. Difference among these systems include differences in terms of agro-climatic conditions, the objectives of milk production, resources used, the scale of production, market orientation and the use of equipment, inputs and services (ILRI, 2013). Nonetheless, in different systems, livestock has a particular economic utility and cultural significance in Eastern Africa as in other parts of the continent. Households use animals, especially cows, as stores of value, as well as a symbol of wealth. Livestock is also an asset used in cultural traditions such as those related to marriage. Thus, livestock ownership is widespread in Eastern African countries.

In Ethiopia, Kenya and Rwanda, dairy farming is most common in highland areas because of the favourable agro-climatic conditions characterised by a cool and humid climate, which entails small fluctuation in milk production during the year. In these areas, the agro-pastoral (crops and livestock) production system is predominant. This production system allows households to generate income from milk sales, have access to a diversified diet, improving their food and nutrition security conditions, have access to manure, which raises agricultural productivity, and store their income in animals (Kenya Dairy Master Plan, 2010).

The sedentary production system, usually without grazing, with cows kept in stalls and fed with forage, produces a large fraction of the milk output. This system is adapted to the constraints of smallholder farmers with limited land area and to the management by women who usually keep one to three cows in a stall, who account for a large share of sedentary production (World Bank, 2009).[7] The sedentary system is becoming more preponderant, especially in and around urban areas, where producers take advantage of the proximity to input and output markets.

In rural dry lands in Ethiopia, Kenya, Tanzania and Uganda, the predominant modes of dairy production are the pastoral and agro-pastoral systems. In the dry lands of Kenya and Tanzania, the Masai people, who account for most of the population in those areas, depend mainly on livestock for their livelihoods.

[5] ESADA 2014 Dairy Conference - Opening remarks
[6] Rwanda NDS 2013 Report
[7] Women tending cows do not usually own them. To "empower" women, Rwanda's Girinka programme 'One Cow, One Family' has made gender a key criterion in the allocation of cows, targeting women specifically.

They have a nomadic lifestyle, moving from one place to another in search of pasture and water between these two countries. The milk output from the dry lands makes up to 30% of domestic output in Kenya. In Ethiopia, milk production in the dry lands represents 65% of domestic output (FAO, 2011; ILRI, 2013).

An economic valuation of dairy-based livestock production systems in the dry land in Eastern Africa showed that it is more productive (per hectare) than meat-based production systems (ASARECA 2011).

The fourth dairy production mode is the large-scale, commercial system, characterised by its high use of equipment and inputs. In Eastern Africa, commercial dairying has developed mostly in Kenya, where it contributes 15% of domestic milk production.

Marketing structures

About 90% of the milk produced by smallholder milk producers sold through formal or informal channels, whereas the remaining 10% is retained for the own consumption of households and for feeding calves.[8] The collection and bulking of raw milk from farmers is the first step in the marketing chain. Milk channelled onto the market is delivered through a diverse range of actors in the informal and formal chains, including collectors, transporters, and traders operating on the informal market, and collection agents, transporters or employees operating on behalf of the processing companies. Milk collection centres, also called "milk hubs", facilitate this step.

The cooperative is the most common structure for milk marketing. In Kenya there were 337 cooperatives, supported by 344,000 members as of 2000 (Kenya DMP, 2010). Cooperatives provide a range of services to their members, including milk collection, cooling and distribution. They also supply inputs, provide services (artificial insemination and veterinary drugs notably), give access to credit, and deliver extension services. Kenya has the most advanced and organised cooperative structures in the region, with some cooperatives processing and marketing value-added products such as the Githunguri and Limuru cooperatives. In Uganda, there are 214 registered cooperatives, 70% of which belong to the Uganda Crane Creameries Cooperative Union (UCCCU), mostly representing cooperatives in the milk producing areas of western Uganda. These cooperatives market almost one-quarter of the domestic milk output. The UCCCU, which is affiliated to the Uganda National Dairy Farmers Association (UNDFA), recently obtained a license to process milk and is currently installing a plant in western Uganda with a capacity of 310,000 l per day. The case of the UCCCU illustrates the evolution of cooperatives into commercially oriented organisation, which is a marked trend in the dairy sector in Eastern Africa. This shift is a response to the need to improve the efficiency of the value chain, capture for more value for farmers, and address the increasing demand in urban markets for value-added products through various retail outlets.

Table 4: Leading processors in Kenya, Rwanda and Uganda

Country	Processor *(100,000 litres+)*	Installed capacity (litres/day)
Kenya	New KCC	1.2million litres
	Brookside Dairies	700,000 litres
	Spin Knit	300,000 litres
	Githunguri Dairy	120,000 litres
	Aberdare Creamery	100,000 litres
Rwanda	Inyange Industries	120,000 litres
Uganda	Sameer Agriculture Livestock Ltd (SALL)	550,000 litres
	Amos Dairies	400,000 litres
	Pearl Dairy	240,000 litres
	JESA Farm	100,000 litres
Tanzania	Total processing capacity	510,000 litres
Ethiopia	Total processing capacity	150,000 litres

Source: Interviews; DDA Internal Report 2013; and Kilimo Trust, 2012.

As of 2004, the total installed milk processing capacity in the EAC was 2.9 m l per day, and of this, 2.0 m l per day was in Kenya (see detail information in Table 4). Tanzania had an installed capacity of 510,000 l per day, Uganda 330,000 l per day, and Rwanda 23,000 l per day (EPRC, 2012). Over the past 15 years, there has been a tremendous increase in investment in dairy processing plants. In Uganda, processing

[8] In Ethiopia, a smaller fraction of the raw milk output, less than 5%, is channelled to the market. About half of the remaining 95% for household consumption as raw milk and the other half is processed into butter and ayib, a traditional Ethiopian cottage cheese (AGP-LMD, 2013).

capacity reportedly went from 330,000 litres in 2004, to 1,454,480 m l/day recently, and capacity was expected to further increase by 300,500 l by the end of 2015.[9] In Rwanda, processing capacity has tripled over that period, reaching 160,000 litres per day in recent years (Rwanda NDS, 2013), although it remains relatively low due to milk quality issues. In Tanzania, a reverse trend has observed however, with a decline in processing capacity of 80% over the past 15 years due to the closure of 13 processing plants.

Bottlenecks in the value chain

Despite the favourable trends described above, there are a number of serious issues that constrain the development of the dairy sector in Eastern Africa. These constraints notably manifest themselves in the low rate of processing capacity utilisation in the region in general. The reported share of idle capacity is 25% in Kenya, 36% in Uganda, 29% for Tanzania, and as high as 57% for Rwanda. Low demand for processed dairy products (notably pasteurised milk) and their limited diversification (more than 60% of the raw milk supply is processed as fresh, pasteurised whole milk) are often cited as factor limiting the use of available capacity. However, there are also a number of constraints on the milk supply side, especially the relatively high milk production and collection costs and the inadequate quality of raw milk. Poor milk quality limits the volumes of processed products that processors can supply, especially for value-added products such as milk powder, sour milk, cheese and yoghurt. The loss of milk due to spoilage is also cited as a major risk for all stakeholders in the dairy supply chain, with impacts on income loss, supply disruptions, etc.

Generally, the productivity of dairy farmers is relatively low. While the small scale of dairy farm operations and the lack of broad-based use of modern farm technologies/practices and improved breeds explain a great deal of the productivity gap with dairy farms in other parts of the world, a notable factor is the lack of access to feed. Throughout most of the region, fodder availability is inadequate and prices are too high for smallholder dairy farmers to access. This is constraining their milk output and their ability to expand production. This problem is compounded by seasonal changes in pasture conditions, with poor productivity during dry seasons. As show in Table 4, the cost of raw milk sourced by processors fluctuates widely during a typical year. Furthermore, traditional practices such as the multiple fasting periods in Ethiopia during which no meat or animal products (including milk and butter), are consumed, affect both the supply and demand for dairy products, which can affect the functioning of dairy value chains (CDI, 2014).

Table 4: Raw milk prices in 2014

Country	Flush period			Dry season		
	MCC	Farmer	Market price	MCC	Farmer	Market price
Uganda (Sameer)	$0.2	$0.17	$0.3	$0.38	$0.3	$0.6
Rwanda (Inyange)	$0.36	$0.32	$0.29	$0.36	$0.32	0.51

Exchange Rate: UGX/USD 2770; RWF/USD 689 (Dec 13, 2014), *usd.fxexchangerate.com*

The structure of the farm sector constitutes another obstacle to the efficiency of the dairy value chain. As milk is mainly produced by small-scale farmers scattered in rural areas or around cities and towns, milk collection involves significant transaction costs. Collectors have to visit many farms and from each of them they collect a small volume of milk. This entail relatively high operational costs for milk collection centres or industrial buyers and it negatively affects the quality of the milk due to the time spent between the milk harvest and the reception of the milk in a cooling tank. The formal trading and processing sector cannot fully collect the milk from scattered small farmers. The dairy marketing system provides too little incentives for quality assurance at different levels of the supply chain, including at the level of consumers, who lack information, awareness of food safety risks and are said no to be willing to pay more for better quality (FAO 2011).[10] The problem of milk quality, however, is inseparable from the question of the role of the informal sector (see Box 1).

Nonetheless, as processors are constantly looking for new milk sources to operate their plants at capacity[11], the proportion of milk marketed through them is reportedly steadily increasing. In Kenya, between 2002 and 2006, the volume of domestic milk processed increased from 145 m l to 360 m l, while total milk output increased from 3.1 bn l to 3.6 bn l over the same period, which represents a 5-percentage point increase in the share of raw milk processed. The Uganda National Dairy Traders Association (UNDATA) reported a large decline in the volume of raw milk sold onto the open market and a

[9] DDA Reports (2013)

[10] Common milk quality issues include adulterated milk, foreign particles, high bacterial counts due mastitis, antibiotics residues, and aflatoxin contamination.

[11] EADD 2008, The Dairy value chain in Kenya; FAO, 2011.

commensurate increase in supply to processing plants in recent years.[12] Sameer (SALL) recently announced plans to increase raw milk procurement from dairy farmers as well as an to increase milk powder production.

Box 1: Formal vs. informal sectors

Reflecting a duality common to many African economies, the dairy sector is harbours both formal and informal actors, with the former representing the largest volume of activity. These two sectors in the sector are not isolated. In fact they are linked through commercial transaction and also institutional relations, and the boundaries are in some cases blurred. Formal value chains generally channel about 15% of the milk output sold by smallholder farmers in eastern African countries. In Kenya, for example, these 15% are made up mainly of milk production by commercial farms, which supply industrial processors. Besides these large processors, the formal sector also includes small and medium-size dairy producers (or the "cottage processing industry") that are licensed and regulated by public authorities. In Ethiopia, this share is even smaller as about 2% only of the milk output sold by smallholder farmers is marketed through the formal sector.

The informal sector handles about 85% of the marketed milk output through milk hubs (or "dairy societies/associations"), milk kiosks, schools, restaurants, and also to large processors and the cottage industry in need of raw milk to complement their main supply sources. Actually, most large processors have established arrangements with milk collection centres to secure supplies of raw milk, including by owning them in some cases, especially in major milk catchment areas. For instance, SALL in Uganda owns 150 collection centres and 10 bulking centres (bulking centres are collection facilities supplied by several collection centres and they are usually managed by large companies). Yet, the competition is stiff in the raw milk market between formal actors and informal traders and retailers. Informal traders can collect the milk from the farms, offer relatively high prices as well as cash payments and credit to dairy farmers and milk hubs, thanks to their lower marketing costs. This competition, in turns, makes it difficult for different operators (including collection centres) to establish and maintain formal value chain relations and ensure that the raw milk supply is stable and that certain quality standards are followed. On the one hand, informal channels provide undeniably benefits to farmers and traders by allowing them to secure their livelihoods and to low-income consumers by supplying them with affordable milk; but on the other hand it can constitute an obstacle to the development of value chains. Besides, informality may entail a loss of fiscal receipts, makes it difficult to apply regulatory standards, and create food safety risks.

Growing demand for dairy products

There is an increase in the production and marketing of other products such as UHT, milk powder, yoghurt, cheese and curd, butter, butter oil, fermented/cultured milk, ghee and ice cream (including those supplied by homestead and backyard processors), in response to the growing demand in the urban areas and regional markets[13]. The margins for yoghurt are high and this explains the tremendous growth in supply from both the large processors and cottage industry based production. The price margins for 500mls yoghurt, based on $0.24 farm gate price for instance is; 33% for the trader, 69% for the processor, and 44% for retailers[14]. This has been followed with an increase in dairy investments inform of capacity expansion and technology improvements, and new entrants in the region's dairy processing industry. Between 2003 and 2006 Uganda's UHT milk production increased from 5.7million to 8.8million litres, Yoghurt from 425,464 to 743,000litres, while Ghee, a traditionally popular product increased from 12,215kgs to 110,601kgs in the same period. [15] While the prevailing raw milk marketing system is largely "low input- low cost milk industry", the scarcity of quality raw milk is an impediment to dairy processing and marketing development throughout the region.

Supporting sectors

Milk producers, processors, traders and retailers rely on a complex web of commercial suppliers of equipment, inputs, and services as well as trade associations and public organisations. Private providers of advisory services, veterinary and artificial insemination services, feed, farm equipment, cooling equipment and refrigerated transport, dairy processing equipment, additives and other inputs, and packaging are well

[12] Agri Profocus 2014, National Dairy Event Report
[13] EPRC (2012)
[14] Agriterra (2012), Identification of livestock investment opportunities in Uganda
[15] In the past, New KCC in Kenya and SALL Uganda were the only producers of milk powder. However, Brookside Dairies in Kenya expanded its operations to include milk powder, and Pearl Dairies -a new entrant on Ugandan markets- commissioned a processing facility for milk powder in 2014. Amos Dairies is also a new player in Uganda, and the only producer of casein milk proteins for the export market on the African continent. Rwanda has registered more than 15 cheese-processing associations, and local cheese production has been increasing, from 40 tonnes in 2001, to 102 tonnes in 2005.

present in the region. Despite the period of privatisation in the late 1980s and early 1990s, governments have maintained some public structures providing services including animal breeding, inspection and certification, and training and extension (although these structures have mixed records in terms of effectiveness).

A number of public and private financial institutions provide financing to dairy farmers and processors. Private sector associations in the dairy sector are numerous, offering various services to their members, including market information, the facilitation of business-to-business relations, policy advocacy/lobbying platform (see next Section 2). Multinational and national companies are involved in the supply of dairy on-farm inputs (veterinary, animal insemination), dairy equipment, additives, etc., with some of these companies having a presence in almost all countries in the region (see Section 3).

2. A diverse and incomplete policy and institutional landscape

National dairy sector policies and institutions

National governments' policy frameworks for the dairy sector differ substantially among Eastern African countries. In Kenya, the main policy frameworks are the 2010 Kenya Dairy Master Plan and the Dairy Industry Act. In Uganda, the 1993 Dairy Master Plan and the 1998 Dairy Industry Act that still govern the sector are considered as out-dated and non-adapted to current dynamics, notably investments in the sector and trade[16], although the Government has more recently formulated a National Dairy Strategy (NDS) for 2011-15. Rwanda has its own National Dairy Strategy for the period 2013-18 to guide the development of the sector and the engagement of various stakeholders towards a modern and competitive industry, that could satisfy the consumption of the domestic population and take advantage of regional market opportunities. Rwanda's NDS emphasises public-private partnerships, the strengthening of sectorial institutions, and milk quality assurance. Uganda's NDS focuses more on milk marketing and value addition. Tanzania is in the process of developing a National Dairy Master Plan, which is guided by the 2004 Dairy Industry Act. Ethiopia has no specific dairy sector policy in effect and it is currently in the process of formulating a Livestock Master Plan that shall also address dairy related issues.

None of these countries have a proper farm policy for the dairy sector, instead relying on the general agricultural and livestock policy frameworks. The dairy industry is also affected by other sectorial policies in the areas of land, cooperatives, industry, trade, health and environment. Livestock policies and strategies play an important role in the dairy sector, particularly for animal disease control, animal breeding and animal feed. In all Eastern African countries, public health policies address food safety issues and support compliance with food safety regulations in particular sectors, including the dairy sector.

This lack of a unique and clearly defined policy framework has often left the door open for changing regulations. In Uganda, for instance, abrupt regulations were introduced at different moments between 2000 and 2006. This left the informal sector unable to cope with the costs of compliance, and responses at times have been protests and strikes, impacting also on the producers. According to the 2011 'World Bank risk assessment report' on the dairy sector in Uganda, in the absence of a dairy development policy, it is very easy for the government to formulate and implement regulations abruptly.[17] Another example is the ban by the Rwandese Government of polythene-based packaging, on grounds of environment conservation. This made the industry uncompetitive due to its dependence on expensive packaging such as tetra pack, while the other industry players in Kenya and Uganda have access to low cost packaging materials. The absence of specific and clear national dairy policies remains a key constraint to the comprehensive development of the industry in the region.

[16] Meeting Notes Dairy Development Authority/Uganda.
[17] WB 2011, Uganda Dairy Supply Chain Risk Assessment.

Box 2: Dairy regulations in Uganda

Use of plastic containers for milk transportation outlawed in 2002
Codes of hygienic practice for milk boiling centres (2003)
US 163:2000 Code of hygienic practice for milk and milk products
US 28:2002 Code of practice for hygiene in the food and drink manufacturing industry
Mandatory use of chilling equipment and insulated tankers by milk transporters introduced in 2006
Proposal to ban sale of raw milk in urban centres in 2008, and re-tabled in 2014. Currently, raw milk sellers are required to pay a fee in areas of the country where there are milk-processing plants (FAO, 2011).

With the transition to a liberalised economic environment and privatisations in the 1990s, the Kenyan, Tanzanian and Ugandan governments divested dairy processing companies and set up agencies to provide policy guidance and regulate the dairy industry.[18] The Government of Rwanda established the Rwanda National Dairy Platform in 2014 to fulfil functions similar to the dairy boards in other EAC countries. A distinct characteristic of this Platform is that it is also supposed to provide strategic guidance for the development of the Rwandese dairy industry and coordinate public and private actors. Ethiopia on the other hand does not have such an agency as a dairy board.

The mandates and the legislations governing regulatory authorities in the dairy sector in these countries have proven inadequate in several instances, especially as regards the role of private actors (FAO, 2011). In Kenya, for example, the multiple roles played by the KDB and its incomplete representativeness led to incoherencies between the regulatory and value chain development functions, which hindered the dairy sector reform process. In Tanzania and Uganda, the governance of the dairy boards has allowed for a representation of various stakeholders, but the regulators have had little impact on the development of the dairy value chain. Inadequate institutional capacities have been cited as a key factor having limited the effectiveness of DDA in enforcing regulations and improving milk quality in Uganda, while its interventions have reportedly favoured formal operators over the development of the informal sector. Despite the rationale for separating regulatory functions from development ones, in practice it appears difficult to carry them out separately, especially in a context where both formal and informal sectors coexist and where capacity for private-sector-led collective action is limited (for example, investments in technology, training and professional services). Yet, the emergence and strengthening of dairy trade associations in these countries in recent years may indicate an evolution towards a separation of regulatory functions from value chain coordination and development ones.

Organisation of the private sector

The economic liberalisation reforms created the need for governments to engage with the private sector when formulating and implementing economic and sectorial policies. This led to the establishment of the both dairy farmers and dairy traders/processors associations. But this was not just driven by governments. Private actors also recognised the need to have platforms to promote their common business interests, take part in policy processes, disseminate information among private operators, enable collective action, structure the value chain (for example, standards setting) and lobby the public sector with one voice. In some cases, these organisations provide business services, for example access to credit or business-to-business events.

Milk producer organisations gather large producers, cooperatives and small farmers associations such as the so-called self-help groups. These national organisations rely on local networks, including those formed by the associations of cooperatives. Cooperative societies are the basic elements of the organisation of dairy producers. In both Kenya and Uganda, farmers and other operators become members of cooperative on a voluntary basis. In contrast, in Rwanda, a policy directive requires that all of the raw milk produced be marketed through milk collection centres managed by cooperatives. In other words, membership to a cooperative is mandatory for dairy farmers. As an interviewee noted, '*For the first time in so many years, milk producers in Rwanda did not experience a milk glut in the past two years of 2012 and 2013 due to the improvements in milk collection*'. In Eastern Africa the major milk producer organisations are: Kenya's Dairy Producers Association (KDPA), National Federation of Dairy Farmers in Rwanda, Tanzania Milk Producers Association (TMPRODA), and Uganda National Dairy Farmers Association (UNDFA).

Dairy trade associations are diverse, some representing preponderantly processors, others promoting the interests of traders, and so forth. In Kenya, the major organisations include the Kenya Small-Scale Milk

[18] Kenya Dairy Board (KDB), Tanzania Dairy Board (TDB), and Dairy Development Authority (DDA).

Traders Association, the Kenya Dairy Traders Association, and the Kenya Dairy Processors Association (KDPA). In Uganda, the major groups are the Uganda National Dairy Traders Association (UNDATA) and the Uganda Dairy Processors Association (UDPA). In Tanzania, it is the Tanzania Milk Processors Association (TAMPA), while in Ethiopia, the Ethiopia Producers and Processors Association (EPPA). In Rwanda it's the Milk Sellers Association and Cheese Makers Association, in addition to the recently established Rwanda National Dairy Platform (RNDP), which has the particularity of gathering both public and private actors under the aegis of the Government and with the mandate to support the implementation of the National Dairy Strategy. The RNDP represents all value chain operators. Besides the dairy sector-specific organisations, many trade associations are concerned with this sector, including the feed manufacturers, livestock producers, breeders, agro-input dealers and so forth.

Despite the presence of several entities, however, those national organisations rarely succeed in mobilising a broad base of members when planning and implementing activities in the interest of the group. They usually have limited resources at their disposal to effectively pursue their mandate and address their members' needs; for instance in the case of Uganda's UNDFA, due to competing interests among members, especially between large individual operators or cooperatives and small members. Affiliates of a given association generally belong to other sectorial associations as well, which reduces their involvement in any single group and the effectiveness of such groups.[19] Yet, some of these national organisations have shown increasing influence on policy dialogues and processes.

Emerging arrangements for regional cooperation in the dairy sector

In Eastern Africa, over the past decade, few agro-food sub-sectors have attracted as much interests from both public actors, the private sector and development partners as the dairy sector. These interests have been taken up also at the regional level. The EAC and COMESA have engaged in policy processes to push forward the integration of the regional market for dairy products. The dairy industry has become organised at the regional level. And development partners have supported regional programmes. The dairy sector has also benefitted from regional integration processes in general, notably interventions to facilitate intra-regional trade. These includes the EAC's Single Customs Territory (SCT), the East Africa Payment System (EAPS) and the COMESA Regional Payment and Settlement System that facilitate customs procedures and cross-border transaction settlements, the COMESA Simplified Trade Regime and the COMESA Yellow Card Insurance scheme that ease procedures for basic commodities.

Neither the EAC nor COMESA has a specific regional policy for the dairy sector. The EAC and COMESA Secretariats have cooperated to harmonise market regulations for several agricultural and food products, including for dairy products in the EAC market and, subsequently, at the COMESA level. The EAC applies a common external tariff (CET) to dairy products imported from outside the community. This tariff amounts to 60% since the dairy products are in the "sensitive product" category. In addition, states apply a 15% VAT. However, there are variations across countries (for example, the import duty in Uganda is reduced to 25%), as well as additional taxes and levies, and frequent exemptions. The smuggling of dairy products from outside the region through various channels also constitutes a case where the CET is not applied in practice.

East Africa Dairy Regulatory Authorities Council

The East Africa Dairy Regulatory Authorities Council (EADRAC) was established in 2006 under the framework of the EAC Customs Union protocol, which was ratified in 2005, and as a platform to facilitate the harmonisation of dairy product regulations and standards in the EAC. This Customs Union protocol enacted reduced import duties for dairy products within the EAC areas.[20] The harmonisation of standards concerned raw milk, pasteurized milk, UHT milk, powdered milk, sweetened and condensed milk, butter, yoghurt, and dairy ices and ice cream.[21] EADRAC comprised the dairy regulatory authorities of the EAC member states (with the exceptions of Burundi and Rwanda as these countries joined the EAC in 2007)

[19] Processors in Uganda also tend to hold membership to associations such as the manufacturers association (UMA), Chamber of Commerce (UNCCI), and belong to special interest groups such as the Presidential Investors Round Table in Uganda where dairy investments are also addressed.

[20] Under this protocol, starting in 2005, Ugandan and Tanzania dairy products to Kenya were exempt of import duties whereas Kenyan exports to Tanzania and Uganda were subject to 25% and 10% tariffs, respectively. After a transition period, all import tariffs were reduced to zero.

[21] WB 2010, NTBs and Regional Standards in the EAC Dairy Sector

and aimed to foster their collaboration in formulating and implementing a harmonised regulatory framework, exchanging information and coordinating other policies pertaining to the dairy sector within the EAC. The mandate of EADRAC included: [22]

- Leading the harmonisation of quality standards and food safety regulations and the reduction of NTBs, including supporting and coordinating reviews of national regulations and procedures;
- Supporting the adoption and dissemination of improved technologies, including genetic materials, within the EAC;
- Spearheading capacity building initiatives for dairy sector stakeholders, including the strengthening of national dairy trade associations;
- Supporting information exchanges, advocacy and commercial promotion in the dairy industry;
- Liaising with research organisations to conduct impact assessments of policies and regulations.

Reportedly, EADRAC's activities were interrupted due to a lack of funding. By the time it stopped operating regularly, harmonised standards were formulated, but they were not ratified. EADRAC represents a modest, yet significant achievement in regional cooperation to form a regional market for dairy products and support the development of the sector at the regional level. Besides the issue of funding, the national dairy boards lacked the strength (legal framework, resources and governance arrangements) to carry through EADRAC's agenda.[23] The EAC Secretariat, the International Livestock Research Institute (ILRI) and the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) have supported the functioning of EADRAC and continue to lead activities aimed at delivering on its mandate.

Association for Strengthening Agricultural Research in Eastern and Central Africa

ASARECA is a sub regional organisation[24] bringing together scientists to generate, share and promote knowledge and innovations to solve common agriculture challenges. ASARECA is implementing the Regional Dairy Centre of Excellence (DCoE) project (hosted by Kenya), with the objective to facilitate the formation of a stakeholder dialogue platform on policy issues related to dairy, building also on the achievements under the EADRAC[25]. The DCoE will be supported under the East Africa Agricultural Productivity Programme (EAAPP)[26]. One of the priorities of the EAAPP is the development of: an information system for traceability of animal diseases that can be propagated through trade; standards for milk safety; and incentive-based approaches for improved compliance. ASARECA has provided various types of technical assistance to the EAC and COMESA, including on research, quality and sanitary requirements, as well as integrating the informal milk trade into the formal value chain.

East and Southern Africa Dairy Association

The East and Southern Africa Dairy Association (ESADA) is a private sector association formed in 2004 with the aim to increase trade in African dairy products. ESADA's specific objectives are to: actively lobby for an improved policy environment conducive to regional and international trade; assist members in the promotion and marketing of their products within the region and across the globe; serve as a source of market information[27]. ESADA's country membership spans 10 countries in the region and includes representation from national dairy processors and farmers, NGOs active in the dairy sector, as well as

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[22] ILRI/ASARECA 2011, DCoE Policy Brief No.1.
[23] National dairy boards chaired EADRAC on a rotating basis.
[24] Membership includes 11 countries – Burundi, Democratic Republic of Congo (DRC), Kenya, Ethiopia, Eriteria, Madagascar, Rwanda, South Sudan, Sudan, Tanzania, and Uganda,
[25] ILRI/ASARECA 2011, Supporting excellence in dairying in eastern Africa: priority policy reform agenda, DCoE Policy Paper 1
[26] The EAAPP is a five-year US $ 120 million programme initiated in 2009 to support strengthening and scaling up of Centres of Excellence (CoE) in agricultural research in Ethiopia, Kenya, Tanzania and Uganda. The financial support comes from World Bank's International Development assistance (IDA) concessional loans facility, to enhance agriculture-dependent livelihoods within the Eastern Africa region. The loan aims to finance investments and activities of regional importance to improve productivity of cassava, dairy, rice and wheat with ASARECA convening its regional activities. One of the key tenets of success will be the availability of an efficient policy environment to enable innovation and translation of such innovation into economic goods and services to fuel growth and development in EA region. The purpose of the DCoE is to develop, test and disseminate technologies, knowledge and information (including policies) that will assist in building a globally competitive dairy industry in the region. It is anticipated that other countries in the region, such as Rwanda, will soon join EAAPP.
[27] http://www.agro-oi.com/en/7/30648/fiche-acteur.html#.VXHBqtzogSk

research institutions. Country representation is also reflected in the composition of the ESADA board, and the annual ESADA Dairy Conference is a key flagship event that has contributed to improved stakeholder coordination at regional level, and visibility of the dairy industry as a viable business venture in the region.

Other relevant regional actors

The East African Farmers Federation (EAFF) is a sub regional organisation representing farmers in the Eastern Africa and Horn of Africa regions, and providing a platform to lobby and advocate for their interests, improve livelihoods and support regional integration through agricultural trade development. The EAFF strategic focus for 2012-2020 is along the pillars of regional policy advocacy, creation of knowledge hubs, capacity building, and organisational efficiency. In 2012, EAFF developed a ‘Regional Eastern Africa livestock strategy’ that highlighted the issues affecting livestock development, and proposed specific interventions to improve the productivity and competitiveness of the livestock systems in the region. EAFF was also instrumental in the formulation and passing of the EAC Cooperatives Bill 2014 by the East African Legislative Assembly, a significant step towards defining the role and contribution of cooperatives to the region’s development and providing the framework for their engagement in partnerships across the region.

The Livestock Genetics Society for East Africa, recently formed by dairy stakeholders to promote self-regulation in the dairy breeding industry of the region, will assist the privatization of breeding services and improve coordination in this sub-sector.

Finally, the East Africa Business Council (EABC) was established in 1997 to foster the interests of the private sector in the integration process of the East African Community. EABC derives its membership from national business associations and multinational companies such as Brookside Dairy, and has registered active engagement in policy dialogue at EAC and COMESA levels, including for trade negotiations and in agro-food industry policy and business forums. Regional issues are increasingly relevant to country players, and the EABC is providing companies with the much needed dialogue space to advocate for their interests within the EAC regional integration processes (for instance through the periodic publication ‘EAC Business Climate Index Benchmarking’).

3. Interests, incentives and initiatives of local, regional and international actors

The Eastern African dairy sector is developing rapidly, driven by a multitude of local, regional and international factors, including urbanisation, rising incomes in urban areas and associated changes in the structure of food value chains. Policies too may have had effects on the way the sector operates, also through multi-stakeholder consultations under the national CAADP processes. This section illustrates how particular actors have been driving recent changes in the dairy industry and how private operators have responded to some of the challenges in this sector.

Are domestic interests divergent or convergent?

In Eastern Africa, the dairy industry involves powerful business and political interests. In Kenya, some of the largest processing companies are owned by business and political elites. For example, the family of the current President owns Brookside Dairies, the largest dairy company in the region. In Rwanda, Inyange Industries, the largest dairy processor in the country, is affiliated to the ruling political party. In Uganda, foreign investors in the dairy sector are regularly convened to the Presidential Investors’ Round Table, a platform that meets periodically to discuss issues affecting the business environment in the country.

This dairy industry coexists with a widespread informal sector where smallholder farmers and small-scale traders rely on informal markets and the cottage dairy industry to maintain their livelihoods. Although this informal sector generates employment and contributes significantly to ensuring that low-income rural and peri-urban households are food secure, the large share of raw milk supply the domestic market through informal channels also poses a threat to the viability of medium-size and large dairy processors. The informal supply chain and the formal dairy sector compete both for urban consumers and for inadequate raw milk supplies, especially during dry seasons. This coexistence of both sectors also affects milk quality.

The dairy sector has been rife with tensions between formal and informal actors for some time. In particular, governments have been under pressure to ban sales of raw milk in urban areas. These tensions have often been attributed to the lobbying efforts of large industrial processors who would like to stamp out the informal supply chain with tighter and enforced regulations. Yet, actors of the informal sector have increasingly been receptive to calls for better regulation and higher quality and food safety standards. As part of a shared responsibility approach, they have engaged in processes to ensure compliance with standards and promote the consumption of safe milk. On the side of governments and large processors, greater recognition of the need to adopt inclusive approaches, taking into account the constraints faced by informal actors and the benefits they generate through the marketing chain, notably women.

The dairy industry has responded to the challenge posed by the low purchasing power of milk consumers by adjusting its product offering. In Kenya, Githunguri Dairy, for example, introduced a cheaper brand of packaged milk using poly pouches, which significantly reduced the price and led to an increase in demand. Inyange in Rwanda developed a similar product. Inyange also deployed an innovative fresh milk retail model by setting automated milk dispensers in Kigali's streets, schools and hospitals. Called 'Milk Zones', these dispensers supply an average 20,000 l of milk on a daily basis. In 2013-14, 45 Milk Zones were established in Kigali.

Public and private actors, including both the formal and informal sectors, seem to have reached a consensus on the need to improve milk quality and put in place the conditions for increased milk consumption, which are in their common interests. Traders, industrial processors and regulatory authorities have launched a number of initiatives throughout the region to address the milk quality issue. For example, Inyange promotes good animal husbandry and milk handling practices in Rwanda. The company has been providing credit to milk collection centres for them to acquire better equipment and receive support for the maintenance of cooling tanks. Nestle, through it local activities, has supported quality-based payment systems and provided technical assistance to farmers in the Rift Valley region of Kenya.[28] In Uganda the 2014 National Dairy Event made its central theme about improving milk quality. In Tanzania, innovation platforms were created to support quality improvement in small-scale dairying.

Kenya's Dairy Farmers Self-Help Groups (DFSHGs) emerged in response to the challenges faced by farmers in getting their milk to processors, negotiating remunerable prices with traders and processors, addressing the dysfunctions of traditional cooperatives. In the DFSHG model, farmers aggregate their milk output, transport the milk to buyers and provide to their peers services such as training, input distribution and access to various services providers. In Kenya, the DFSHGs have formed federations so as to earn higher prices for large deliveries of milk to processors. This model is most advanced in Kenya where the number of operational DFSHGs is estimated at 200. This model has not yet become popular in Uganda although mention was made of their existence in some of the milk-producing regions.

Authorities in Kenya and Uganda have increasingly recognised the roles played by traders and other operators in the informal sector and have supported their engagement in the policy dialogue. In Kenya, the Dairy Traders Association (DTA) was officially established in 2009. Since then its membership has grown to more than 3,000 members, representing a total of 14,000 traders and their employees in most of the country.[29] The Government has been fostering partnerships between the Kenya Dairy Board, the Kenya Dairy Processors Association and the DTA to enhance milk quality and the marketing of dairy products.[30] The KDB reported that there has been a marked improvement in milk quality handled and marketed by DTA members.[31]

In Uganda, in 2014, the UNDATA received support from development partners to develop a strategic plan and initiate its engagement and cooperation with the public sector. This traders association, which has around 1,000 registered members countrywide, has since embarked on a campaign to register its members on behalf of the national regulator (DDA). It has also committed to the enforcement of milk quality standards in the supply chain along with the DDA. Ugandan dairy sector stakeholders organised the first National Dairy Conference in 2014 under the theme 'Quality Enhancement in the Dairy Sector for Increased Efficiency, Investment and Exports'. This event was organised jointly by the Government and

[28] ESADA Conference 2014 – presentations.
[29] ILRI/ASARECA 2011, DCoE Policy Brief No.1.
[30] http://www.kdb.co.ke/component/content/article/30-kdb-latest-news/212--partnership-with-milk-processors-and-milk-traders.
[31] ILRI/ASARECA 2011, DCoE Policy Brief No.1.

private actors, with support from development partners, to increase public-private engagement in the policy dialogue and contribute to quality improvement.

Strong international business interests

Brookside Dairies has attracted foreign investments over the recent past, making it the largest multinational dairy processor in the region. The company has attracted financing from a range of investors including: Aureos Capital, a private equity fund that raised money from North American and European investors; Dubai-based private equity firm Abraaj Group, which a 10% stake in 2009; and Danone, a French multinational company that acquired a 40% stake in 2013. Brookside Dairies has used this new capital to acquire local dairies in Kenya (Delamere, SpinKnit and Buzeki Dairies) and to expand its operations in the region. Brookside sets up operational branches in Uganda and Tanzania in 2013, and is planning to establish operations in South Sudan.[32] As part of the company's expansion strategy, Brookside acquired Sameer Agriculture & Livestock Ltd (SALL) in Uganda in March 2015, and plans were being discussed for the acquisition of Inyange Industries in Rwanda and of a 20% stake in Elemtu Dairy in Ethiopia.[33] These investments are being made against the backdrop of growing opportunities in the East African, Central, Southern and West African markets.

Other international corporations have shown their interest in the Eastern African dairy sector. The Nestle Group has been piloting quality improvement schemes in Western Kenya and has plans to enter the dairy industry in Uganda, Rwanda and Tanzania. Uganda too has attracted foreign investments in dairy processing operations with the establishment of Pearl Dairies in 2013 and with an additional USD8m investment by the International Finance Corporation in 2014. A USD25m investment established Amos Dairies in 2014. International business associations such as the Netherlands African Business Council's Dutch Dairy Partners group are very active in the region. International companies supplying equipment and inputs for the dairy industry, including animal breeding material and services, farm equipment, processing equipment and ingredients for dairy products are present in most countries and have begun to set up manufacturing, distribution or services operations.[34]

Strong presence of development partners

Development partners have been very active in the dairy sector in Eastern African given its growth and developmental potential and also due to the commercial interests of the international private sector. In recent years, much support has been provided to develop market linkages between small-scale producers in rural and peri-urban areas and milk collection centres. Those interventions fit in the broader aim to progressively develop formal, structured value chains led by private actors, with the aim to improve productivity, milk quality, food safety and value addition. Development partners have funded activities providing training and certification services to smallholder dairy farmers, milk collection centres and informal milk traders as well as access to equipment and inputs. Some of these activities have led to the emergence of large, market-oriented cooperatives such as the UCCCU in Uganda. They have also supported policy reform processes, institutional strengthening, and school milk programmes. Although donors fund activities in most countries of the region and work closely with public and private stakeholders, there seems to be little coordination at the regional level around a clear strategy. Some of the development partners supporting the dairy sector in Eastern Africa include, for example:

- The Bill and Melinda Gates Foundation (BMGF) is supporting a number of dairy development initiatives in the region. The East Africa Dairy Development (EADD) II Programme (2014-2018) is being implemented in Kenya, Uganda and Tanzania, to improve productivity and increase market access for dairy products. Phase I of the EADD ended in 2012 and covered Rwanda, Uganda and Kenya, and focused on creating Dairy Hubs to increase access to services by dairy farmers. Heifer Project International, TechnoServe), International Livestock Research Institute and ICRAF are the

[32] CTA 2013, Agritrade Executive Update 2013, Dairy sector
[33] Business Africa Daily, 2014; interviews.
[34] Companies with presence in the region include: for milk production inputs and services (veterinary services, breeding services and animal health), ABS TCM Ltd, Highchem/CRI, Coopers/CRV, Twiga Ltd, Worldwide Sires, Coopers, Norbrook, and Ultravetis; for dairy processing and packaging equipment, AITEC, Desley Holdings Kenya Ltd, DSS/Alfa Laval and TetraPack.

implementing parties of the programme. In Ethiopia, the BMGF is supporting the Government to prepare a Livestock Master Plan that will also include the dairy sub-sector.
- SNV Netherlands is one of the most active NGOs in the region's dairy sector. It carried out studies on investment opportunities in the countries (Uganda, Rwanda) and helped organise Agri hubs, national dairy events and learning labs to facilitate information and knowledge exchange in the dairy sector. In Ethiopia, SNV is implementing the EDGET project that aims to improve milk production and productivity, and enhance market access with the establishment of milk collection centres and small-scale processing plants. In Kenya, SNV is supporting the Kenya Market-Led Dairy Programme, which support the growth of medium-size, commercial dairy operations.
- Land O' Lakes, a US cooperative, has been very active in the region's dairy industry for the past decade. It is currently implementing the Rwanda Dairy Competitiveness Program II (2012-2016) focused on increasing the competitiveness of Rwanda's dairy industry and entry into regional markets.

4. Options to strengthen regional cooperation and develop inclusive value chains in the dairy sector

The Eastern African dairy sector has promising potential but the development of inclusive, regional value chains is constrained by several factors. Following the analysis of various factors and actors that affect the performance of the dairy sector in Eastern Africa, this Briefing Note outlines interventions that could address these constraining factors at the regional level.

An institution to structure the regional market

As shown in the first section of this note, there is much potential for intra-regional trade to channel milk surpluses to deficit areas in the region. There are still significant post-harvest losses in producing areas, especially during flush seasons, while large urban centres often rely on imported dairy products from outside the region to satisfy consumption needs, especially during dry seasons. The increasing demand for processed products makes it likely that there will be more opportunities for trade in differentiated products among East African countries. For now, trade opportunities are also limited due to the similarity of products across countries. It is important to recognise that the development of the regional market for dairy products in Eastern Africa will require more than improving the transport infrastructure and lowering policy barriers to trade. Domestic production capabilities (raw milk pricing and qualities dimensions), domestic marketing capabilities and behind-the-border barriers such as taxation also have to be addressed. This aspect is particularly important to improve competitiveness with respect to extra-regional imports.

Several stakeholders see the revival of an institution similar to EADRAC as a pillar for continued regional cooperation, especially to address regulatory issues. This was one of the outcomes of a consultation led by the COMESA Secretariat in 2014. Although harmonised standards for dairy products have been formulated, they have yet to be enacted. The lack of regionally harmonised regulations has made it difficult to trade dairy products. Traders report being asked to show evidence of veterinary licenses and certificate at border crossings in addition to the sanitary and phytosanitary certificates. This regional structure would continue the prior activities of EADRAC, notably the support to national dairy boards and the process towards the harmonisation of regulatory frameworks. This new structure would stimulate the exchange of information and cooperation among the dairy boards and other national agencies. In this way, it would also facilitate the formulation of a regional vision for the development of the dairy sector (in line with the role of national dairy institutions), based on a common understanding of development and business challenges, comparative advantages, and opportunities. This regional vision would serve as a rallying point for various actors, including development partners.

In comparison to the previous arrangement for EADRAC, this regional structure would comprise a broader of actors involved in the definition, implementation and enforcement of regulations and quality standards. Whereas EADRAC was essentially composed of the national dairy boards, the new structure would also convene the bureaus of standards, agencies in charge of food safety and SPS, customs agencies, statistical bureaus, and of course the relevant private sector organisations (including farmers and consumers). It could also perhaps have an explicit role in strengthening the capacities of relevant national agencies. In particular, a revived EADRAC could provide guidance for investments in laboratories and other "soft" infrastructure along regional trade corridors so as to enable the implementation of SPS regulations in the dairy sector and ease cross-border trade flows. Finally, the agenda of this regulatory structure should tackle other markets than dairy product markets. One of the major limiting factors currently is the shortage of quality feed, notably fodder, in milk producing areas. At this level, the regional market can play an important role in moving surplus fodder from surplus to deficit areas. However, regulations, again, create obstacles for this kind of trade. The pooling of resources at the regional level to development new technologies, including improved fodder varieties, is another reason to cooperate at the regional level to pursue the objectives of increased productivity, quality and inclusiveness.

The monitoring of the regional trade regime (that is the CET) for dairy products, of non-tariff measures within East African free trade areas, and of tax policy constitute another important task to coordinate at the regional level. The EAC Customs Union Protocol imposes a zero tariff for dairy products produced in the region. Rwanda, however, continues to impose an 18% VAT on regional imports to protect its infant dairy industry, which according to processors in the region is unfair. In Tanzania, TAMPA, the milk producers association, successfully advocated for the removal of the VAT on locally processed dairy products so as to prop up the competitiveness of a sector that saw the closure of 13 processing plants in recent years. Tanzanian producers in particular face stiff competition from imported dairy products (dairy imports are as much as domestic production in terms of liquid milk), with most of them circumventing the CET due to loopholes and smuggling. In this regional context with exemptions to the free trade area, Uganda eventually introduced an 18% VAT and 6% Withholding Tax on agricultural and manufacturing intermediate goods in 2014. This measure has affected the dairy industry by raising its fixed investment and operational costs. Managing the interactions with the external market factors is a critical element of a regional strategy, especially as local value chains are fragile and on-going developments, including the liberalisation of the EU dairy sector, the rise of emerging economies as agricultural exporters and a global market situation characterised by an oversupply, create strong headwinds for the East African dairy sector.

A better policy framework to support private sector development, technology transfer and skills upgrading

Dairy farm productivity and milk quality gaps are two major constraints in dairy value chains in the region at present. To provide incentives to invest in more performing farm and post-harvest operations, quality-based pricing schemes are seen as a key element of the solution to these twin issues. Such schemes have already been piloted in the region (for example, Nestle's initiative in Western Kenya), with more or less success. More research is needed to understand the factors of success of these schemes and how to scale them up. Scaling up quality-based pricing mechanisms will not only require the involvement of the private sector but also a good policy environment. Improving value addition and product differentiation constitute another (related) set of goals to pursue to improve marketing and trade opportunities. Similarly, opportunities to disseminate knowledge and technologies among countries with different strengths could be supported at the regional level (for example, Kenya is much more advanced than other countries in animal breeding techniques).

Regional marketing strategy

At the moment all the countries in the region are expanding their capacities in producing similar value-added products such UHT milk, yoghurt, butter, ghee, and cheese, thus creating unhealthy price competition in the region. The development of a regional marketing strategy taking into account the comparative advantage of each country could be facilitated at the regional level. This could lead to more product differentiation across countries, and thus more regional trade opportunities. Regional interventions could bring additional support to innovative production and marketing models being developed such as the dairy hubs, cooperatives and the dairy self-help groups (DSHGs).

Sameer is currently implementing a dairy products exchange marketing strategy between Uganda and Kenya that allows consumers a wider choice of products, and also ensure the availability of products on the shelf, irrespective of the season in the two countries. The 'Daima' milk brand is produced by Sameer

Kenya, while ‘Fresh Dairy’ brand is by Sameer Uganda, and the two brands have been introduced on the Ugandan and Kenyan markets at almost the same retail price.

Training and certification

Professional training is generally seen as a priority throughout the region. Training is required at different levels, notably for farmers, traders, cottage processors, and cooperative managers. Much efforts have been deployed to train and certify informal traders, and these should be pursued. For the training of famers and operators of milk collection centres, the model of dairy hubs developed by the EADD in Kenya, Uganda and Tanzania could be scale up.[35] Areas where training could be strengthened include the management of cooperatives. The organisation of dairy farmers in producers associations, or cooperatives, is necessary to achieve sufficient scale, quality and efficiency in marketing raw milk and input/services procurement in the context of widespread small-scale dairy farms. Such producers groups are emerging, notably in western Kenya and southwestern Uganda.

However, there is anecdotal evidence that these cooperatives have difficulties maintaining high-quality standards over time, especially from development partners’ projects come to an end. The training of extension technicians and entrepreneurial cooperative managers, able to advise on or oversee operations, new business development and new product development could improve the performance of the cooperative model. Improving training in general will require to improve the institutions dispensing professional course and conducting applied research. Dairy training in Kenya and Uganda has remained a responsibility of governments with the Dairy Training Institutes. However, the effectiveness of these institutions is mixed, for various reasons.

Increasing access to feed and water

Limited access to feed and water is a common problem for dairy farmers throughout most of the region. Most types of production system are confronted with this double challenge. Besides the issue of standards for feed, fodder, and grass seeds mentioned above, capacity-building activities could target the production and post-harvest handling of fodder, so as to increase the availability, quality and access to feed and fodder. Water management at the farm, community and watershed levels is also widely seen as a priority area requiring capacity building, which could help increase dairy farming productivity while managing this resource in a sustainable way.

A market information system to support decision-making

For market operators and policymakers to make informed decision, a better market information system is needed. Currently, dairy market information is scant. A market information system would provide accurate data on prices, production, and trade flows on a regular basis. It would allow industry stakeholders to generate analysis of sectorial trends and produce projections at the regional level, which would help decision-makers plan policy interventions and investments in milk production, feed production, processing, wholesaling and retailing. A regional market information system would require data standardisation among countries, a task that could be led by the forum aforementioned. Another use of such market information system would be to provide transparency in the pricing of procurement contracts between farmers and processors.

All of the interventions above are specific to the dairy sector (although they may be relevant to other agricultural sub-sectors as well). It should be noted that for these interventions to be effective, other conditions must be present, especially a propitious business environment for agricultural and private sector development in general, including easy access to credit, a proper legislation for cooperatives, adequate transport and energy infrastructure, the absence of barriers to business creation, and a stable macroeconomic environment.

[35] http://www.heifer.org/eadd/index.html

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