# DAIRY MARKET STUDY NORTH RIFT, KENYA

**Market Opportunities for Dutch Dairy Input Suppliers, Service Providers and Investors (ISPIs) in North Rift - Kenya**

**SNV Kenya/Netherlands Development Organisation**
**Kenya Market-led Dairy Programme (Phase 2)**

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# Abbreviations

| | |
|---|---|
| AI | Artificial Insemination |
| AKEFEMA | Association of Kenyan Feed Manufacturers |
| ASAL | Arid and Semi-Arid Land |
| BDEA | Bles Dairies East Africa |
| CBE | Cooling and Bulking Enterprise |
| CET | Common External Tariff |
| DESTEP | Demographic, Economic, Social-Cultural, Technologic, Ecologic & Politic analysis tool |
| DVC | Dairy Value Chain |
| EAC | East African Community |
| EDFA | Eldoret Dairy Farmers Association |
| FAO | Food and Agriculture Organization |
| GDP | Gross Domestic Product |
| GNI | Gross National Income |
| GRS | Genetic Resource Centre |
| HAS | HAS University of Applied Sciences Hertogenbosch (NL) |
| ILRI | International Livestock Research Institute |
| ISPIs | Input Suppliers, Service Providers and Investors |
| KALRO | Kenya Agriculture and Livestock Research Organization |
| KAGRC | Kenya Animal Genetics Resource Centre |
| KDB | Kenya Dairy Board |
| KDFF | Kenya Dairy Farmers Federation |
| KEBS | Kenya Bureau of Standards |
| KES | Kenyan Shilling |
| KMDP | Kenya Market-led Dairy Programme |
| LSF | Large Scale Farmer |
| MSF | Medium Scale Farmer |
| MQ | Main research Question |
| NKCC | New Kenya Cooperative Society |
| PDTC | Practical Dairy Training Centre |
| PUM | PUM/Netherlands Senior Export Programme |
| SACCO | Saving and Credit Cooperative Organization |
| SAP | Structural Adjustment Programme (of IMF and World Bank) |
| SNV | SNV Netherlands Development Organisation |
| SSF | Small Scale Farmer |
| SWOT | Strengths, Weaknesses, Opportunities and Threats analysis tool |
| VAT | Value Added Tax |

# Glossary

| | |
|---|---|
| North Rift Region | The counties Uasin Gishu, Trans Nzoia, Nandi, Elgeyo Marakwet, Baringo, Bungoma, West-Pokot and Turkana located in the Rift Valley Province. |
| Supply Chain | The stakeholders and links that connect the chain of a certain product from inputs on to distribution to consumers (Wiggens & Keats, 2013). |
| Value Chain | The value chain may contain several supply chains as for every single input product a separate supply chain can be described. In addition to the supply chain the value chain also includes the services and economic environment for the production of a certain product (Wiggens & Keats, 2013). |
| Cooperatives | Here defined as farmer groups or organizations in which farmers are united to meet their common economic and social needs. These are "true" cooperatives as per the Kenya Cooperative Act and farmer groups that have registered as public companies (> 50 shareholders) and fall under the Companies Act. |
| 1 USD | ≈ 104 KES (November, 2017) |
| 1 Euro | ≈ 121 KES (November, 2017) |

# 1. Introduction

This document is a revised and updated version of the research report by Janneke Blonk and Naomi Paas for attainment of their BSc degree at HAS University of Applied Sciences den Bosch (HAS), International Food and Agribusiness Course. This revised report was compiled by Janneke Blonk with support from Tijs van Balen of SNV's Eldoret Team under the Kenya Market-led Dairy Programme, and two interns Lavender Simiyu and Timothy Kiprono Kiptoo.

SNV Netherlands Development Organisation is an international not-for-profit development organization working in 36 countries. SNV Kenya is implementing the Kenyan Market-led Dairy Programme (KMDP) funded by the Netherlands Embassy in Nairobi. The project goal of KMDP is to enhance the competitiveness of the Kenyan dairy sector, to contribute to an improved business and investment climate for local and international private sector, and to facilitate Dutch companies - Input Suppliers, Service Providers and Investors (ISPIs) - to start business in Kenya and/or expand market share. This is expected to contribute to fast-track transfer of knowledge, skills, technology and innovations, and cross border investments into Kenya, and through the involvement of private sector a more sustainable manner of developing the dairy industry in Kenya.

In this context KMDP-2 (October 2016 – June 2019), in collaboration with HAS Training and Consultancy and University of Applied Science, embarked on a market study for the North Rift region of Kenya. This is one of the key dairy production areas in the country, with ample opportunity and ambition for growth and expansion of dairy farming due to the average size of landholdings and favorable agro-ecological conditions.

Part 1 of the market study was carried out during the period 1 March – 1 June 2017 and focused on a sample of Medium and Large Scale Farms (MSFs and LSFs) in three counties in North Rift, viz. Uasin Gishu, Trans Nzoia and Nandi, where most of the medium and large dairy farms in North Rift are located. The MSFs as per the research definition produce between 100-600 kg of milk per day. LSFs are defined as farms with a daily milk production of 600 kg or more daily. Part 2 of this study was implemented from July – Sept. 2017 and zoomed in on dairy cooperatives in the North Rift counties, viz. Uasin Gishu, Trans Nzoia, Nandi, Baringo, Bungoma, Elgeyo-Marakwet, Kakamega, and West-Pokot, that collect and market milk and provide services for their members, who are also considered as a "market" for Dutch ISPIs.

These MSFs and LSFs on one hand, and the dairy cooperatives (and milk processors) on the other hand, are considered as the main market segments and entry points for Dutch ISPIs.

The market potential and assessment was addressed through zooming in on seven main themes each offering business opportunities for different type of ISPIs and products and services. Animal health and veterinary products were left out in this study. These themes are:

1. Feed, Fodder, Farm Machinery and Agricultural Contracting Services
2. Milking and Cooling Equipment, Milk Processing Equipment
3. Herd Improvement (genetics and young stock)
4. Herd and Farm Management Software, ERP Systems
5. Cow House Design and Interiors
6. Practical Training and Education, Dairy Advisory
7. Finance and Fiscal Policies


# 2. Methodology

The motivation for this research was for KMDP to stimulate mutually beneficial business linkages between the Dutch and the Kenyan dairy sector, particularly in the North Rift Region. A continuation of the market study is foreseen in the other high potential dairy production areas in Kenya in the course of 2017 and/or first half of 2018. The main research question was:

***"How can the input and output needs of the dairy sector stakeholders in the North Rift region be met by Dutch ISPIs?"***

In the North Rift the research focused mainly on MSFs and LSFs and on smallholder owned and managed dairy cooperative societies and - secondary - on processors' needs. Several research instruments were combined for the market study:

### *Literature Research/Desk Study*

Sector studies and reports, both international and local.

### *Field Research: Quick Scans and Deep scans*

The Quick Scan was conducted for thirteen MSFs and LSFs in Nakuru County, and 83 cooperatives in Uasin Gishu, Trans Nzoia, Nandi, Baringo, Bungoma, Elgeyo-Marakwet, Kakamega, and West-Pokot (see Annex 2). The Deep Scans are interviews based on elaborate questionnaires for 57 MSFs and LSFs and 44 Cooperatives in North Rift region (for the list of questions see Annex 6 for the MSFs LSFs Questionnaire and Annex 7 for the Cooperative Questionnaire). In The Netherlands interviews with eleven ISPIs were conducted (Annex 3).

### *Geographical scope*

The research for North Rift focused on three counties, viz. Usain Gishu, Trans Nzoia and Nandi, which form the main milk producing counties in the North Rift. However with a spill over to MSFs and LSFs and the main dairy cooperatives in Elgeyo Marakwet, Baringo, Bungoma, West-Pokot and Kakamega due to the proximity to the three core counties. Although Kakamega County is not part of North Rift, the dairy cooperatives in Kakamega have interwoven connections and linkages with dairy farms located in North Rift, and vice versa.

### *Limiting factors*

Apart from limited time and human resources, the low reliability and availability of accurate data in Kenya was the main limiting factor.

# 3. Kenya and the Dairy Sector Profile

## 3.1 Political and Economy

Kenya is located in the East African Community and got independence in 1963. Kenya has currently 48 million inhabitants, and this number is expected to double to 85 million in 2050 at current population growth rates, with > 50% of people living in urban centers. Over 50% of current population is below the age of thirty years. Kenya is a multi-party state with an elected President. Elections are held every five years, however power relations are largely based on tribal divisions, representation and coalitions. Kenya has a growing middle class due to economic growth rates in GDP of 5-6% per year over the past one and a half decade.

The private sector is the driver of the economy. The agricultural sector is accountable for 33% of GDP and dairy for 4%. Dairy is the largest agricultural sub sector in terms of income generated and employment creation, and therefore bigger than tea, coffee or flowers and horticulture.

Due to its steady economic growth, Kenya has climbed to the level of lower middle income country and is the economic hub for the East African region, with moderate to good infrastructure as regards to roads, rail, electricity, water supply, telecommunication and internet, education and health care. The headquarters for Sub Sahara Africa or East Africa of many international organizations and multi-nationals are based in Kenya. With the exception of the aftermath of the 2007 elections, Kenya has been a relatively politically stable democracy compared to other countries is Sub Sahara Africa.

## Key Figures Kenyan Demography & Dairy Sector

| | |
|---|---|
| **Land size** | : 580,367 km2 (14 x Netherlands) |
| **Population** | : 2000: 31 million; 2015: 46 million; 2050: 85 million |
| **Distribution** | : 80% population on 20% of land space |
| **Urbanisation** | : 4.3% annually; 2015: 27% in urban centre; 2050: 50% |
| **Nairobi** | : 2015: 3.5 million |
| **Middle Class** | : 2014: 8% lower middle class and middle class; 2030: 18% |
| **Dairy pockets** | : Kenyan highlands (> 1,400 metres), good temp., soils and rainfall |
| **Milk production** | : 3.9 billion litres cow milk (2014) |
| **Consumption** | : 115 litres per capita per year |
| **Nr of smallholders** | : Est. 1 mln smallholders with (average) 1-5 dairy cows (cross/high breeds) |
| **Nr of MSFs/LSFs** | : Est. 2-4,000 farms with > 25 dairy cows |
| **Nr of dairy cows** | : 3.8 million high and cross breeds (2014) |
| **Nr of dairy coops** | : > 200 (collection, bulking and marketing) |
| **Nr of processors** | : 28 |
| **Big Five** | : Brookside, NKCC, Githunguri, Meru Union, Sameer Daima (90%) |
| **Milk processed** | : 2001: 152 million litres; 2016: 625 million litres |
| **Milk marketed** | : 55% of total production; ca. 70% as raw milk and 30% processed |
| **Raw milk price** | : Formal market 2009: KES 2017: KES 38 farm gate |

## 3.2 Kenyan Dairy Industry

Kenya's dairy industry is private sector driven. The private sector took over after the collapse of Kenya Cooperative Creameries (KCC), later the New Kenya Cooperative Creameries (NKCC), and the withdrawal of government services and input supply systems in the 1990s. The latter was caused by the Structural Adjustment Programme (SAP) of IMF and World Bank.

After collapse of the sector in the nineties it started showing impressive growth figures again from 2000 onwards. The high potential dairy areas are concentrated in Kenya's highlands (1,400 metres and above) which have very conducive climate for dairy cows. The main milk producing areas are around Eldoret (Uasin Gishu, Trans Nzoia, Nandi, Bomet Counties), Nakuru (Nakuru and Nyandarua Counties), Kinangop area, Limuru and Kiambu areas near Nairobi and the Mount Kenya belt running from Nyeri to Kirinyaga, Embu and Meru.

Depending on sizes of landholdings different farming systems are present, viz. free grazing, semi zero grazing and zero grazing. Soils and climate are very suitable for production of quality (preserved) fodders and for pastures, depending on available skills, knowledge and technology, which is however abundantly lacking. Hence the fodder subsector is underdeveloped, in spite of huge sales volumes of (low quality) hay.

Yet, the sector is dynamic with high growth figures of marketed milk and investments by farmers, dairy societies and processors, in raw milk production, collection, the cold chain and processing of pasteurized milk, long-life products (ESL, UHT), yoghurts, cheese, butter and milk powder. Average raw milk prices paid to farmers by cooperatives and processors have increased from KES 28 to KES 38 per kg over the past 7-8 years. However, there is significant fluctuation in prices per season (dry and wet season) and depending on distance to the main urban centres and processing sites. Farmers or dairy cooperatives who sell to traders who operate in the raw milk market, or sell directly to consumers, get a higher price per kg of milk. This can reach KES 60 per kg in milk deficit areas.

Currently the sector provides income and employment for over 1.5 million people across the dairy value chain: farmers and their family members (male and female), transporters, traders and vendors, employees of dairy societies, milk processors, input and service providers, retailers and distributers. In terms of nutrition and food security, milk is consumed by almost all Kenyans on a daily basis with an average annual per capita consumption of 115 litres milk equivalents (KDB, 2012).

Total milk production was according to Kenya Dairy Board 5.2 billion litres from all livestock in 2011. Kenya Bureau of Statistics 2009 Census estimated 3.8 billion kg from cows, and Bulletin World Dairy Situation 2016 estimates 3.9 billion kg from cows in 2014. Circa 80% of this is produced by smallholders the Bulletin World Dairy Association, 2016 mentions a number of 1 million dairy farms. However,

knowing that most rural households keep a cow for home consumption of raw milk, this number may be an overestimation as regards to the number of smallholders who have commercialised dairy and see it as a core business. The same report refers to a number of 5.9 million dairy cows in 2014 (high and mixed breeds) compared to 11.6 million in the Netherlands (2012, FAO).

The smallholder profile of the sector poses great challenges on the industry in terms of skills development and transfer, cost of production, ability and willingness to invest in enhanced dairy production, collection and chilling, seasonal fluctuations in supply, and milk quality. There is however a fast-growing segment of entre-preneurial smallholders and MSFs and LSFs who invest in modern commercial dairy production. An estimated 2-4,000 dairy farms have more than 20-25 cows. Reliable data on numbers of medium and large-scale dairy farms (including a clear definition of an MSF and LSF in terms of herd size, milk production or land area) are however lacking.

Kenya has currently 28 active milk processors (this excludes mini dairies with batch pasteurizers and cottage industry yoghurt production, ATM dispensers) of which the largest are Brookside, New KCC, Githunguri, Sameer/Daima and Meru Central Dairy Farmers Cooperative Union, who together process circa 85% of the 1.7 million kilos of milk that was processed daily in 2015. Market leader is Brookside that applies a strategy of taking over other brands in and outside Kenya to increase market share, with the ambitions to become a regional player. In 2014 the French dairy giant Danone took a 40% shareholding in Brookside. Other international players have also shown interest in the Kenyan dairy sector, including Nestle, Parmalat and FrieslandCampina from the Netherlands.

The market for processed milk and dairy products saw a steady growth over the past fifteen years. In 2001 annual milk intake by processors was 152 million kg, in 2009 it was 406 million kg, and in 2015 601 million kg and 2016 it was 625 million kg. Still an estimated 60-70% of all milk that is marketed is sold through the informal sector as raw milk. This creates lack of level playing field for the formal market and an impediment for its growth. A recent development is the emergence of milk dispensing machines (milk ATMs) in urban centres which are mostly operated by traders and shopkeepers, who may pasteurize the milk at a fee per litre through a processor with over-capacity in the factory. Kenya Dairy Board has over the past three to four years licensed more than 600 milk-ATMs but there is hardly any control on quality of milk dispensed through these units.

The industry's growth and competitiveness are constrained by low productivity at farm level, seasonality in milk production, milk quality issues, a huge knowledge and skills gap and lack of inclusiveness in the dairy value chain. Prognosis for the next 10-20 years show that demand for milk and dairy products will outstrip (local) supply under the current production systems and low productivity levels. This is spurred also by growing population, from 31 million people in 2000 to 46 million

in 2015 up to 85 million 2050, and fast urbanisation, 4.3% per year, 2015: 27% of population in urban areas, 2050: 50% in urban areas, and a growing middle class and lower middle class, 2014: 8% of households and in 2030: 18% of households (Moody's).

Population growth, growing middle class and urbanisation are important drivers for growth in demand and consumption of milk and dairy products. As of today, the sector is protected by an import tariff of 60% for milk and dairy products, which in the long run may not lead to a competitive sector and long-term sustainability.

The policies of the government of Kenya and its priorities with regard to economic development, agriculture and food security are framed in a number of documents, of which Vision 2030 brings together Kenya's overall macro-economic strategies and ambitions. The government acknowledges that the dairy sector is a key agricultural subsector, is private sector-led, and needs to transition to a higher level of competitiveness for sustained growth. The ambition is to increase both local production and consumption of milk and dairy products, and to realize a significant growth in exports.

The government's support to the dairy industry focuses on conducive fiscal policies (e.g. zero rating of imported dairy equipment and VAT exemption on loose processed milk), and protectionist measures through the imposition of a duty of 60% on imported milk and dairy products. Government involvement and investment in dairy extension & training and in-service provision have been reduced to a bare minimum since the World Bank's Structural Adjustment Programmes in the 1990s. With the liberalisation of the industry the private sector has not been able to fill this gap.

With the devolution of power and the installation of country governments, there are emerging opportunities for dairy through investments by counties. In over twenty counties dairy has been identified as a key economic sector, with some counties making direct investment in dairy through provision of dairy equipment (processing, chilling, AI) and investments in school milk programmes. These interventions are usually not market-led but politically motivated. The run the risk of being unsustainable and causing market distortion.

# Strengths and Weaknesses of the Kenyan Dairy Sector

**Key strengths:**

- Robust private sector-driven processing industry and investments and growing interest by international players (Danone, FrieslandCampina, Nestle).
- Nation-wide availability and high variety of dairy products for all consumer groups.
- Ongoing investments in value added products incl. long-shelf life milk and milk powder.
- Growing demand for processed milk and milk products due to a growing urban middle class and an emerging dairy export sector.
- 365 days/year milk collection by traders, dairy societies and processors in all high potential dairy production areas from hundreds of thousands of smallholders.
- Emerging segment of commercial dairy farmers with ability to invest and innovate.
- Wide distribution network and good access to commercial input and service providers.
- Conducive fiscal policies and status of key economic sector at macro level.
- Available dairy genetic base that can be improved upon with proper breeding policies.

**Key weaknesses:**

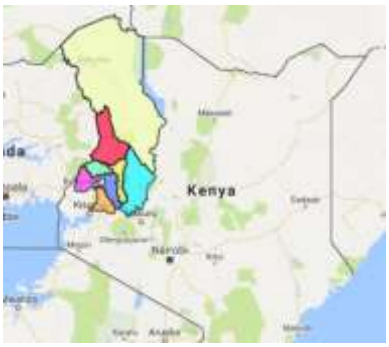
- Low skills and knowledge level of almost all farmers (small, medium and large scale).
- Low level of commercialization by smallholders (dairy not core business).
- High cost and seasonality of raw milk production due to low ability/skills to produce and preserve quality fodder.
- Inefficient & high cost of milk collection & cold chain (hence: high cost/low quality of milk at factory gate).
- Lack of loyalty between value chain actors and high fragmentation.
- Lack of credibility of input suppliers and services providers ("pushing pro-ducts").
- Large raw milk market and lack of level playing field for the formal sector.
- Oligopolistic nature of the processing industry (Brookside acquiring other brands).
- Lack of common vision to steer the dairy industry into a more sustainable growth path.
- Ineffective sector regulation: policies are not enforced on the ground.

# 4. North Rift Region and the Dairy Value Chain

As the largest of eight provinces in Kenya, the Rift Valley consists of North Rift and South Rift. North Rift is considered as the leading dairy region in Kenya, as the highlands provide adequate rainfall for dairy farming and agriculture. The area has received considerable inputs and support from dairy development programs and projects, both public and private.

Blue: North Rift Pink: South Rift


Counties in North Rift




Trans Nzoia, Uasin Gishu, Nandi

## 4.1 The North Rift

The North Rift includes the counties Uasin Gishu, Trans Nzoia, Nandi, West-Pokot, Baringo, Elgeyo Marakwet and Turkana. This study concentrates, for MSFs and LSFs, on three counties in North Rift, viz. Uasin Gishu (3,327 km2), Trans Nzoia (2,496 km2) and Nandi (2,884 km2), which are the counties with the highest potential and presence of dairy, this covers an area of 8,707 km2 or 20% of the Netherlands. The market study concentrates, for dairy cooperatives, on eight counties viz. Uasin Gishu, Trans Nzoia, Nandi, Baringo (8,646 km2), Bungoma (2,207 km2), Elgeyo Marakwet (3,050 km2), Kakamega (1,395 km2), and West-Pokot (8,418 km2). In total this covers an area of 32,423 km2 or 78% of the Netherlands. The area is predominantly rural with the dominant urban center being Eldoret Town, one of the fastest growing urban settlements in Kenya.
The Rift Valley is home to more than ten million people. The large population is associated with the high agricultural potential, attracting people from other regions where farming land is limited and population densities are higher. The North Rift community consists of several tribes, with the Nandi people as indigenous, although the Kalenjin communities have the highest population share (65%).
All counties have high population growth rates (2009-17): Uasin Gishu 36%, Trans Nzoia 34% and Nandi 28%. To compare: population growth in the Netherlands between 2009 and 2017 was 2%.

Table 1 show the labour force of 2009 and 2017 in comparison to the total population of 2009 and 2017, and the share the labour force has in the total population. Although that the population has a growth between 36% and 28% the composition of the labour force stayed similar in the projections made (Uasin Gishu; Trans Nzoia; Nandi County, 2013).

| | Labour Force '09 | Total Population '09 | Total % in '09 | Labour Force '17 | Total Population '17 | Total % in '17 |
|---|---|---|---|---|---|---|
| **Uasin Gishu** | 497,000 | 895,000 | 56% | 674,663 | 1,210.000 | 56% |
| **Trans Nzoia** | 411,000 | 820,000 | 50% | 553,000 | 1,100.000 | 50% |
| **Nandi** | 387,000 | 750,000 | 52% | 496,000 | 965,000 | 51% |

*Table 1. Labour force and total population 2009/2017*

## 4.2 Dairy Value Chain Structure in the North Rift Region

### *Agro ecological potential*

Dairy production is predominant in North Rift with an estimated production of 1.0 billion kg of milk per year (total Kenya 3.9 billion). The climate and soils are very conducive for dairy and production of fodders like maize and grass, and in fodder sorghum as a break crop, although soils are characterized by low Ph. (4.0-5.0). Altitudes range from 1,000 to 3,000 meters above sea level and temperatures vary from 9 Celsius during the night to 28 Celsius during the day. Rainfall is between 29 mm and 140 mm per year; the Region has two rainy season that stretch from March till May and from November till December.

### *Farming and production systems*

Dairy farming in North Rift is mostly done in semi-zero grazing systems, with access to pastures and generally enough land to grow fodder crops on own or leased land. Like elsewhere in Kenya the majority of milk produced is from smallholder farmers who are organized in dairy cooperative societies that collect and market members' milk. Average farm sizes of these smallholders is 5 to 10 acres and herd size ranges from 5 to 20 cows, with total milk production for the majority of smallholders not exceeding 20 kg per day, of which part is used for home consumption and calves and the balance is sold to neighbors, dairy cooperatives or hawkers. Smallholder owned and managed dairy cooperatives or public companies, and their umbrella organizations (federations, union and associations), collect milk from their members, chill and sell the milk to milk processors (formal sector) and milk bars (informal sector). They also provide inputs and services to their members (e.g. bulk purchase and sales of animal feeds, veterinary products, AI services, credit).

The market study identified 90 (active) dairy societies in the entire North Rift except in Turkana. These dairy cooperatives have a total membership of approx. 95,000 and together they collect on average 113,770,000 kg of raw milk per year or 312,000 per day.

North Rift has the largest number of MSFs and LSFs in Kenya, including dairy farms, with also a higher level of farm mechanization and capitalization than elsewhere in Kenya. The majority of farms practice semi-zero grazing using available pastures in a rotational system. MSFs and LSFs are usually not a member of the

"smallholder" owned dairy societies referred to above, but sell milk directly to processors or end-consumers (schools, milk bars, ATMs).
In the market study a total 57 MSFs and LSFs farms were identified, interviewed and screened on their farm characteristics and needs. This group of dairy farmers is fast growing. MSFs and LSFs have sufficient land to grow and ability to invest considerable amounts of cash in for example the herd, cow house, milking and cooling equipment, farm machinery and herd management software. Often the owners are (self-) employed in other sectors and invest income and profits from other businesses in dairy. The farm is in that case run by a farm manager. For the sake of this study a farm was considered to qualify as an MSF in case daily milk production was on average between 100 – 600 kg per day. LSFs were defined as farms with a milk production of 600 kg per day or more. The study listed 45 MSFs and twelve LSFs in Uasin Gishu, Trans Nzoia and Nandi (NB: included are also LSFs near Nakuru along the Eldoret – Nakuru corridor).

### *Input suppliers and service providers*

The majority of the smallholder dairy farms in North Rift are still low-input, low-output. However, the more entrepreneurial smallholders that are in dairy as core business - and especially the more MSFs and LSFs that are in dairy as core business – who buy a variety of inputs and use service providers as per the list below. Hence a wide distribution network exists of so called agro vets or agro dealers, mainly trading in dairy meals, veterinary products, seeds, fertilizers, chemicals and genetics (AI). In general the quality of products and the knowledge level of the supplier and the buyer on the use of the product or the service is low. The same applies to after sales services and the needs as regards maintenance and repair.

The number of commercial dairy farms in need of quality inputs and services that go hand in hand with knowledge transfer, is growing. The private sector is the driver of this process. Unlike in the past where many inputs and services were provided by the Government at subsidized rates. Off late with the emergence of county governments, some of these counties have engaged in in free or subsidized government services, products and equipment, although this has been erratic and without a long term visions and financing model, this leads to market distortion.
Although veterinary and health services and products are of importance, they are not within the scope of this research. Farm recording and herd management, dairy advisory and cow house design are upcoming services where Dutch ISPIs off late have shown interest to enter and develop market share in Kenya.

### *Milk marketing*

The volume of marketed milk through informal channels is estimated at 70% (Bett, 2017). Many MSFs and LSFs also sell part of their milk through the informal channel. There are major differences in milk prices, depending on season and marketing and sales channel (processor, cooperative society or directly as raw milk to hotels or restaurants, schools, milk bars, and/or milk dispensers (pasteurized)). The overall average milk price paid to farmers (smallholders and MSFs and LSFs)

by cooperative societies or processors is KES 30/kg in the rainy season and KES 40 peak in the dry season. MSFs and LSFs who sell directly to processors and deliver the milk at factory gate fetch 3-5 KES/kg more. If milk is sold directly to consumers (schools, restaurants, milk bars) or through ATMs prices ranging from KES 50-60 are being paid. 26% of MSFs and LSFs considered unstable milk prices as one of their biggest threats. The study also revealed that only 7% of the farmers supplying milk to the formal sector get payed based on quality.

### *Processors*

The major processors that collect and/or process milk in North Rift are NKCC, Brookside, Daima Sameer, Doinyo Lasso's and Kabiyanga Dairies, and off late also Bio Foods and Happy Cow Ltd. They buy milk from dairy cooperatives, traders and directly from farmers (mainly MSFs and LSFs). NKCC has a plant in Eldoret that has an intake and processing capacity of approx. 500,000 kg per day. However, only 30% of this capacity is used. It also produces milk powder at this location. Brookside and Daija have collection and bulking centers in North Rift but they process this milk collected in Nairobi. Doinyo Lessos and Kabiyanga are two small processors (< 50,000 kg per day) in Eldoret respectively Kericho. Happy Cow Ltd is based in Nakuru and Bio Foods in Nairobi. Unlike dairy cooperatives, the milk processors generally do not at all invest in the supply chain and hence lack any significant and effective programs, that support dairy farmers through training and extension or quality controlled input and service provision. This is one of the reasons that productivity at farm level remains to be low, and since most processors "buy on volume" (except for Bio Foods) the same applies to milk quality.

## 4.3 Market Segments and Themes for Dutch ISPIs

Based on the description of the structure of the dairy sector in North Rift and the main actors in the dairy value chain, the market study identified two segments of potential business-to-business (B2B) clients:

a) MSFs and LSFs; this group of entrepreneurial commercial farmers is increasing rapidly and are fully commercialized.
b) Smallholder owned and managed dairy cooperatives (or public companies) and milk processors present in the Region.

In the next chapters, the market opportunities within the following seven themes are described and analyzed for these two market segments:

1. Feed, Fodder, Farm Machinery and Agricultural Contracting Services
2. Milking and Cooling Equipment, Milk Processing Equipment
3. Herd Improvement (genetics and young stock)
4. Herd and Farm Management Software, ERP Systems
5. Cow House Design and Interiors
6. Practical Training and Education, Dairy Advisory
7. Finance and Fiscal Policies

# 5. North Rift Market Segments and Dutch ISPIs

The market study identified two major dairy market segments for Dutch ISPIs:

- Medium and Large Scale Farms (MSFs & LSFs)
- Dairy societies

MSFs are defined in this study as dairy farmers with an average daily milk production between 100-600 kg. LSFs produce over 600 kg/day. Dairy societies are (mainly) smallholder farmer organisations that collect, bulk and market milk from and for their members. They are either cooperatives registered under de Cooperative Act or public companies (more than 50 shareholders) registered under the Companies Act. Hereinafter we use the term "cooperative" for both the cooperative and public company model.

## 5.1 Sampled MSFs/LSFs and Dairy Societies and Total Numbers

There are no data available on total number of MSFs and LSFs in North Rift. The study used various sources to get a sampling for drawing a list of MSFs/LSFs for deep scanning (e.g. Eldoret Dairy Farmers Association, dairy societies' member-ship and milk procurement lists, information from milk processors, client list SNV). The study administered a deep scan of 45 MSFs and 12 LSFs in the three main dairy counties in North Rift, viz. Uasin Gishu, Trans Nzoia and Nandi (see par. 5.1). However the total number of MSFs and LSFs in the entire North Rift Region is higher but hard to determine. One method that can be used is to extrapolate data found for MSFs/LSFs that were deep scanned as regards "cooperative member-ship" vis-a-vis" data at cooperative level of number of MSFs and LSFs. The total number of active cooperatives in North Rift is 90 of which 44 were deep scanned. This gives estimates for total number of MSFs/LSFs as in the Box below:

MSFs deep scanned: 22% is a member of a cooperative (factor 4.5)
Coops deep scanned (44): 95 MSFs found in 44 cooperatives (90 coops = 90/44 x 95 = 194)
Total MSFs in North Rift: 194 x 100/22 = 882

*Note: this number seems on the high side (there might be double counting involved as some MSFs deliver milk to more than one dairy cooperative), but it is not impossible, considering that average land size and herd size in North Rift is significant – also for smallholders - and it harbors many livestock keepers in semi-extensive mixed dairy and mixed beef free grazing farming systems. For Dutch ISPIs in dairy, only those MSFs from a market who are practicing high input intensified dairy farming systems. The majority of these are concentrated in Uasin Gishu and Nandi Counties and in the Kitale District of Trans Nzoia County, where the deep scans took place.*

LSFs deep/quick scanned: 8.5% is a member of a cooperative (factor 12)
Cooperatives deep scanned (44): 7 LSFs found in 44 cooperatives (90 coops = 90/44 x 7 = 14)
Total LSFs in North Rift: 14 x 100/8.5 = 165

*Note: This number seems to be inflated, which can be caused by "double counting" (see above) and by the small sample size of deep scanned farms. Also most LSFs are in three counties where deep scans were done. As of November 2017 the market study team had identified 45 LSFs in the North Rift Region, which is still considerably more than those deep scanned LSFs and those found through the deep scanned cooperatives.*

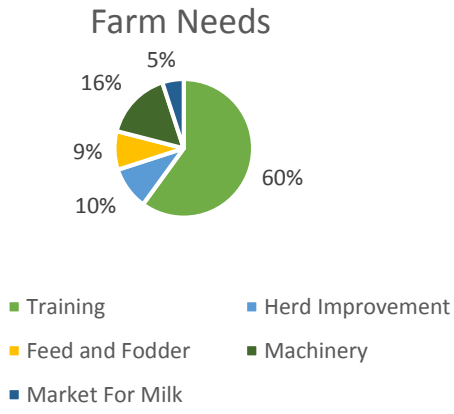
| Deep scanned Cooperatives | | Deep scanned MSFs and LSFs | |
|---|---|---|---|
| Dairy societies/coops nationwide | > 300 | Deep scan | 57 MSFs and LSFs |
| Active dairy coops in North Rift | 90 | MSFs | 45 (100 - 599 kg/day) |
| Quick Scan | 83 | LSFs | 12 (> 600 kg/day) |
| Deep Scan | 44 | Quick Scan | 7 MSFs and LSFs (Nakuru) |
| Members (of 83 QS dairy coops) | 87,000 | | |
| Active Members (of 83 QS dairy coops) | 32,000 | | |
| Total Members North Rift (estimated) | 95,000 | | |
| Total Active Members North Rift (estimated) | 35,000 | | |
| Active MSFs (in 44 coops) | 95 | | |
| Active LSFs (in 44 coops) | 7 | | |

## 5.2 Market Segment 1: Deep Scan Medium and Large Scale Farmers

Out of the 57 deep scanned MSFs/LSFs in Uasin Gishu, Trans Nzoia and Nandi, 45 farms produce between 100 and 600 kg per day (MSFs). 12 farms (LSFs) have an average production above 600 kg/day.

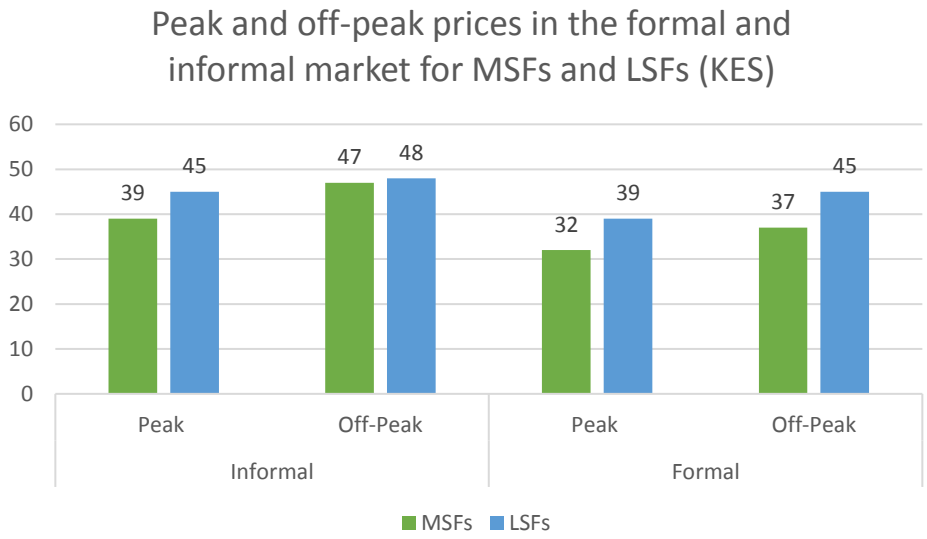
The average peak season production is 550 kg/day for all farms (rainy season: 122 days per year), and 400 kg off-peak (dry season: 243 days per year), meaning that there is an overall average of 450 kg for the 57 farms. This production is with an average herd size of 116 animals, of which 37 lactating. The rest are dry cows or young stock. The MSFs and LSFs had an average land size of 502 acre, of which 148 acres for dairy. The average cost price of the nine MSFs and LSFs who are aware of this, was KES 29.

The market study showed the key farm needs and interests of MSFs and LSFs. 60% mentioned training and practical skills development as their key need, followed by machinery (16%), followed by improving herd (10%) and feed and fodder (9%), and stable market for their milk (5%).




It is estimated that more than 70% of the milk produced goes to the informal market. Out of the 57 MSFs/LSFs 51% produce for the formal market, and 33% only for the informal market; 16% does both. The informal market has a higher payout per kg of milk than the formal market. The overall price range for farmers is between KES 35 and KES 49 per kg. Of the MSFs and LSFs that produce all or part of their milk for the formal market, 32% are paid on quality, the rest on volumes only.

| | Formal Marketing | Informal Marketing | Both |
|---|---|---|---|
| Out of 57 farms: | 29 MSFs/LSFs | 19 MSFs/LSFs | 9 MSFs/LSFs |
| % | 51% | 33% | 16% |
| Range overall price | KES 35 - 43 | KES 37 - 49 | n/a |




Milk prices are seasonal (peak/off-peak: rainy season/dry season) and volume based. They also differ between the formal and informal market.

### *MSFs and LSFs: Averages for Land and Herd Size and Milk Production*

The market study conducted 57 deep scans in North Rift. Average number of cows, milk per day and size of land are shown below.

| Overall Averages | | | |
|---|---|---|---|
| **MSFs** | | **LSFs** | |
| Land size | 306 Acre | Land size | 1,127 Acre |
| Land size for dairy | 124 Acre | Land size for dairy | 224 Acre |
| Peak production | 304 kg Daily | Peak production | 1,469 kg Daily |
| Off peak production | 215 kg Daily | Off peak production | 1,074 kg Daily |
| Average production | 245 kg Daily | Average production | 1,206 kg Daily |
| Herd size | 71 Cows | Herd size | 284 Cows |
| Lactating herd size | 25 Cows | Lactating herd size | 84 Cows |

## *Uasin Gishu County*

The market study conducted 28 deep scans in Uasin Gishu County (see page 20 for the listing of farms). Averages land size, herd size and of daily milk production was as follows.

| **Uasin Gishu Averages** | | | |
|---|---|---|---|
| MSFs | | LSFs | |
| Land size | 404 Acre | Land size | 306 Acre |
| Land size for dairy | 121 Acre | Land size for dairy | 113 Acre |
| Peak production | 309 kg Daily | Peak production | 1,250 kg Daily |
| Off peak production | 233 kg Daily | Off peak production | 1,083 kg Daily |
| Average production | 259 kg Daily | Average production | 1,139 kg Daily |
| Herd size | 72 Cows | Herd size | 213 Cows |
| Lactating herd size | 23 Cows | Lactating herd size | 68 Cows |

**MSFs in Uasin Gishu**

| **Name** | **Land size** | **Average Production** | **Herd size** | **Lactating herd** |
|---|---|---|---|---|
| Peris Simam Farm | 80 | 83 | 50 | 13 |
| Simam Farm | 120 | 533 | 83 | 45 |
| Lacata Farm | 20 | 117 | 30 | 10 |
| Plateau Country Dairies | 40 | 447 | 42 | 27 |
| Willens Farm | 50 | 420 | 58 | 18 |
| Komool Farm | 30 | 190 | 40 | 16 |
| Eld Polytechnic Farm | 100 | 280 | 58 | 20 |
| Oitos Farm | 30 | 190 | 46 | 16 |
| DL Farm | 1,800 | 313 | 140 | 30 |
| Samo Farm | 700 | 250 | 100 | 43 |
| Illula Farm | 106 | 309 | 84 | 29 |
| Chumo Farm | 52 | 198 | 40 | 13 |
| Belekenya Farm | 400 | 300 | 125 | 32 |
| Nairobi Ndogo Farm | 36 | 267 | 33 | 18 |
| Kibulgon Farm | 700 | 101 | 120 | 26 |
| Yegen Farm | 4,000 | 185 | 100 | 15 |
| Pinedale Farm | 80 | 93 | 63 | 27 |
| Joseph Farm | 8 | 115 | 35 | 11 |
| Kabarchaket Farm | 18 | 91 | 11 | 7 |
| University of Eldoret | 435 | 567 | 187 | 50 |
| Pioneer Farm | 40 | 80 | 24 | 13 |
| Sakong Farm | 50 | 560 | 110 | 30 |

| LSFs in Uasin Gishu | | | | |
|---|---|---|---|---|
| **Name** | **Land size** | **Average Production** | **Herd size** | **Lactating herd** |
| Maraba Farm | 600 | 667 | 202 | 52 |
| Kapsuswo | 500 | 2700 | 350 | 140 |
| Seregon Farm | 200 | 600 | 106 | 49 |
| Kapkugo | 100 | 867 | 200 | 63 |
| Makongi Farm (unreliable data) | 400 | 1100 | 310 | 66 |
| Chego Farm | 35 | 900 | 108 | 35 |

## *Trans Nzoia County*

The market study conducted 19 deep scans in Trans Nzoia County. Average land size, herd size and of daily milk production was as follows.

| **Trans Nzoia Averages** | | | |
|---|---|---|---|
| MSFs | | LSFs | |
| Land size | 314 Acre | Land size | 1,949 Acre |
| Land size for dairy | 187 Acre | Land size for dairy | 375 Acre |
| Peak production | 362 kg Daily | Peak production | 1,688 kg Daily |
| Off peak production | 224 kg Daily | Off peak production | 1,064 kg Daily |
| Average production | 270 kg Daily | Average production | 1,273 kg Daily |
| Herd size | 88 Cows | Herd size | 355 Cows |
| Lactating herd size | 32 Cows | Lactating herd size | 100 Cows |

| MSFs Trans Nzoia | | | | |
|---|---|---|---|---|
| **Name** | **Land size** | **Average Production** | **Herd size** | **Lactating herd** |
| Kibomet Farm | 80 | 113 | 60 | 25 |
| Endakano Farm | 80 | 135 | 23 | 7 |
| Aluda Farm | 54 | 80 | 20 | 11 |
| Emjay Farm | 60 | 369 | 78 | 33 |
| Rimo Farm | 300 | 177 | 57 | 20 |
| Eldoret Express Farm | 500 | 434 | 82 | 35 |
| Njoroge Farm | 1 | 587 | 71 | 31 |
| Lesmat A farm | 100 | 142 | 35 | 16 |
| Kuza Farm | 100 | 73 | 41 | 4 |
| Sango Farm | 500 | 333 | 127 | 40 |
| Sirwo Farm | 300 | 300 | 110 | 31 |
| Lesmat B Farm | 1,000 | 434 | 329 | 108 |
| Kalua Farm | 1,000 | 334 | 110 | 58 |

| LSFs Trans Nzoia | | | | |
|---|---|---|---|---|
| **Name** | **Land size** | **Average Production** | **Herd size** | **Lactating herd** |
| Westwood Farm | 750 | 1,191 | 446 | 94 |
| Khisa Farm | 1,550 | 1,680 | 400 | 122 |
| Bubayi Farm | 850 | 1,184 | 270 | 100 |
| Chesowos Farm | 780 | 712 | 173 | 61 |
| ADC Namandala Farm | 3,262 | 1,401 | 346 | 96 |
| ADC Katuke Farm | 4,500 | 1,467 | 500 | 126 |

## *Nandi County*

The market study conducted 10 deep scans in Nandi County. Average land size, herd size and of daily milk production was as follows.

| **Nandi Averages** | | | |
|---|---|---|---|
| | **MSFs** | | **LSFs** |
| Land size | 80 Acre | Land size | - Acre |
| Land size for dairy | 48 Acre | Land size for dairy | - Acre |
| Peak production | 217 kg Daily | Peak production | - kg Daily |
| Off peak production | 165 kg Daily | Off peak production | - kg Daily |
| Average production | 182 kg Daily | Average production | - kg Daily |
| Herd size | 49 Cows | Herd size | - Cows |
| Lactating herd size | 19 Cows | Lactating herd size | - Cows |

| MSFs Nandi | | | | |
|---|---|---|---|---|
| **Name** | **Land size** | **Average Production** | **Herd size** | **Lactating herd** |
| Baraton Univ Farm | 200 | 530 | 131 | 41 |
| Kaimosi ATC Farm | 176 | 147 | 58 | 20 |
| Kapchemunge Farm | 30 | 127 | 36 | 10 |
| Barno Farm | 36 | 129 | 32 | 14 |
| Tanui Farm | 50 | 117 | 26 | 15 |
| Kaiboi Institute Farm | 63 | 104 | 26 | 7 |
| Kimong Farm | 66 | 233 | 56 | 22 |
| Kopoch Farm | 130 | 117 | 65 | 27 |
| Nellies Ltd co Farm | 18 | 120 | 18 | 16 |
| Rono's Farm | 30 | 200 | 26 | 15 |

## Nakuru County

Nakuru County is not part of North Rift Region and no deep scans were done. However on the Eldoret Nakuru corridor 13 MSFs and LSFs were identified and have been listed in the study due to relative proximity to Eldoret. For any processor based in North Rift and sourcing milk in this catchment it could be logistically interesting to also look at the nearest "easy to reach" milk pocket with a concentration of MSFs and LSFs. The distance from Eldoret to Nakuru Town is 156 kilometers and the Eldoret – Nakuru trunk road is in good condition. Hence a quick scan was made of Nakuru MSFs and LSFs.

| **Nakuru Averages** | | | |
|---|---|---|---|
| | **MSFs** | | **LSFs** |
| Land size | *Unknown* | Land size | *Unknown* |
| Land size for dairy | *Unknown* | Land size for dairy | *Unknown* |
| Peak production | 270 kg Daily | Peak production | 4,040 kg Daily |
| Off peak production | 169 kg Daily | Off peak production | 3,600 kg Daily |
| Average production | 203 kg Daily | Average production | 3,747 kg Daily |
| Herd size | 34 Cows | Herd size | 675 Cows |
| Lactating herd size | 15 Cows | Lactating herd size | 245 Cows |

***MSFs and LSFs in Nakuru County***

| Name | **Average Production** | **Herd size** | **Lactating herd** | **Cooling Tank** |
|---|---|---|---|---|
| Joy Farm | 313 | 31 | 15 | YES |
| Wachira Farm | 160 | 42 | 17 | NO |
| Ngera Farm | 350 | 50 | 20 | YES |
| Gitonga Farm * | 267 | 30 | 25 | NO |
| Njau Farm | 183 | 56 | 21 | NO |
| Thayu Farm | 130 | 40 | 6 | NO |
| Gweyani | 97 | 15 | 9 | NO |
| Kagia Farm * | 120 | 11 | 9 | NO |
| Rawhide Farm | 1,034 | 250 | 100 | YES |
| Chemusian Farm | 7,001 | 820 | 500 | YES |
| WER | 1,100 | 478 | 98 | YES |
| Technology Farm | 5,000 | 800 | 300 | YES |
| Gogar Farm | 4,600 | 1,025 | 225 | YES |

*Unreliable data may occur

## 5.3 Market Segment 2: Deep Scan Dairy Cooperatives

The market study made an inventory of all cooperatives in the North Rift counties Uasin Gishu (UG), Trans Nzoia (TN), Nandi (NA), Baringo (BA), Bungoma (BU), Elgeyo-Marakwet (EM), Kakamega (KA) and West Pokot (WP). A list over 200 dairy cooperatives was provided by the Kenya Dairy Board (KDB), of which 81 were found to be active (Annex 2). 44 deep scans were conducted (50%) as per the list below. The deep scans in the contain information on membership, average daily milk intake, inputs and services and milk cooling equipment (see the two tables below).

Almost all 44 cooperatives offered their farmers access to inputs and services through check-off system, whereby active members can buy farm inputs and pay through money deducted from their milk deliveries. This service was offered in collaboration with a SACCO or a local bank.

All cooperatives collect milk from their members, sometimes directly but mostly through milk collection points in the routes and hired transporters with vehicles and motorbikes or even donkey carts.

A good number of cooperatives also provides AI services and operate an agrovet shop where they sell amongst others seeds, dairy meals, minerals and veterinary products. Some have farm machinery to plough land and harvest fodder crops for their members (agricultural contracting services).

Most had staff for milk procurement and farmer training/extension. The deep scans showed that there is a positive correlation between the number of extension officers and the amount of milk received by the dairy cooperatives. Additionally there is a strong positive correlation between the total number of members of a cooperative and the total staff they employ, more important the extension officers and the active members. Moreover, the market study showed a positive correlation between the number of extension officers and the amount of milk sourced by the cooperatives.

The average annual milk price paid over the year (12 months preceding the deep scan) for the 44 cooperatives ranged from KES 26 to 70 depending on season and the location/distance of the cooperative to the market. Also this depends on the share of milk sold by the cooperatives to processors or directly as raw milk to consumers/retailers. The total average for all cooperatives and over the entire 12 month period was around KES 34.

Four cooperatives were involved in mini processing: Tarakwa FCS (UG), Moi's Bridge Dairies (UG), Naitiri DFCS (BU) and Mogotio FCS (BA). During the deep scan it was noted that seven cooperatives had plans to start processing: Kabiyet, Mumberes, Sirikwa, Chepkorio, Kiplombe, Mwaita and Khwisero.

| Cooperatives Deep Scan: Members, Milk Intake, Inputs/Services | | | | |
|---|---|---|---|---|
| **Name and County** | **Total Members** | **Active Members** | **Average Milk Intake/Day** | **Inputs and Services (AI, Agrovet, Agr. Contracting)** |
| **Tarakwa FCS (UG)** | 200 | 99 | 801 | Agrovet |
| **Tarakwo (UG)** | 3,800 | 800 | 9,015 | AI, Agrovet |
| **Mois Bridge (UG/TN)** | 4,000 | 2,500 | 14,022 | All |
| **Sirikwa (UG)** | 6,800 | 2,000 | 12,685 | All |
| **Cheptiret (UG)** | 250 | 200 | 3,003 | All |
| **Ainabkoi (UG)** | 900 | 900 | 3,172 | All |
| **Timboroa (UG)** | 460 | 89 | 501 | Agrovet |
| **Progressive (UG)** | 200 | 150 | 1,419 | Contracting, Agrovet |
| **Chepkorio (UG)** | 6,500 | 3,500 | 8,178 | All |
| **Lelbren (UG)** | 4,000 | 1,000 | 9,345 | AI, Agrovet |
| **Lessos FCS (UG)** | 4,960 | 2,500 | 7,342 | AI, Agrovet |
| **Tuiyo (UG)** | 90 | 20 | 334 | AI, Agrovet |
| **Sugoi Alliance (UG)** | 577 | 250 | 1,436 | |
| **Lelbren Satellite (UG)** | 986 | 185 | 2,304 | AI, Agrovet |
| **Mateeny FCS (UG)** | 196 | 196 | 227 | Agrovet |
| **Mwaita (TN)** | 1,700 | 700 | 3,337 | All |
| **Endebes (TN)** | 450 | 42 | 2,334 | |
| **Meboot (TN)** | 475 | 52 | 434 | Contracting |
| **Kabiyet (NA)** | 13,500 | 4,000 | 14,362 | All |
| **3 Ton Dairies (NA)** | 300 | 100 | 701 | |
| **Cheda (NA)** | 2,000 | 550 | 935 | AI, Agrovet |
| **Kapkuto (NA)** | 50 | 50 | 1,535 | Agrovet |
| **Aldaai (NA)** | 510 | 220 | 1,701 | AI, Agrovet |
| **Ikolomani DFCS (KA)** | 241 | 80 | 487 | Contracting, Agrovet |
| **Khwisero FCS (KA)** | 1,164 | 450 | 701 | AI, Agrovet |
| **Mautuma Cooler (KA)** | 300 | 100 | 801 | Contracting, Agrovet |
| **Kaptarakwa (EM)** | 500 | 200 | 734 | AI, Agrovet |
| **Cheptongei (EM)** | 935 | 100 | 1,001 | |
| **Metkei Multi-Purpose (EM)** | 600 | 400 | 2,538 | |
| **Koisungur Cooler (EM)** | 2,000 | 1,292 | 1,537 | AI, Agrovet |

| | | | | |
|---|---|---|---|---|
| **Ndalu Cooperative Society (BU)** | 578 | 44 | 935 | Contracting, Agrovet |
| **Kikai DFC (BU)** | 475 | 200 | 434 | Contracting |
| **Naitiri (BU)** | 7,965 | 1,503 | 3,868 | AI, Agrovet |
| **Torongo FCS (BA)** | 3,000 | 1,200 | 3,340 | AI, Agrovet |
| **Langas Farmers Dairy (BA)** | 874 | 370 | 1,402 | Agrovet |
| **Sabatia (BA)** | 1,600 | 208 | 5,338 | Contracting, Agrovet |
| **Kiplombe FCS (BA)** | 2,200 | 1,400 | 2,840 | All |
| **Mumberes (BA)** | 4,013 | 1,715 | 10,340 | All |
| **Tenges FCS (BA)** | 540 | 76 | 233 | |
| **Mwachoni (BA)** | 317 | 80 | 396 | Agrovet |
| **Emining (BA)** | 475 | 250 | 1,102 | |
| **Arama FCS (BA)** | 615 | 300 | 467 | Agrovet |
| **Mogotio FCS (BA)** | 3,000 | 1,200 | 3,671 | |
| **Lelan Highland (WP)** | 3,344 | 664 | 2,137 | AI, Agrovet |

## Cooperatives Deep Scan: Milk Cooling Facilities

| Name and County | Type | Brand | Capacity | Status | Year |
|---|---|---|---|---|---|
| **Tarakwa FCS (UG)** | Chiller | Daewoo | 5,000 | new | 2009 |
| **Tarakwo (UG)** | Chiller & Tanker | Nikos | 12,800 | 2ndH | 2010 |
| **Mois Bridge (UG)** | Chiller & Tanker | Packo | 10,000 | New & 2ndH | 2010 |
| **Sirikwa (UG)** | Chiller & Tanker | Packo | 12,000 | New | 2010 |
| **Cheptiret (UG)** | Chiller | Mueller | 5,200 | New | 2009 |
| **Ainabkoi (UG)** | Chiller & Tanker | Nikos | 6,200 | New | 2014 |
| **Timboroa (UG)** | None | | | | |
| **Progressive (UG)** | Chiller | Agrocomplex | 3,000 | New | 2012 |
| **Chepkorio (UG)** | Chiller & Tanker | Packo, Nikos | 18,000 | New & 2ndH | 2010 |
| **Lelbren (UG)** | Chiller & Tanker | Nikos | 5,000 | New | 2012 |
| **Lessos FCS (UG)** | Chiller & Tanker | Nikos | 8,500 | New | 2009 |
| **Tuiyo (UG)** | None | | | | |
| **Sugoi Alliance (UG)** | Chiller | Mueller | 3,000 | New | 2011 |
| **Lelbren Satellite (UG)** | Chiller | Nikos | 5,000 | New | 2012 |
| **Mateeny FCS (UG)** | None | | | | |
| **Mwaita (TN)** | Chiller | DeLaval | 6,000 | 2ndH | 2015 |

| | | | | | |
|---|---|---|---|---|---|
| **Endebes (TN)** | Chiller | Packo | 3,500 | New | 2014 |
| **Meboot (TN)** | Chiller | First SC | 1,000 | New | 2016 |
| **Kabiyet (NA)** | Chiller & Tanker | Packo | 10,000 | New | 2009 |
| **3 Ton Dairies (NA)** | Chiller | Packo | 3,000 | New | 2016 |
| **Cheda (NA)** | None | | | | |
| **Kapkuto (NA)** | None | | | | |
| **Aldaai (NA)** | None | | | | |
| **Ikolomani DFCS (KA)** | Chiller | TMT | 1,050 | New | 2015 |
| **Khwisero FCS (KA)** | Chiller | Packo | 3,500 | New | 2016 |
| **Mautuma Cooler (KA)** | Chiller | Packo | 3,800 | New | 2015 |
| **Kaptarakwa (EM)** | Chiller | Nikos | 5,000 | New | 2015 |
| **Cheptongei (EM)** | Chiller | IDMC | 5,000 | New | 2015 |
| **Metkei Multi-Purpose (EM)** | Chiller | Deci | 6,500 | New | 2014 |
| **Koisungur Cooler (EM)** | Chiller | Packo | 5,000 | New | 2015 |
| **Ndalu Cooperative Society (EM)** | Chiller | TMT | 5,000 | New | 2016 |
| **Kikai DFC (BU)** | Chiller | First SC | 5,200 | New | 2016 |
| **Naitiri (BU)** | Chiller | Nikos | 5,000 | New | 2010 |
| **Torongo FCS (BA)** | Chiller | Packo | 10,000 | New | 2015 |
| **Langas Farmers Dairy (BA)** | None | | | | |
| **Sabatia (BA)** | Chiller | Agrocomplex | 2,000 | New | 2016 |
| **Kiplombe FCS (BA)** | Chiller | Packo | 5,500 | New | 2012 |
| **Mumberes (BA)** | Chiller & Tanker | DeLaval, ASL | 15,000 | New | 2013 |
| **Tenges FCS (BA)** | Chiller | TMT | 500 | New | 2000 |
| **Mwachoni (BA)** | None | | | | |
| **Emining (BA)** | None | | | | |
| **Arama FCS (BA)** | None | | | | |
| **Mogotio FCS (BA)** | None | | | | |
| **Lelan Highland (WP)** | Chiller | Packo | 10,000 | New | 2009 |

(Counties: UG = Uasin Gishu; TN = Trans Nzoia; NA = Nandi; KA = Kakamega; EM = Elgeyo-Marakwet; BU = Bungoma; BA = Baringo; WP = West-Pokot)

## 5.4 Impressions of ISPIs Perspectives on Doing Business in Kenya

In March 2017, twelve Dutch ISPIs were interviewed in the Netherlands. Others were interviewed in Kenya during the field research. These interviews provided insight in the perception and strategies of Dutch ISPIs as regards doing business in Kenya/North Rift. For the list of ISPIs interviewed in March 2017: see Annex 3. A list of all ISPIs currently doing business in Kenya, either through local presence, agents or directly from the Netherlands is provided in Annex 4.

### 5.4.1 Perspective on Kenya / Kenya Dairy Sector

Dutch ISPIs had both negative and positive perspectives on Kenya, the North Rift, and the Kenyan dairy sector. These perspectives do not necessarily reflect the reality on the ground. Dutch ISPIs have in general a rather negative perspective on the Kenyan market. They seem not to realize or appreciate sufficiently that – compared to the Netherlands - the level of development is different, as is the (business) culture. Critical is the low knowledge and skills level throughout the whole value chain, with in addition a lower work ethics compared to the Netherlands. How to deal with a semi-formalized sector and nosiness environment is also a challenge for Dutch ISPIs. On the other hand they see the potential and opportunities of the Kenyan dairy sector. One of the interviewees selling cooling and milking equipment to Kenya noted:

*''I think the Kenyan dairy sector is at the brink of a revolution, the demand for fresh milk is high. In Nairobi you can sell your milk in plastic bags on the side of the road for prices that are higher than in Holland''.*

Most ISPIs recognize the fast-growing economy and middle-class, and Kenya being the economic hub in East Africa. On the other hand the general perception is that Kenyan farmers lack the financial means to invest, especially in more capital intensive farm machinery, equipment and services.

### 5.4.2 Strategies used by Dutch ISPIs in Kenya

All ISPIs interviewed have their own strategy to enter the Kenya market. What is a profitable business model for one, would not be successful for another. The below is merely a summary of the strategies used by the ISPIs. The market study showed a clear difference between ISPIs that are locally present, and those working via agents or distributors.

#### *Local presence*

These ISPIs have a local network and are close to the clients. They understand the market better, the needs and cultural factors, and the dynamics at play in the enabling environment. They get direct feedback from their clients being close to them and in direct contact. This allows them also to tailor make products, services, contracts and give after sales services and advise.

### *Working via a distributor/agent*

This strategy requires less upfront investment. In addition the ISPI can benefit from the market insight, experience and the network of the distributor and the network of the distributor can be used. This is often the arrangement for relative low priced bulk products (feed, pre-mixes, semen) that are sold into the markets via agents or distributors. The products require relatively low training for sales and marketing and low adaptation to the Kenyan market.

### *Client Selection*

Some ISPIs apply strict selection criteria regarding sales of their products and clients. In this strategy, it is not uncommon for ISPIs to decline clients who are not 'ready' for the product or service. This to ensure client satisfaction and proper use of the product to avoid reputational damage and bad press.

### *After sales care*

Several ISPIs have a strong focus on after sales care to ensure the right use of their products and satisfied clients.

### *Demos*

This is a way to introduce products and show the impact on business profitability and product quality for the client. All ISPIs believe this is an important strategy to enter the market. In Kenya 'seeing is believing'.

## 5.4.3 North Rift Dairy Stakeholder and Dutch ISPI Needs

Kenyan clients/stakeholders expressed the following needs and requirements for doing business with suppliers of inputs and services:

- Local presence
- Total Package: (provide products that are fitted/tailored to the local needs, and which go with training, after sales service, good supply of spare parts, etc.)
- Consistent Supply: make sure the product or service is always available.

Dutch ISPIs expressed the need for reliable and accurate information and data on the sector, specific for their products or services. Current information is often unreliable or not available at all and too general (national data and trends). This makes strategic decision making difficult.

# 6. Needs Assessment and Market Opportunities

**(Results from the deep scans)**

As explained before this study identified 2 types of potential B2B clients:

a) Medium and Large Scale dairy Farmers (MSFs/LSFs). This group of farmers is increasing rapidly and are fully commercialized.
b) Smallholder dairy societies (cooperatives) that collect, bulk and market milk to processors and provide inputs to their members.

Based on the results of the deep scans, characterization of potential clients was done, and a needs assessment was made for MSFs/LSFs on one hand, and for cooperatives on the other hand, also reflecting the market opportunities for Dutch ISPIs. This is done according to the pre-determined themes:

1. Feed, Fodder, Farm Machinery and Agricultural Contracting Services
2. Milking and Cooling Equipment, Milk Processing Equipment
3. Herd Improvement (genetics and young stock)
4. Herd and Farm Management Software, ERP Systems
5. Cow House Design and Interiors
6. Practical Training and Education, Dairy Advisory
7. Finance and Fiscal Policies

## 6.1 Feeds, Fodder, Farm Machinery & Agricultural Contracting

North Rift – and Kenya dairy sector in general - forms a huge market for feeds in form of concentrates and dairy meals, pre-mixes and minerals, and of late also milk replacers for calf rearing were introduced. The feed manufacturing sector in Kenya is robust with strong brands like Unga Feeds, Twiga Feeds, Pioneer and many others – some operating regional and others at a national level. Information on feed manufacturers and major brands can be derived from the BLGG/SNV Feed and Fodder Study that can be downloaded from www.cowsoko.com/KMDP
Studies by BLGG/SNV and others show that dairy meals are usually of low quality and below the (Kenya Bureau of Standards/KEBS and international) standards as regards main nutrients (especially protein and with high crude ash %). A rule of thumb is that 1 kg of dairy meal in Kenya under good management will give the farmer 1.5-1.6 liters of milk, whereas in Europe this is 2.0 liters of milk.

Most smallholder farmers buy ready-made dairy meals. A large part of MSFs and LSFs buy feed ingredients such as cotton seed or sun flower press cakes, fishmeal, maize bran, soy and others, and they mix their own dairy meals. Most of these feedstuffs are imported from neighboring countries (please see the SNV/BLGG study for raw materials/ingredients in the market).
Farmers sourcing raw materials/feed ingredients for making their own dairy meals are prone to large fluctuation in availability and consistency in quality of different batches. Also the risk of aflatoxin contamination is high in these by-products that

are not quality controlled. Yet mixing one's own dairy meal is generally much cheaper than buying ready-made dairy meal from the feed manufacturers.
The need for year round access to good quality high energy and protein fodder is huge. The lack of this presents the largest problem for most dairy farmers in Kenya to run a profitable dairy enterprise. This also applies to North Rift where land sizes are generally larger than in other high potential dairy areas in Kenya.

Pastures for (rotational) grazing are available but not well managed. Commercial hay production is big in Kenya but of poor quality. Grass (for pastures and for hay and mainly Boma Rhodes, Star grass and Kikuyu grass) is not fertilized and managed well. Harvesting is at the wrong time with as a result grass hay being low in protein and high in non-digestible fibers.
Production of maize silage (and also silages of oaths and fodder sorghum) are practiced by most MSFs and LSFs, and increasingly also by entrepreneurial smallholders. But quantitates (fodder planning!) and quality is usually insufficient and low. Grass silage is largely unknown. Lucerne as a commercial fodder hay is grown mainly around Naivasha but in short supply and also not of prime quality (currently several investors are looking at the feasibility of upscaling lucerne production under pivot irrigation systems).
In addition to that Kenya has poor access to high yielding hybrid fodder seeds for almost all fodder crops, be it fodder maize, sorghum, lucerne, grasses and other crops. This is largely due to the long and cumbersome process of registration of new seed varieties in the country, however the demand for new and improved fodder seed varieties is large and growing.

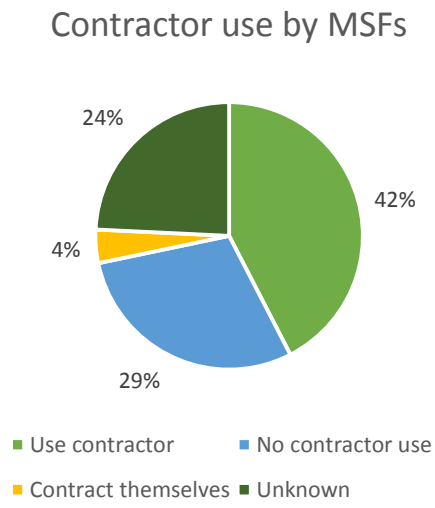
In spite of this, and partly as a result of KMDP, there is a fast growing awareness of the importance of good quality fodder amongst farmers, small and large. The market for both agricultural contractors who provide on-farm fodder production and preservation (silaging, baling) services, and for commercial fodder production is growing. As for the latter, the grass hay market and scope for improved quality is huge, but alongside there is a segment of farmers that is in need and are aware of the importance of quality fodders like lucerne hay and baled silages (e.g. maize, sorghum, grass). These are very competitive compared with the price and quality of hay.
Several pilots were – or are being - started under SNV KMDP for improved (quality) hay production and marketing, agricultural contracting services (Nundoroto, Dejirene, others) and baling of maize and other silages (Gogar, FIT Ltd, AgVenture Group). Compared to other dairy pockets in Kenya, North Rift consists of larger farms, making fodder production and mechanization more common. The demand for professional agricultural contracting services for maize silage is big. The market response is that the number of agricultural contractors is increasing, which has a positive influence on productivity and quality of fodder. Demand for farm machinery for fodder production and preservation is therefore growing amongst agricultural contractors, MSFs and LSFs, but also dairy cooperatives started providing this service to their members.

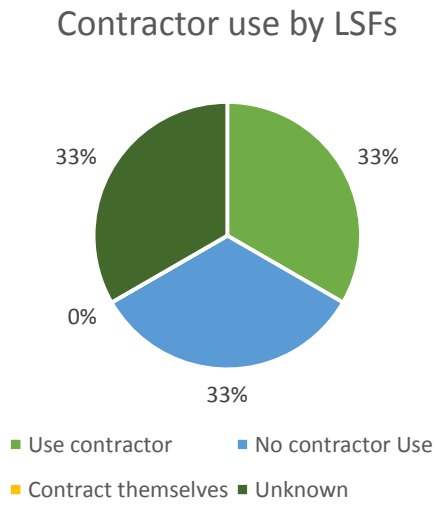
Currently, second hand and refurbished machinery are dominating the market, mainly imported from outside Africa, sometimes subsidized by the government. The quality of the machinery is often low and rarely offered with service or training. However, the market for new machinery is emerging, as specialization and increasing farm sizes and level of professionalism are rising. North Rift is known for being the major crop producing region of Kenya and the highest in farm mechanization.

| **Strength** | **Weakness** |
|---|---|
| - Demand for used and refurbished machinery<br>- Emerging market for new machinery<br>- Increasing awareness for quality feed and fodder.<br>- Professionalising agricultural contractors.<br>- Common use of dairy meal, pre-mixes, minerals. Increasing use of milk replacers. | - Low quality of feed and fodder and inputs.<br>- Poor availability of mechanics, spares and tools.<br>- Fluctuating production of feed and fodder<br>- Preference of MSFs and LSFs for low cost, low quality products and machinery (e.g. from China).<br>- Knowledge gap in feed rationing. |
| **Opportunity** | **Threat** |
| - Large plots compared to the rest of Kenya.<br>- Fodder production by MSFs and LSFs is common.<br>- Crop producing area with favourable climate conditions and possibilities.<br>- Need/awareness to reduce cost of production through enhanced feed/ fodder quality | - Seasonality.<br>- Tedious and costly procedures for import duties and other costs involved.<br>- Weak regulation of quality standards.<br>- Market distortions through donor and government investments. |

### 6.1.1 MSFs and LSFs

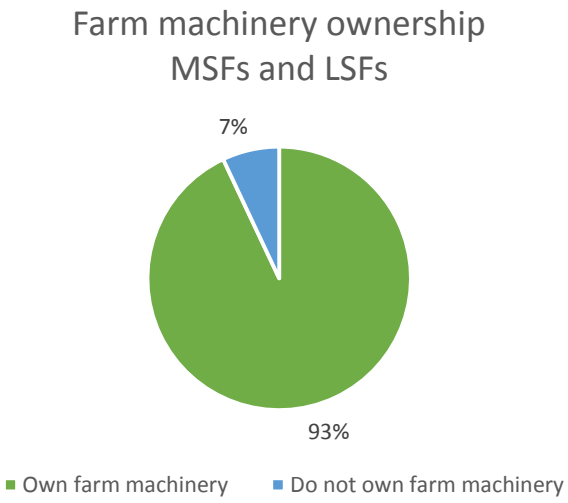
#### *Use of Agricultural Contractors*

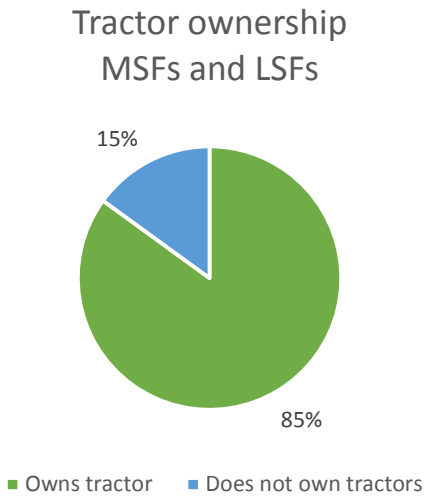



42% of the MSFs and 33% of the LSFs employ contractors for different services e.g. land preparation, seeding and silage making. 4% of the MSFs offer themselves agricultural contracting services to others.

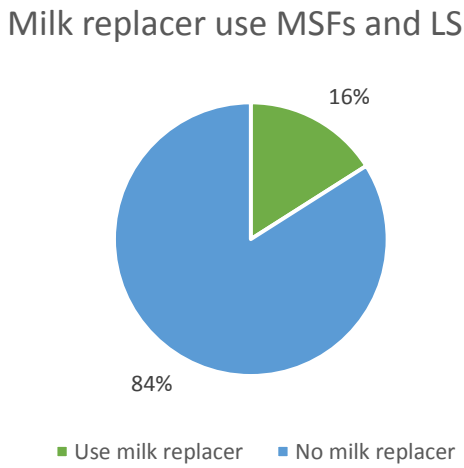
### *Farm Machinery*

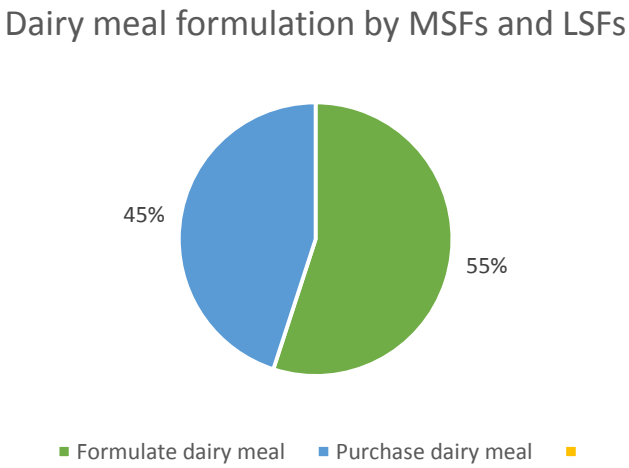



The majority of MSFs/LSFs (93%) own farm machinery such as tractors, ploughs. Other machinery owned are different types of harvesters, choppers and so on.

### *Use of Milk Replacers, Dairy Meal*

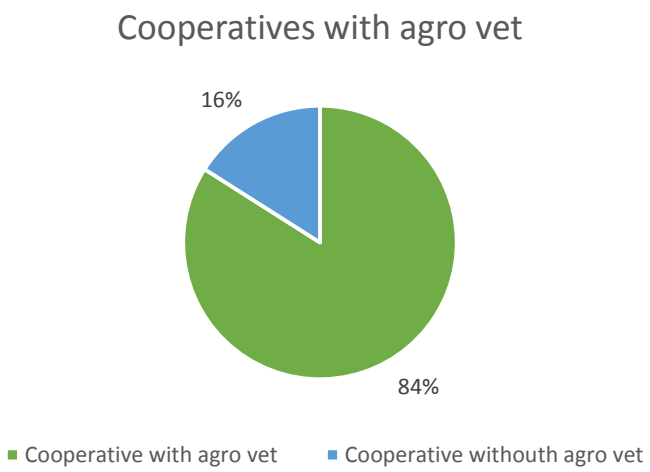



84% of MSFs and LSFs do not use milk replacers. Often farmers do not recognize the benefits of milk replacers, in both quality and economically. 100% of MSFs and LSFs use dairy meal. 55% of the MSFs and LSFs purchases ready-made dairy meal, whereas 45% of MSFs and LSFs buy ingredients/raw materials and formulate their own dairy meal.

## 6.1.2 Cooperatives

Cooperatives have an important role for all farmers, not only for milk collection and marketing, but also through provision of inputs and services. Almost all cooperatives (84%) have agrovets, which are shops where they sell dairy meal, minerals, pre mixes, sometimes hay and fodder seeds. This is also a potential point of sales for milk replacers. 30% of the cooperatives that were deep scanned offered agricultural contracting services to their members.




## 6.2 Milking and Cooling Equipment, Milk Processing

Annual milk production in North Rift is estimated at 1 billion kgs/year, which is produced by a mix of smallholders, MSFs and LSFs. The trend is that an increasing part of this milk (currently 30-40%) is being marketed through the formal channel and thus requires chilling. This is expected to increase in the coming years due to raised awareness for milk quality and enhanced enforcement of quality standards. In addition, population growth, growing middle class and urbanisation are important drivers for growth in demand/consumption of processed milk and dairy products. The three national processors (NKCC, Brookside and Daima-Sameer) all collect milk from North Rift, with NKCC having the largest share of milk that goes to processors (40%). In addition there are a few local processors buying milk (Doinyo Lessos, Happy Cow Ltd and Kabiyanga Dairies).

Most dairy cooperatives have one or more milk cooling tanks with a capacity > 2,500 – 10,000 liters. Some of them also own and operate satellite coolers in their collection routes. The majority of these tanks are powered by electricity (rural electrification programme), but it is very common to find a stand by generator at the site as power cuts are common.

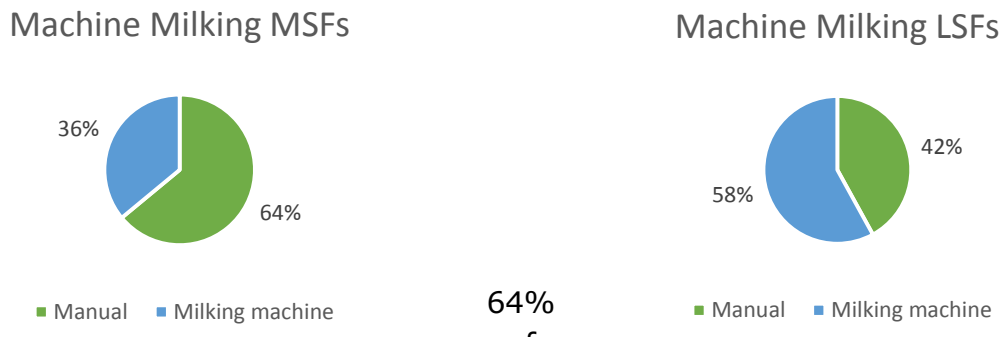
Out of the 44 cooperatives deep scanned, four were processing milk into yoghurt or to sell in milk dispensers. Seven were having plans to go into processing in 2018/19 (see above). A recent development in Kenya (and also North Rift) is the emergence of milk dispensing machines (milk ATMs) in urban centers. These are owned by either MSFs/LSFs, cooperatives and - the majority- by traders. The number of ATMs licensed by Kenya Dairy Board is said to be close to 1,000. Quality control of milk sold through these ATMs is lacking.
Also MSF and LSFs invest in milk cooling tanks, although of smaller capacity. These farmers also buy milking machines (bucket system) or have milking parlors.

For cooling tanks, milking machines and milking parlors, there is both a market for new and refurbished. Dairy processing equipment and milk dispensers are mainly sold as new products. It is common to find cheap and low quality equipment in the market sourced from China, India and Turkey. On the other hand, top brands like DeLaval, Packo, Mueller and others manufacturers are being sold in Kenya and all have local offices.

| **Strength** | **Weakness** |
|---|---|
| - Relatively large number of processors, dairy cooperatives, MSF/LSFs<br>- Growing awareness and demand for better quality equipment.<br>- Increasing demand for processed milk and value added dairy products<br>- Strong rural electrification programme<br>- Good market for used & refurbished products | - Lack of maintenance and high costs<br>- Availability of trained mechanics<br>- Availability of spare parts and tools<br>- European equipment more expensive than India, China, Turkey made, preference of farmers to relatively low quality low cost products |
| **Opportunity** | **Threat** |
| - Growing awareness and demand for food safety and qulaity milk<br>- Maintenance and repairs support services and spare parts supply<br>- Growing demand for equipment for mini processing from cooperatives and LSFs<br>- Market for used and new equipment | - Tedious and costly procedures for import duties and other costs involved.<br>- Many players in the market<br>- High energy costs and unstable supply<br>- Water scarcity and unsecured water access<br>- Weak quality regulation<br>- Danger of market distortion through donor and government investments<br>- Informal milk trade, seasonality of supply |

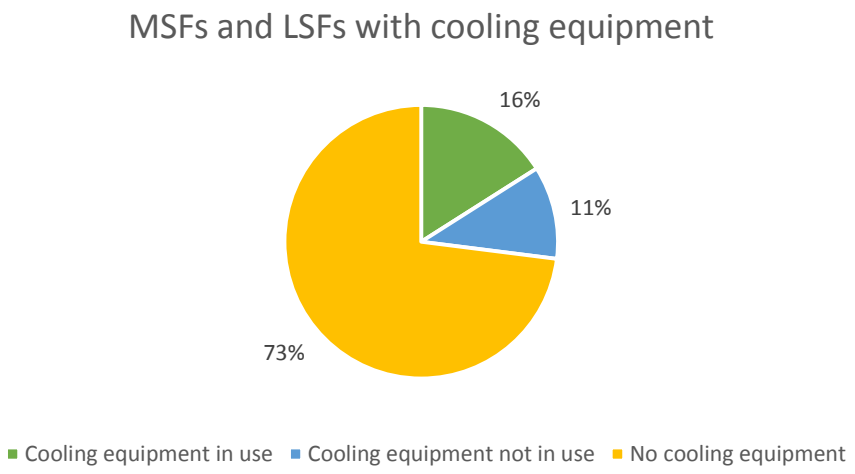
### 6.2.1 MSFs and LSFs

#### *Machine Milking*




64% of MSFs milk manually. Whereas the majority of LSFs (58%) milks with a milking machine. An explanation could be that for MSFs labour costs are not outweighing the cost of a milking machine, whereas it does for LSFs due to production volume.

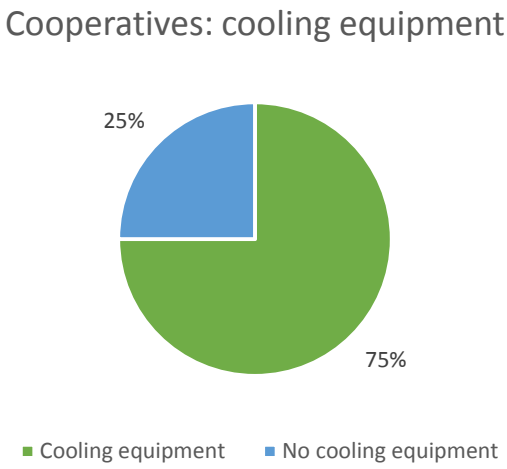
### *Cooling Equipment*




73% of MSFs/LSFs have no cooling equipment, and 11% of MSFs/LSFs owned cooling equipment that was not in use, which was due to several reasons i.e. electricity cost, the milk was sold in the informal market where cooling was not necessary, or broken machinery and/or lack of maintenance and/or parts.

## 6.2.2 Cooperatives

### *Cooling Equipment*




75% of dairy cooperatives own cooling equipment. Often there is over capacity especially in the dry season. Many cooperatives received soft loans or donations from development organisations/projects or County Governments to co-finance the cooling tanks.

## 6.3 Herd Improvement (genetics and young stock)

Kenya has by far the largest herd of improved dairy cattle on the continent with an estimated 4.2 million heads. There is a growing demand for better breeding services nationally through Artificial Insemination (AI), which is driven by the desire for better dairy genetics. The demand for better genetics is in turn driven by the demand for more milk and dairy products to feed a growing and urbanizing population.

Despite increasing AI adoption rates, farmers as consumers remain underserved and register a lot of challenges in regard to heat detection, access to information on appropriate breed choice, bull selection and quality and reliability of AI services. The key cost drivers for an AI service are bull semen, arm service and transport. The cost of semen ranges from KES 300 to KES 1,500 for local semen and from 1,000 to 7,000 for imported semen (conventional and sexed semen).

The national bull stud KAGRC dominates bull semen business. Last year KAGRC produced over 1.1 mln doses of semen and distributed it through its 60 agents spread over 40 counties. In 2016 KAGRC's total sales stood at 718,000 doses of semen. Private suppliers, mainly dealing with imported genetics, distribute either through the KAGRC appointed distributors or independently, and at times directly to AI service providers SPs, farmers and Agrovet shops that act as their agents. The annual estimated imported semen that is recorded stands at 483,000 straws (2015).

***International semen sources and local distributors (Makoni, 2015)***

| **Local Company** | **ORIGIN: Genetic Company** |
|---|---|
| ABSTCM | ABS Global Inc. Genus USA |
| AI Total | AI Total, The Netherlands |
| Bles Dairies East Africa Ltd | Bles Dairies BV, The Netherlands |
| Bimeda/Assia | Alta Genetics, Netherlands and Semen from Israel |
| Coopers Kenya Limited | CRV (The Netherlands former Holland Genetics) |
| DETF | Cogent Semen, Company, UK |
| Fleckvieh Genetics EA. | Fleckvieh-Germany |
| Highchem | Cooperative Resources International, USA |
| Indicus | Evolution, Serbia |
| Pokea | Osnabrouk, Germany |
| Taurus | Taurus, South Africa |
| Twiga Chemicals | Semex, Canada |
| World Wide Sires (East Africa) | World Wide Sires (Select Sires Genex),USA |
| Gogar Farm (Hamish Grant) | Viking, Denmark |

Artificial insemination (AI) as a method of breeding and breed improvement was introduced in Kenya in early 1940's by the colonial government and has played a significant role in improving dairy production in the country. The initial stages of AI service provision were entirely government driven. In 1992 the government through economic reforms (World Bank Structural Adjustment Programme-SAP) privatized AI services, among other livestock related services like extension and animal health. Many studies have noted that the inadequate structures to facilitate the transition of government services to private services hampered the advancement, development and improvement of breeding service provision up to date.

The spread and the speed of acceptance of AI since, is less than anticipated (AI 28% of which 2% is sexed semen) both by the National and local Government. This is caused by various problems along the chain of semen delivery. Many studies have noted that the inadequate structures to facilitate the transition of government services to private services hampered the advancement, development and improvement of breeding service provision to date.
Many farmers still lack access to Artificial insemination services, as key inputs (semen and liquid nitrogen) are not always readily available. There are few trained technicians who tend to be concentrated in areas of highest dairy livestock density and operate from town or market centres. Moreover, although farmers recognize the importance of AI, many remain unwilling to pay the relatively high service fees.

In many cases farmers' lack the appropriate skills to accurately detect heat while geographical distances between the farm and the AI service provider makes timely insemination difficult and lowers conception rates. Farmers require continuous training and acquisition of knowledge and skill set for proper dairy cattle management. See also: "Livestock Genetics Society of EA Strategic Plan 2012-15".

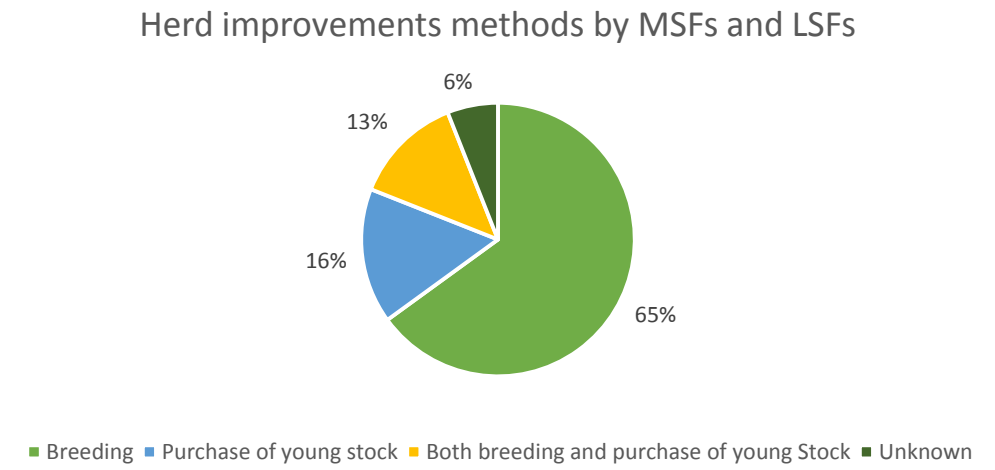
In 2015 the total value of the Kenya AI business exceeds 11 million USD with a potential to generate over 37.6 million USD at 60% AI-uptake of total dairy cattle conceptions or breedings (Makoni, Humadikuwanda, & Chatikobo, 2015).

The purchase of calves, in-calf heifers and cows is common practice for MSFs and LSFs to expand their herds, or for new investors in dairy to enter the market. 'High' quality in-calf heifers range between KES 150,000 and 360,000 for the highest imported breeds. Kenya has some strong private breeders, and also has cattle societies like the Kenya Holstein Friesian Cattle Society and the Kenya Jersey Cattle Society that have a tradition of over 50 years. In addition companies are emerging, such as Gogar Farm in Rongai and Bles Dairies EA Ltd in Eldoret, which import young stock from the Netherlands for sales. Others have imported from South Africa, such as the Eldoret Dairy Farmers Association (EDFA). There is a growing but still relatively small market for imported cows.

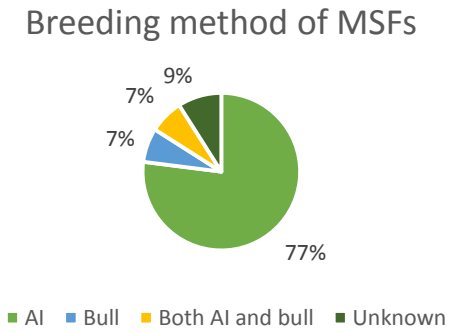
| Strength | Weakness |
|---|---|
| - Good quality genetics available<br>- Basic infrastructure (LN) and human skills in place<br>- Established public and private sectors for herd improvement<br>- Good reputation Dutch breeds and genetics<br>- Investments in dairy production and expansion of herds; trend next 15 years is demand for milk > supply | - Unqualified inseminators, low ethics and advise bull selection based on profit margins and availability<br>- Non-transparent pricing by inseminators<br>- Distance to the farmer<br>- Quality control of inseminators weak<br>- Low staff morale due to poor terms and conditions of service<br>- Low-input low-output farms unable to handle high quality exotic breeds. |
| **Opportunity** | **Threat** |
| - High and increasing demand for quality genetics<br>- Storage opportunities i.e. liquid nitrogen improving<br>- Total packages e.g. record management, training, service product | - Poor quality of inseminators damaging reputation of animal genetics sub sector<br>- Genotype not matching the environment and production systems |

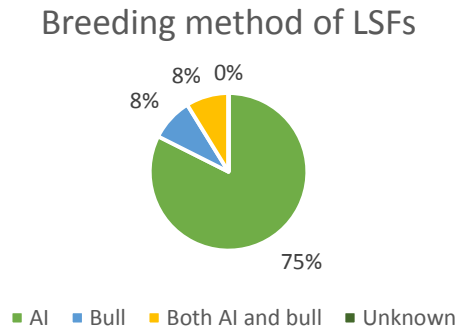
### 6.3.1 MSFs and LSFs

#### *Herd Improvement Method/Use of AI*

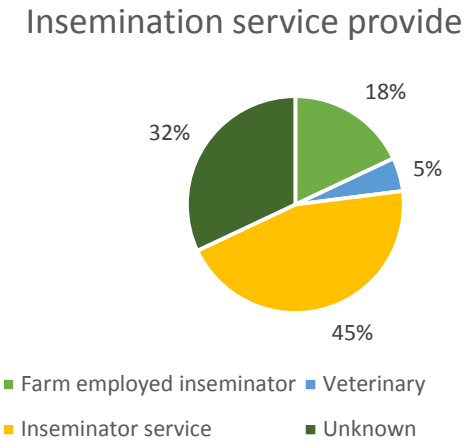


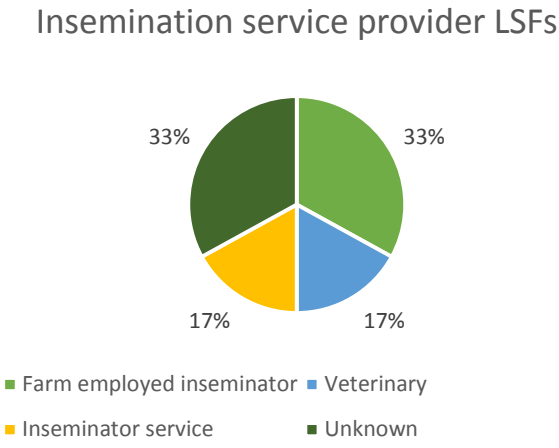

65% of MSFs and LSFs in North Rift uses on-farm breeding as way of herd improvement. 16% purchased animals to enhance and expand the herd. 13% of MSFs/ LSFs do both. MSFs (77%) and LSFs (75%) use AI services (below).



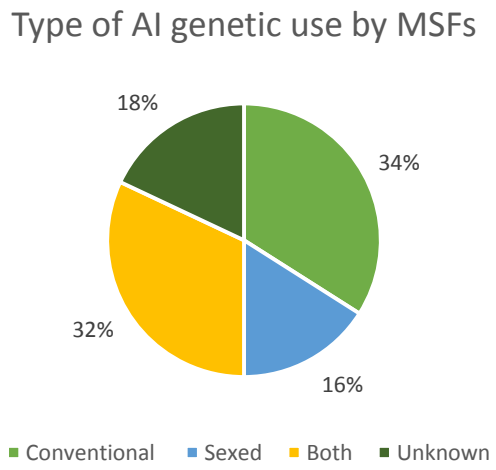
## *Insemination*

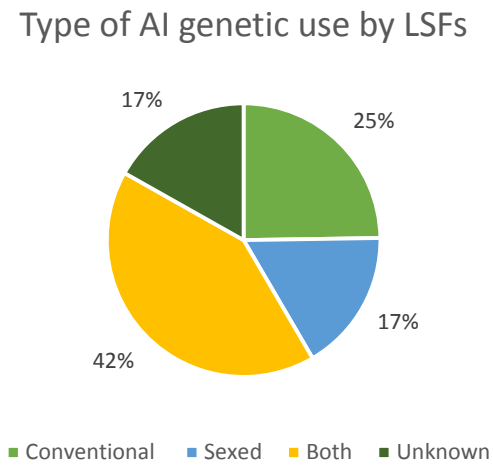



MSFs make more use of private inseminators, whilst LSFs employ more often their own inseminators or their vet. The average cost for arm service was KES 575 for MSFs and KES 700 for LSFs.

## *Use of Sexed Semen*

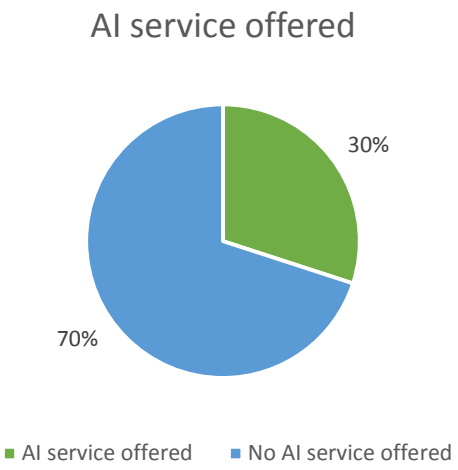



The use of sexed semen (only) is around 17% which is much higher than the national figure that is 2%. Average costs of conventional and sexed semen used by the MSFs and LSFs in the study are respectively KES 1,700 and KES 4,700.

### 6.3.2 Cooperatives

#### *AI Services and Tanks*




30% of the active dairy cooperatives in North Rift offer AI services to their members.

The following farms and cooperatives own an AI Tank

| Farm | County |
|---|---|
| Maraba Farm | Uasin Gishu |
| Chego Farm | Uasin Gishu |
| Samo Farm | Uasin Gishu |
| Makongi Farm | Uasin Gishu |
| DL Farm | Uasin Gishu |
| Seregon Farm | Uasin Gishu |
| University of Eldoret Farm | Uasin Gishu |
| Eldoret Polytechnic Farm | Uasin Gishu |
| Sprout Dairies | Trans Nzoia |
| ADC Katuke Farm | Trans Nzoia |
| ADC Namandala Farm | Trans Nzoia |
| Bubayi Farm | Trans Nzoia |
| Rimo Farm | Trans Nzoia |
| Chesowos Farm | Trans Nzoia |
| Westwood Farm | Trans Nzoia |
| Lesmat A Farm | Trans Nzoia |
| Lesmat B Farm | Trans Nzoia |
| Kaimosi Technical Farm | Nandi |
| Baraton University Farm | Nandi |

| Cooperatives | County |
|---|---|
| Kabiyet Dairies | Nandi |
| Tarakwo FCS | Uasin Gishu |
| Sirikwa Dairies | Uasin Gishu |
| Moisbridge Daries | Trans Nzoia |
| Ainabkoi FCS | Uasin Gishu |
| Chepkorio Daries | Uasin Gishu |
| Lessos FCS | Nandi |
| Lelbren FCS | Nandi |
| Mwaita FCS | Trans Nzoia |
| Lelan Highland Dairies | West-Pokot |
| Khiwisero DFCS | Kakamega |
| Torongo FCS | Baringo |
| Kiplombe FCS | Baringo |
| Mumberes FCS | Baringo |
| Naitriri DFCS | Bungoma |

## 6.4 Herd and Farm Management Software, ERP systems

### 6.4.1 MSFs and LSFs

Consistent record keeping of key performance indicators for herd fertility management and to assess economic performance and profitability of the farm, is one of the least developed areas in dairy farming in Kenya. This applies across the board for smallholders, MSFs and LSFs, although in case of the latter the culture of record keeping is more widely accepted and improving. If records are kept it is usually manual and not cow-specific.

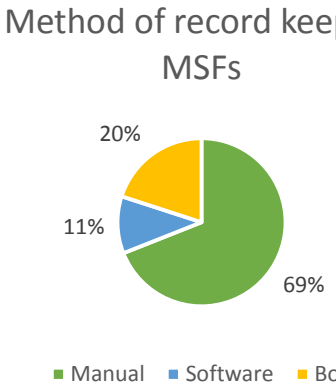
SNV KMDP piloted Uniform Agri herd fertility management software in 2014 with twelve subscriptions. The uptake and scaling up has been very slow. Currently a simplified version (Basics) is piloted through the KMDP Phase II Innovation Fund for 30 farmers. Also uptake here is slow. There are competitors in the market from Israel and also local software packages are being developed and marketed (DairyCow). There is a growing market for these products and UA is superior to other softwares in the market, however it is also higher priced and needs intensive training and discipline of the users (usually farm managers and not the owners).

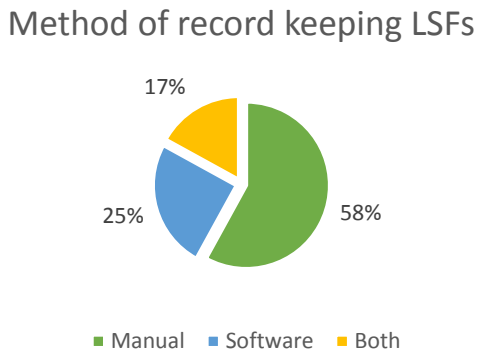
Likewise, use of farm recording software that captures Key Performance Indicators and economic performance (profitability) of the farm is still an infancy stage and hardly used in Kenya. SNV KMDP developed a tool called DairyNomics and piloted this in 20 farms in Kenya (smallholders and MSFs). It has a set of farm recording modules that need to be filled in manual and to be fed into an App.

The market for these and other softwares for herd and farm management is not big, however significantly larger than the modest use of these tools would indicate now. There are an estimated number of 2,000 dairy farms in Kenya with more than 50 cows (including young stock) and if properly used, the UA and DairyNomics tools give very powerful insight in the quality of farm management and where losses are made. This almost immediately can be translated into reduced losses and higher profits (or profits instead of losses). The marketing of these tools however requires a lot of training and "seeing is believing", e.g. by taking small groups of farmers to a farm where the tools are successfully applied. Both tools are very useful for those in Dairy Advisory Services as they enable the advisor to based his understanding of the fam and advise facts and trends that cannot be observed during farm visits/walks and interviews with the manager.

| **Strength** | **Weakness** |
|---|---|
| - Segment of entrepreneurial farmers is growing.<br>- Farming is more and more seen as a business rather than a hobby<br>- Young farmers/staff well educated and well versed with ICT applications | - Weak culture of record keeping and mainly manual<br>- Software is seen as extra workload<br>- Software is expensive (yearly subscription fee!)<br>- Value of records not yet seen, ability to analyse figures limited |
| **Opportunity** | **Threat** |
| - Collaboration with other input suppliers such as AI/vets, suppliers of young stock, cow barn designers, dairy advisory<br>- Collected data on farms is valuable for other use | - Low uptake and need for intensive training<br>- Cheaper softwares in the market |

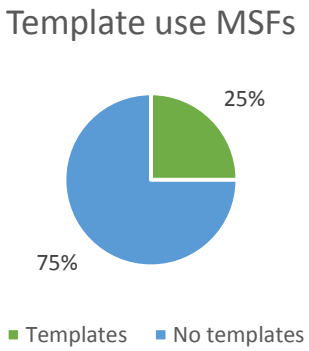
### *Record Keeping Method*

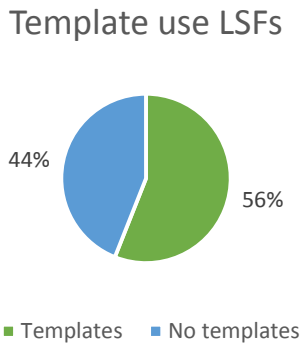



All MSFs and LSFs keep some sort of record. Manual is for both MSFs (69%) as LSFs (58%) the predominant way of record keeping. The percentage of software use for record keeping doubles in LSFs to 25%.

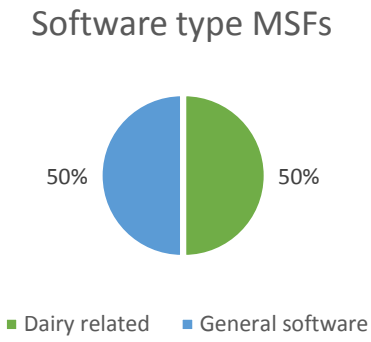
### *Record keeping sheets (pre-printed like cow cards)*

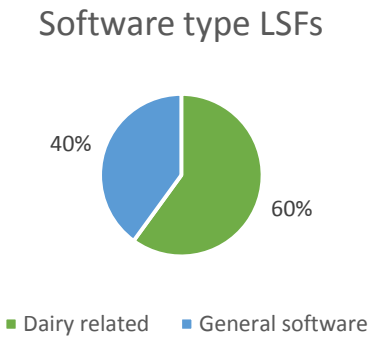



75% of MSFs do not use templates for manual record keeping, they just use a note book or something similar. Whereas this was only the case for 44% of LSFs.

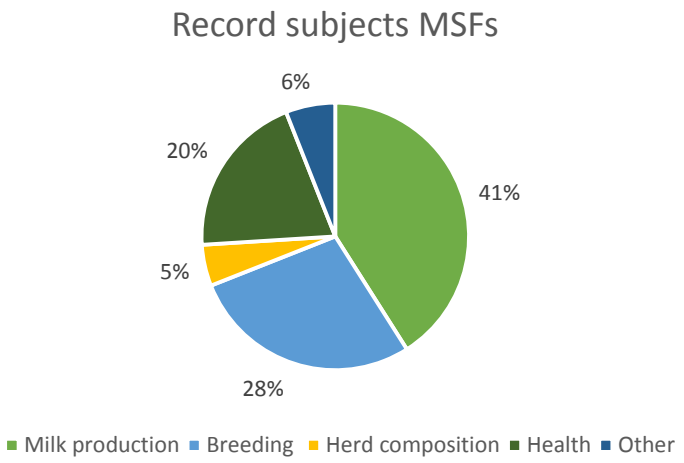
### *Software type*

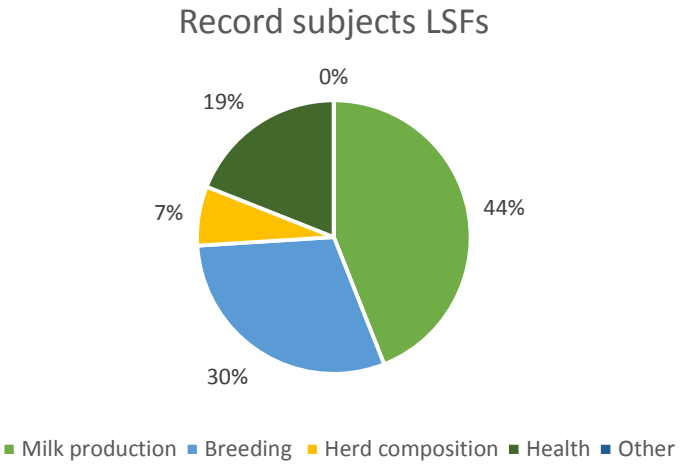



MSFs and LSFs that use software, use two types of software. Software designed for dairy cattle, and general software e.g. Excel. 60% of LSFs the use dairy designed. Remarkable was that one LSF uses electronic cow collars as support for its record system.

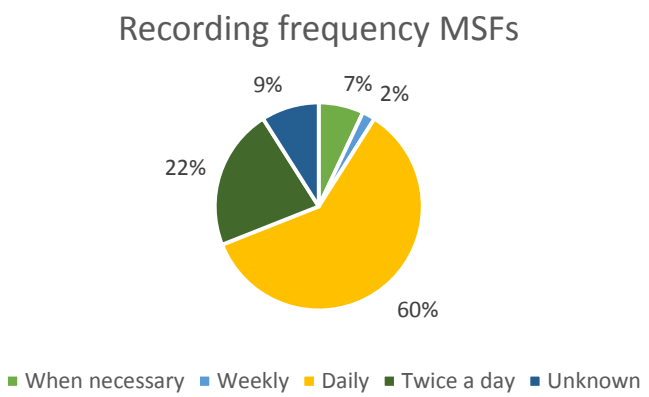
### *Record Keeping Subjects (Frequency)*

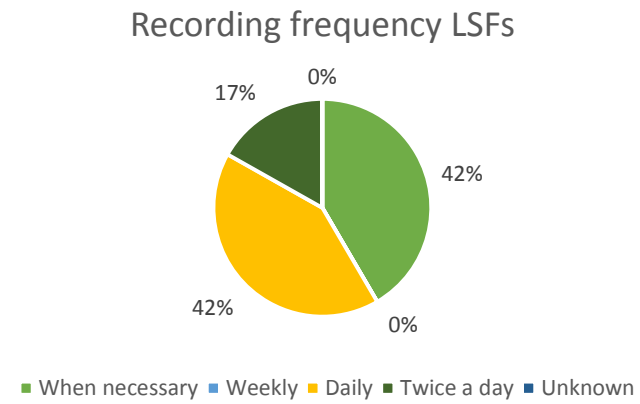



All farms keep records of milk production and some also record other areas of concern. 41% for MSFs and 44% for LSFs record milk production only. Breeding records are kept consistently by 28%-30% of LSFs. These are not necessarily AI records, as some merely keep record of which bull is used in case of bull services and when a cow was inseminated, where AI was used.

### *Record Keep Frequency*




60% of MSFs keeps records daily; 22% keeps records twice a day, especially for milk production. For LSFs the figures are unclear due to the large % of unknown that came out of the deep scans.

### 6.4.2 Cooperatives

In Kenya there are a number of suppliers of software packages in the market that offer so-called ERP software systems to cooperatives. These are systems for individual supplier/member milk recording (weighing, price and quality parameters), members' payments, input supply and check off system, and they are often integrated with accounting modules, employee's management, payroll and stores management. Brands in the market are CoopWorks, EasyMa, Anchor, Agri-Works, Sage, Safaricom CFA, Virtual City.

## 6.5 Cow House Design and Interiors

The market for Dutch ISPIs that specialize in cow house design and interiors is predominantly with MSFs and LSFs. Especially those that have zero or semi zero grazing systems, which are the vast majority. Under KMDP two publications were released for cow housed design: Modular Cow House Design for MSFs and Modular Cow House Design for Smallholder Dairy Entrepreneurs.
(www.cowsoko.com/KMDP)

In general it is safe to conclude that cow house design in Kenya has huge problems as regards to understanding and implementing the basic principles of good cow house design. This applies e.g. to the siting of the cow house vis a vis other structures on the farm, the fields, road access, topography, wind direction and logical the flows in the farm (labour, machinery, manure, feed, milk etc.), ventilation, hygiene, labour efficiency, size and material of cubicles and cow comfort, and so on and so forth.

Specialist cow house advisory services are largely an unknown phenomenon in Kenya, and architects and contractors are not aware of the functionality requirements of the cow house. Farm owners and investors have a tendency to copy paste what they find on the internet, and then to change the design again to suit their needs or wallet. In practice amongst MSFs and LSFS many avoidable mistakes are found; the wrong and faulty design that is eventually constructed often costs more than if an experienced and knowledgeable cow bar designer had been engaged.

The need for specialist cow barn design is as obvious however as the lack of awareness on the same. Yet MSFs and LSFS, amongst them many new investors and entries in the sector (often telephone farmers with high paying non-agricultural jobs) invest millions of Kenyan shillings in cow houses. Changing this mindset requires exposure, demos and training.
The demand for cow house advisory services and interiors is at 2 levels: existing farms that wish to later or expand structures, and new investors that start from scratch in a zero situation. This market is not big but still significant looking at the existing number of MSF/LSFs in Kenya and of new entrants/investors in the sector. Combining cow house design services with general Dairy Advisory is a way to fast track introduction of good cow barn design in the sector.

## 6.6 Practical Dairy Training and Education, Dairy Advisory

Skills of farmers (farm owners and farm managers) and other workers in the farm is generally low. This applies across the board for smallholders, medium and large scale farms, with few positive exceptions. This knowledge gap is wide and cuts across all farm management topics (feeding, fodder production/preservation, calf rearing and young stock management, housing, farm recording, fertility management, etc.). It is the major cause for low productivity and profitability of dairy farming in Kenya.
Kenya lacks adequate infrastructure to provide practical training at all levels: farmers, farm managers and farm workers, training and extensions workers from cooperatives and processors, private dairy advisors, students. The Government extension service has been minimized to a bare minimum during the Structural Adjustment Programmes in the 1990-ies. Many Universities include dairy production and processing in their curriculum but this is academic and not practically oriented. The quality is low and in no way up the standards and requirements that the market demands for.

With the growing demand for milk and dairy products in Kenya and the region, relatively good prices paid per liter of milk and ready market, and awareness of the low competitiveness of the Kenyan dairy sector internationally, the need for practical training and education and the current gap to address has become more and more clear to all sector players. In theory therefore there is a huge market for those ready to invest in - and offer - practical skills development training and education. Yet willingness to pay for training (farmers, managers, consultants) and to finance/invest in training (private sector: cooperatives, processors and industry associations, Universities) is still low. This is partly because training and education is seen as a public good to be provided for by government (which fails to do so) or donors free of charge.
Initiatives at the bottom to fill this gap are provided by dairy farmers who use their farms to train or expose others at a fee, some in a structured manner (Practical Dairy Training Farms). In addition private Dairy Advisory or dairy consultants have emerged that advice farms on total farm management or on certain aspects like fodder production, cow house design, or herd fertility management. Often a combination is thought providing training together with selling a product. In this case input suppliers do part of dairy advisory and training.
This model is slowly making entry amongst the MSF and LSF farms, whose willingness to pay commercial rates for dairy advisory services is still modest but growing. At cooperative level there is a trend that dairy cooperatives set up and finance Training & Extension Departments to give support to their members. These staff however are often unqualified and need to be trained as well.

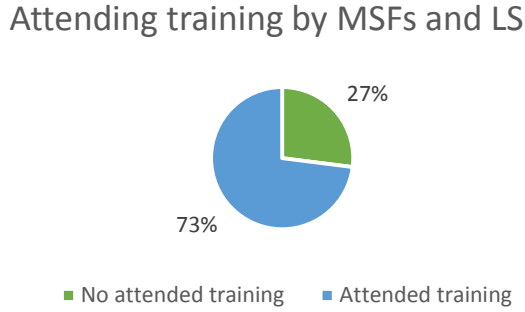
In this scenario there are opportunities at various levels for Dutch service providers. At the MSF/LSF level – but this also applies to an extent to T&E staff and lead farmers of cooperatives - there is opportunity for Dairy Advisory/Extension and Practical Training, e.g. through the model of Practical Dairy Training Centres

(short 1-5 day courses). Preferably in collaboration with local trainers/advisors for market access and cost control.
There is a strong link between Dairy Advisory and record keeping (plus software) as a tool for enhanced farm management performance and profitability. There are many MSFs/LSFs in Kenya that have reached the level that further advice (but also growth) to enhance performance needs to be based on historical data recording of Key Performance Indicators. Dairy Advisory can in this respect also make itself more relevant when it assists, advises, trains farms/farmers to invest in the right tools, to operate them and to use them as a powerful farm management analytical tool.
At the institutional level there is market opportunity for Dutch institutions and organisations (public and private) to link up with progressive Kenyan colleges and universities that wish to make a paradigm shift away from academic to practical training. And are also willing – and aware of the need – to partner with international institutions to fast-track training and education that can match with international standards and developments.

| **Strength** | **Weakness** |
|---|---|
| - The group of entrepreneurial farmers SH, MSF, LSF is increasing fast<br>- Farmers increasingly willing to pay for consultancy<br>- Coops and processors investing in T&E (in-house) | - Many free riders<br>- Much 'wrong' information circulating<br>- Low knowledge starting point from farmers |
| **Opportunity** | **Threat** |
| - Dairy is a growth sector and fast commercialising, dairy as a business concept<br>- Sector stakeholders, incl. universities aware of lack of practical training offering<br>- Dutch funding for practical training and education (NUFFIC, others) | - Subsidized advisory services disrupting the market (donors) |

### 6.6.1 MSFs and LSFs

#### *Training Attendance*




For both MSFs and LSFs attending training, field days or demos is common, as 73% did. As mentioned earlier, training and advisory is the largest farm need.

### 6.6.2 Cooperatives

#### *Training and Extension Officers*


Almost all cooperatives offer some form of training. This is often through collaboration with NGOs, input and service providers, or milk processors. Only 32% of the cooperatives employ their own T&E staff. Out of this more than half have 1 to 5 extension officers. There is a positive correlation between the number of extension officers and the size of milk intake by the cooperatives.

## 6.7 Finance and Fiscal Policies

### 6.7.1 Finance

Although enhanced management capacity and skills are most crucial in the sector, access to finance (own or external capital) is critical too for the growth of the industry. In general, Kenya has a problem with agricultural financing and there are only few banks that have financial products that really suit the agricultural sector. There is lack of willingness by financial institutions to give medium and long term loans, and terms and conditions that suit and understand the needs and risk profile of agricultural enterprises (seasonality, annual cycles, liquidity needs, etc.). Most lending is short term and based on surety through fixed assets/collateral. Interest rates in Kenya are high across the board 12%-18% and up to 22% for micro finance. Dairy farming on the other hand takes within agriculture a more favourable position due to the fact that there is weekly or monthly income and cash flow all year round. Hence external financing is not a huge problem, although much can still be improved.

Many MSFs/LSFs to an important extent finance investments in their farms from own capital, often generated outside the agricultural sector or they have good networks and access to financiers.

Dairy cooperatives and processors have usually reasonable access to financial institutions as well, in combination with private equity, donor funding and co-funding through County Governments (the latter especially counts for smallholder cooperatives). For smallholder farmers there is presence of micro finance offered by a range of financial institutions, including SACCOs. Most dairy cooperatives also

apply a check off system where inputs can be bought on credit in their agrovets and deductions are made from milk payments.
The landscape therefore is not "barren" such that there is no own capital to invest at all, and lack or total absence of financial institutions or products. Certainly there is scope for improvements and financial institutions that specialise in agricultural financing and have more adequate products. Perhaps the most problematic aspect of agricultural finance available, is that it almost solely works on basis of collateral rather than financial performance and ability to repay, and interest rates are high as the IRR in agricultural investments seldom exceeds 10-12%.

One of the most pressing problems of the agricultural sector, including the dairy sector, is delayed payment by retailers, in particular the larger supermarket chains. Nakumat which is the largest supermarket in Kenya with branches across East Africa went into a state of pre-receivership in 2017 and closed most of its operations owing the dairy sector (processors!) a claimed KES 1 billion in arrear payments. This was aggravated by a prolonged drought that saw milk intakes of most processors and cooperatives drop by 30% or more during the 2nd quarter of this year. These "external" factors make an otherwise dynamic growth sector vulnerable. But in the long run the vulnerability of the sector and thus its competitiveness lies with the high cost of raw milk production and the low quality of milk (food safety related). In addition the lack of loyalty between farmers and cooperatives/processors is another weak spot in the sector, as farmers need stable and reliable market/prices for their milk (preferably also linked to quality) to be willing to invest. Whereas for financial institutions strong lasting seller-buyer relationships – preferable backed up by farmer training and input supply – are key to beef up financing of the sector.

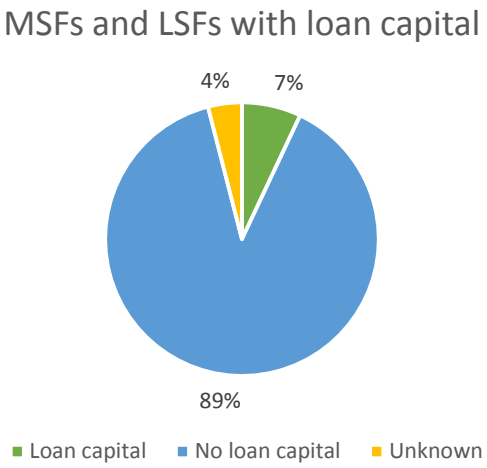
### 6.7.2 Fiscal Policies

As of today, the dairy sector is protected by an import tariff of 60% for milk and dairy products that originate from outside the East African Community. Importation of farm machinery and equipment, and milk cooling and processing equipment, is zero rated (no import duties).

| **Strength** | **Weakness** |
|---|---|
| - Strong financial capacity of MSFs/LSFs<br>- May financial institutions and products<br>- Strong SACCO Sector<br>- Dairy generates income daily (cash flow) | - Financial products not tailored to the needs of the agricultural sector<br>- Mainly short term financing and with collateral only |
| **Opportunity** | **Threat** |
| - Develop suitable agricultural financial products.<br>- Combine finance with training practical skills incl. farm recording<br>- | - High interest rates<br>- Lending to unskilled investors (indebting farmers)<br>- Low competitiveness of the dairy sector in view of ability to compete at the world market if import duty of 60% is reduced |

### 6.7.1 MSFs and LSFs

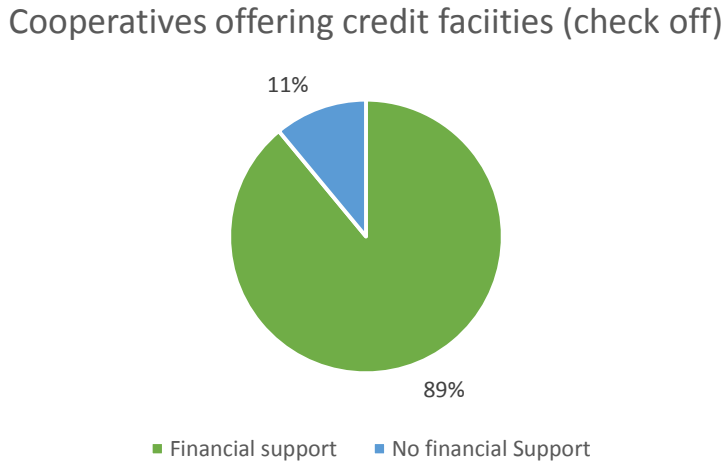
#### *Loan Capital*




Only 7% of MSFs and LSFs have loans. 4% was not aware having loans or debts. In most cases it seems that MSFs/LSFs finance investments in the farm from income generated elsewhere (non-farm), rather than through loans.

### 6.7.2 Cooperatives

#### *Credit facilities*




89% of the cooperatives provide their farmers with a form of pre-financing. This goes often together with the agrovet shop, where farmers can get inputs on credit and pay back through milk deliveries (so called check off system).

# 7. Conclusion and Recommendations

## 7.1 Conclusions

a) The Kenya dairy sector is the largest in Africa and milk consumption per head of population the highest (115 liters per year, with a population of 48 million of which 27% in urban centers). Fast urbanization and growing middle class further spur the demand for processed milk and dairy products like yoghurts, mala, ghee, butter, cheese. The market forms a strong pull factor and results in relatively high prices per liter of raw milk paid to farmers. The sector is in a transition phase with fast commercialisation of smallholders and a growing segment of medium and large scale farmers. The latter are often telephone farmers with land and capital to invest in dairy and well-paid off-farm employment or businesses. Added to this are corporate investors targeting vertically integrated investments in dairy production and processing (500 cows or more).

b) Alongside this scenario of growth, ongoing investments and commercialisation, the weaknesses and bottlenecks in the sector also become more evident: the skills and knowledge gap, the feed and fodder gap, low productivity per land unit and per animal, high cost price and poor quality of milk.

c) In this dispensation of on one hand a growth-market and a "sector in transition" with stakeholders who are exposed and willing to invest, but on the other hand an industry that is still characterized by many inefficiencies and gaps as regards to knowledge, input supply and services, there is an opportunity for B2B relations with international credible and highly knowledgeable ISPIs. Especially if these ISPIs have a longer term vision and plan for market penetration, are willing to be locally present and visible, and do not only "push" products but also offer knowledge/training and after sales services. Provided also the products and services are tailored to relevant the Kenyan needs and affordable.

d) This national trend of sector transition also applies to North Rift, which is the most potential growth area for dairy in Kenya due to the agro-ecological conditions and large farms. It is traditionally considered as Kenya's bread basket and the rate of mechanization is highest in this part of the country.

e) In North Rift an estimated 1 billion litres of milk is produced annually of which approx. 30% is processed. All national processors source milk from this region, including some local processors. This milk is produced by a mixture of smallholders and medium and large scale farmers.

f) The region has 90 active dairy cooperatives with a membership of 95,000 of which 35,000 are active milk suppliers, most of them smallholders. This number is likely to be significantly larger as not all smallholders deliver milk to these cooperatives. Some sell directly to processors, others to traders who operate in the informal sector. In total these 90 cooperatives collect daily 312,000 litres of milk from 35,000 active milk suppliers. Almost all have agrovet shops and sell dairy meals, seeds, fertilizers and veterinary products; many provide AI services and some also provide agricultural contracting services.

g) In addition, the North Rift and especially the Counties Uasin Gishu, Nandi and Trans Nzoia (Kitale District) is home to large number of Medium and Large Scale farmers of which the exact number is not known but estimates are over 500 MSFs and 50-100 LSFs.

h) The deep scans for MSFs (45) and LSFs (12) concentrated on Uasin Gishu, Trans Nzoia and Nandi County, were commercialisation of dairy is highest. Average land holdings for the deep scanned MSFs and LSFs were respectively 306 acres and 1,127 acres, average daily milk production 245 versus 1,206 litres and average herd size 71 for MSFs and 284 cows for LSFs. The total number of MSFs and LSFs in these three counties is considerable higher than the number used for the deep scan and further inventarisation is still ongoing.

i) For a processor based in Eldoret (or Nakuru) that is interested to source milk in Uasin Gishu and Nandi Counties and Kitale District, nearness to Nakuru is an advantage as in Nakuru County - along the Eldoret-Nakuru corridor towards the direction of Eldoret – a cluster of MSFs and LSFs is present. Here 8 MSFs and 5 LSFs are found within a radius of 50 km who together have 3,648 cows and produce daily 20,354 kg of milk.

j) The aggregated demand for inputs and services by these farmers, their cooperatives, milk processors, and the local input and service providers is tremendous. However largely as a result of lack of knowledge and availability in the market, often the "cheapest" solutions are being sought and Dutch ISPIs need to compete with sometimes sub-standard products imported from countries such as India, China, Turkey and Brazil, or locally fabricated and imitated. Awareness however for quality products and services is on the rise and through demos, pilots, field days, exposure visits, training and targeted marketing, the concept of "seeing is believing" has proven so far to be effective in changing the mindsets of professional (or professionalizing) dairy entrepreneurs.

k) A cluster of Dutch ISPIs working together on different inputs and services, as is already to some extent the case in Eldoret/North Rift and is also emerging around Nairobi in Central Kenya, is instrumental for cross-fertilization, mutually reinforcing fast tracking penetration of Dutch Kenyan B2B.

l) Professionalising Kenyan dairy farmers, farmer organisations and processors lack consistent supply of quality inputs and services supply. Farmers prefer ISPIs who are locally present – thus who do not work solely via a distributor but have international expertise on the ground.

m) There is a misconception on part of most Dutch ISPIs that Kenyan dairy stake-holders across the board lack financial resources or have no access to financial sources, to invest in dairy and to purchase quality inputs and services.

## 7.2 Recommendations

When entering the Kenyan market, strategy is as important as the product or the service offered.

a) The market study showed that local presence is important for Dutch ISPIs to start and scale-up business. It assures better understanding of the local needs and business culture, it creates stronger connections and trust with clients, and – also – it enhances the ability to adapt the product, service or business model to the local situation/needs. This all helps to minimize "wrong" use of products, services and advise and – hence - "bad press". Dutch ISPIs with local presence by an international expert, beefed up with local staff, distributors or sales agents, are at a great advantage as compared to those doing business from the Netherlands – with or without having a local agent.

b) In Kenya many local and international companies provide inputs and services for the dairy sector. The market to some extent is crowded, however most companies "push" products without giving much advice, training, and after sales service. The business culture in Kenya is very much to sell what is good for the supplier (sales person), rather than to think in the interest of the client and to build up a long term business relationship. This of course varies from product to product and client group to client group, but this culture of "hit and run" is much embedded in the Kenya way of doing business. Also "dairy" knowledge is often lacking abundantly by those who push these products. At the same time the culture of Kenyan investors on the other hand is that they often prefer and go for low price low quality, partly however because of lack of knowledge on the functional use of the product, quality and durability.
Here is an opportunity for Dutch ISPIs to differentiate themselves by offering complete packages: needs assessment, tailor made products/ services, training and advisory. This model however is relatively costly and therefore needs to focus on a clear target group and pre-assessment whether the clients appreciate and acknowledge the need for such approach, and are willing (and able) to pay for it. It also requires demonstration and awareness raising and often speaking to clients or groups of clients "who don't know what they don't know".

c) One way of buying down initial costs of market scanning, awareness raising, piloting, demos and targeted marketing, is to work together with development organizations like SNV, Agriterra, or other Dutch and international donor funded organisations that support the dairy sector. In addition the Netherlands Government has a number of private sector development initiatives that may be interesting for the Dutch ISPIs that wish to penetrate the market in Kenya or to expand ongoing business. See: https://www.rvo.nl/subsidies-regelingen

d) Kenyan dairy stakeholders expressed the need for consistent supply. As they get used to certain products, and rely on them, it disrupts daily farm practices when the product is (temporarily) unavailable. This undermines brand loyalty. When farmers recognize the quality of the product and are guaranteed of consistent supply it will enhance brand loyalty.

**Summary Market Needs, Perceptions of ISPIs and Market Strategies Found**

| Needs Kenyan Clients | Perceptions Dutch ISPIs | Strategies Found |
|---|---|---|
| - ISPI needs to be locally present.<br>- Products must be adapted to local needs and circumstances and must be affordable and reliable.<br>- Products must go with advise, training and after sales care (maintenance, spares)<br>- Consistency in supply, make sure the product or service is always available and the product can always be used. | - Low education/skills level throughout the whole chain.<br>- Lack of financial means and capital to invest across the dairy value chain.<br>- Lower work ethics compared to the Netherlands.<br>- Fast growing dairy sector and middle class.<br>- Kenya is the economic hub in East Africa.<br>- More informal structures<br>- Without a proper (local) network doing business is very difficult | - Local agent/distributor, ISPI not present in Kenya; relying on a distributor. Often bulk products:<br>*Relatively low training needed for sales and use of the products.<br>*Low adaptation needed to the Kenyan market.<br>*Relatively low priced<br>- Strict selection/targeting of clients to minimize costs and assure successful match. Exchange visits, personal approach. Usually products with high investment costs. Strong focus on advice and after sales care to ensure the right use and good press.<br>- Local presence in Kenya and working with local staff/ team, close to the clients. Demos in Kenya: 'seeing is believing'. |

# Annex 1. Deep Scanned MSFs/LSFs in North Rift
## (plus Quick Scan MSFs/LSFS Eldoret-Nakuru Corridor)

**QUICK SCAN DATA: Medium and Large Scale Dairy Farms in North Rift**
(including Eldoret-Nakuru Corridor)

| | Name | County | Peak kg | Off peak kg | Daily Average Prod | Daily Av prod per cow | herd size | lact. herd | Processor | Price peak | Price off peak | Milking machine | Cooling tank capacity |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Maraba Farm | UG | 800 | 600 | 667 | 12.8 | 202 | 52 | Tarakwo cooperative | 30 | 36 | YES | 500 |
| 2 | Peris Simam Farm | UG | 150 | 50 | 83 | 6.4 | 50 | 13 | Tarakwo Cooperative | 33 | 40 | NO | NO |
| 3 | Simam | UG | 600 | 500 | 533 | 11.9 | 83 | 45 | Tarakwo Cooperative | 30 | 35 | YES | 2000 |
| 4 | Kapsuswo | UG | 2700 | 2700 | 2700 | 19.3 | 350 | 140 | ATM/ Doinyo Lessos | 50 | 50 | YES | 2000 |
| 5 | Lacata | UG | 150 | 100 | 117 | 11.7 | 30 | 10 | Daima | 30 | 30 | NO | NO |
| 6 | Plateau Country Dairies | UG | 500 | 420 | 447 | 16.5 | 42 | 27 | Farm marketing | 45 | 50 | YES | 1000 |
| 7 | Seregon Farm | UG | 800 | 500 | 600 | 12.3 | 106 | 49 | NKCC | 33 | 40 | YES | 500 |
| 8 | Kapkugo | UG | 1000 | 800 | 867 | 13.8 | 200 | 63 | NKCC | 33 | 43 | YES | NO |
| 9 | Willens | UG | 468 | 396 | 420 | 23.3 | 58 | 18 | Brookside/ hotels | 28 | 52 | YES | 600 |
| 10 | Komool Farm | UG | 250 | 160 | 190 | 11.9 | 40 | 16 | Farm marketing | 40 | 60 | NO | NO |
| 11 | Eldoret Polytechnic | UG | 320 | 260 | 280 | 14.0 | 58 | 20 | NKCC/farm marketing | 40 | 65 | YES | NO |
| 12 | Oitos Farm | UG | 250 | 160 | 190 | 11.9 | 46 | 16 | Hawker | 31 | 45 | YES | 500 |
| 13 | DL Farm | UG | 400 | 270 | 313 | 10.4 | 140 | 30 | NKCC /farm marketing | 35 | 42 | YES | NO |
| 14 | Samo Farm | UG | 350 | 200 | 250 | 5.8 | 100 | 43 | Hawkers | 40 | 44 | YES | NO |
| 15 | Illula Farm | UG | 355 | 286 | 309 | 10.7 | 84 | 29 | Farm marketing | 40 | 50 | NO | NO |
| 16 | Chumo Farm | UG | 234 | 180 | 198 | 15.2 | 40 | 13 | NKCC | 28 | 34 | NO | NO |
| 17 | Makongi Farm * | UG | 1300 | 1000 | 1100 | 16.7 | 310 | 66 | Daima | 32 | 43 | YES | NO |
| 18 | Belekenya Farm | UG | 400 | 250 | 300 | 9.4 | 125 | 32 | Megungaa FCS | 35 | 40 | NO | NO |
| 19 | Nairobi Ndogo | UG | 300 | 250 | 267 | 14.8 | 33 | 18 | Chepkorio Dairies | 32 | 80 | YES | NO |
| 20 | Chego Farm | UG | 900 | 900 | 900 | 25.7 | 108 | 35 | NKCC /ATM | 40 | 52 | YES | 1200 |
| 21 | Kibulogon Farm | UG | 150 | 77 | 101 | 3.9 | 120 | 26 | Sirikwa | 30 | 38 | NO | NO |
| 22 | Yegen Farm | UG | 185 | 185 | 185 | 12.3 | 100 | 15 | Sugoi FCS | 32 | 37 | YES | NO |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 23 | Pinedale Farm | UG | 139 | 70 | 93 | 3.4 | 63 | 27 | NKCC | 33 | 40 | NO | NO |
| 24 | Joseph Farm | UG | 140 | 90 | 115 | 9.7 | 35 | 11 | NKCC | 33 | 40 | NO | NO |
| 25 | Kabarchaket Farm | UG | 114 | 80 | 91 | 13.1 | 11 | 7 | NKCC | 29 | 38 | NO | NO |
| 26 | University of Eldoret | UG | 700 | 500 | 567 | 11.3 | 187 | 50 | Processor/school | 35 | 40 | YES | NO |
| 27 | Pioneer Farm | UG | 92 | 74 | 80 | 6.2 | 24 | 13 | School | 35 | 40 | NO | NO |
| 28 | Sakong | UG | 560 | 560 | 560 | 18.7 | 110 | 30 | Shop/schools | 50 | 70 | YES | 510 |
| 29 | Kibomet | TN | 180 | 80 | 113 | 4.5 | 60 | 25 | NKCC | 28 | 45 | NO | NO |
| 30 | Westwood Farm | TN | 1692 | 940 | 1191 | 12.7 | 440 | 94 | Daima | 30 | 38 | YES | NO |
| 31 | Khisa | TN | 1920 | 1560 | 1680 | 13.8 | 400 | 122 | Daima | 30 | 40 | YES | 3000 |
| 32 | Endakano Farm | TN | 135 | 135 | 135 | 19.3 | 23 | 7 | Farm marketing | 40 | 40 | YES | NO |
| 33 | Aluda Farm | TN | 120 | 60 | 80 | 7.3 | 20 | 11 | Hawker | 28 | 32 | NO | NO |
| 34 | Emjay Farm | TN | 445.5 | 330 | 369 | 11.2 | 78 | 33 | Farm marketing | 40 | 45 | YES | 500 |
| 35 | Rimo Farm | TN | 210 | 160 | 177 | 8.8 | 57 | 20 | Farm marketing | 40 | 60 | YES | NO |
| 36 | Bubayi Farm | TN | 1400 | 1075 | 1184 | 11.8 | 270 | 100 | Doinyo Lessos | 36 | 43 | YES | 6000 |
| 37 | Chesowos Farm | TN | 915 | 610 | 712 | 11.7 | 173 | 61 | Farm marketing | 40 | 60 | NO | NO |
| 38 | Eldoret Express Farm | TN | 700 | 300 | 434 | 12.4 | 82 | 35 | Hawker | 40 | 40 | NO | NO |
| 39 | Kalua farm | TN | 500 | 250 | 334 | 5.8 | 110 | 58 | Farm marketing | 40 | 55 | NO | NO |
| 40 | Njoroge Farm | TN | 760 | 500 | 587 | 18.9 | 71 | 31 | Markets | 40 | 45 | YES | NO |
| 41 | Lesmat A farm | TN | 150 | 138 | 142 | 8.9 | 35 | 16 | Schools | 35 | 35 | NO | NO |
| 42 | Kuza Farm | TN | 100 | 60 | 73 | 18.3 | 41 | 4 | NKCC | 24 | 43 | NO | NO |
| 43 | Sango Farm | TN | 400 | 300 | 333 | 8.3 | 127 | 40 | Farm marketing | 45 | 45 | NO | NO |
| 44 | Sirwo Farm | TN | 400 | 250 | 300 | 9.7 | 110 | 31 | Markets | 40 | 45 | YES | NO |
| 45 | Lesmat-B Farm | TN | 600 | 350 | 434 | 4.0 | 329 | 108 | Hawker | 35 | 35 | NO | NO |
| 46 | ADC Namandala | TN | 2200 | 1000 | 1401 | 14.6 | 346 | 96 | NKCC | 40 | 43 | YES | 1500 |
| 47 | ADC Katuke | TN | 2000 | 1200 | 1467 | 11.6 | 500 | 126 | NKCC | 40 | 43 | NO | NO |
| 48 | Baraton Univ Farm | NA | 650 | 470 | 530 | 12.9 | 131 | 41 | Farm marketing | 30 | 50 | YES | 1000 |

| | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 49 | Kaimosi ATC Farm | NA | 200 | 120 | 147 | 7.3 | 58 | 20 | Farm marketing | 33 | 40 | NO | NO |
| 50 | Kapchemung Farm | NA | 127 | 127 | 127 | 12.7 | 36 | 10 | NKCC | 28 | 37 | YES | NO |
| 51 | Barno farm | NA | 162 | 112 | 129 | 9.2 | 32 | 14 | NKCC | 28 | 35 | NO | NO |
| 52 | Tanui farm | NA | 130 | 110 | 117 | 7.8 | 26 | 15 | NKCC | 33 | 36 | NO | NO |
| 53 | Kaiboi Institute Farm | NA | 130 | 91 | 104 | 14.9 | 26 | 7 | Kabiyet Dairies | 25 | 40 | NO | NO |
| 54 | Kimong Farm | NA | 300 | 200 | 233 | 10.6 | 56 | 22 | Tanyakina Cooperative | 27 | 37 | YES | NO |
| 55 | Kopoch Farm | NA | 150 | 100 | 117 | 4.3 | 65 | 27 | Lelbren | 36 | 43 | NO | NO |
| 56 | Nellies Ltd co Farm | NA | 120 | 120 | 120 | 8.6 | 33 | 14 | ATM/farm marketing | 38 | 60 | YES | NO |
| 57 | Rono's Farm | NA | 200 | 200 | 200 | 13.3 | 26 | 15 | Lelbren/shop | 40 | 50 | YES | NO |
| 58 | Joy Farm | Nakuru | 380 | 280 | 313 | 20.9 | 31 | 15 | NKCC | 40 | 50 | YES | Unknown |
| 59 | Wachira Farm | Nakuru | 280 | 100 | 160 | 9.4 | 42 | 17 | Locally | 35 | 40 | NO | Unknown |
| 60 | Ngera Farm | Nakuru | 350 | 350 | 350 | 17.5 | 50 | 20 | Milk Shop, Dairy | 38 | 40 | YES | Unknown |
| 61 | Gitonga Farm * | Nakuru | 400 | 200 | 267 | 10.7 | 30 | 25 | Wanyororo Dairy | 50 | 60 | NO | Unknown |
| 62 | Njau Farm | Nakuru | 250 | 150 | 183 | 8.7 | 56 | 21 | School, Locally | 40 | 40 | NO | Unknown |
| 63 | Thayu Farm | Nakuru | 150 | 120 | 130 | 21.7 | 40 | 6 | Milk Shop | Unknown | Unknown | NO | Unknown |
| 64 | Gweyani | Nakuru | 150 | 70 | 97 | 10.7 | 15 | 9 | Wanyororo Dairy | Unknown | Unknown | NO | Unknown |
| 65 | Kagia Farm * | Nakuru | 200 | 80 | 120 | 13.3 | 11 | 9 | Milk Shop | Unknown | Unknown | NO | Unknown |
| 66 | Rawhide Farm | Nakuru | 1500 | 800 | 1034 | 10.3 | 250 | 100 | BioFoods | 45 | 45 | YES | Unknown |
| 67 | Chemusian Farm | Nakuru | 8000 | 6500 | 7001 | 14.0 | 820 | 500 | Raw, ATM, Brookside | Unknown | Unknown | YES | Unknown |
| 68 | WER | Nakuru | 1100 | 1100 | 1100 | 11.2 | 478 | 98 | Biofoods | 45 | 45 | YES | Unknown |
| 69 | Technology Farm | Nakuru | 5000 | 5000 | 5000 | 16.7 | 800 | 300 | Processor | 28 | 35 | YES | Unknown |
| 70 | Gogar Farm | Nakuru | 4600 | 4600 | 4600 | 20.4 | 1025 | 225 | BioFoods | 45 | 45 | YES | Unknown |

**Unreliable data may occur*

# Annex 2. List of Active Dairy Cooperatives in North Rift
## (plus Kakamega County)

| QUICK SCAN DATA: Active Dairy Cooperatives in North Rift (including Kakamega County) | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **No** | **COOPERATIVE NAME** | **Total Number Members** | **Total Number ACTIVE MEMBERS** | **Liters delivered last 12 months** | **Average Daily Delivered in Ltrs** | **off peak price (KES)** | **peak price (KES)** | **County** |
| 1 | Tarakwa FCS | 200 | 99 | 292350 | 801 | 30 | 34 | UG |
| 2 | Muungano | 200 | 68 | 268300 | 735 | 33 | 30 | UG |
| 3 | Cherengany | 2085 | 3000 | 6090000 | 16685 | 38 | 31 | TN |
| 4 | Mois bridge | 4000 | 2500 | 5118000 | 14022 | 30 | 34 | UG |
| 5 | Sirikwa | 6800 | 2000 | 4630000 | 12685 | 35 | 32 | UG |
| 6 | Cheptiret | 250 | 120 | 1096000 | 3003 | 40 | 36 | UG |
| 7 | Tarakwo | 3800 | 800 | 3290500 | 9015 | 40 | 26 | UG |
| 8 | Megun Gaa | 400 | 300 | 377400 | 1034 | 36 | 30 | UG |
| 9 | Kipsamo | 95 | 95 | 426500 | 1168 | 40 | 35 | UG |
| 10 | Metkei | 130 | 50 | 401700 | 1101 | 34 | 32 | UG |
| 11 | Kipseed | 25 | 20 | 31640 | 87 | 34 | 32 | UG |
| 12 | Kabiyet | 13500 | 4000 | 6700000 | 18356 | 30 | 28 | NA |
| 13 | Tuiyotich | 185 | 185 | 329050 | 902 | 29 | 40 | UG |
| 14 | Progressive | 300 | 150 | 518000 | 1419 | 28 | 32 | UG |
| 15 | Chagaiya | 150 | 100 | 243500 | 667 | 36 | 27 | UG |
| 16 | Timboroa | 460 | 89 | 182800 | 501 | 33 | 25 | UG |
| 17 | Ainabkoi | 900 | 900 | 1163700 | 3188 | 34 | 28 | UG |
| 18 | Chepkorio | 6500 | 3500 | 2985000 | 8178 | 39 | 25 | UG |
| 19 | Metkei | 1800 | 900 | 901600 | 2470 | 34 | 27 | KE |
| 20 | Kong'esis | 150 | 100 | 243500 | 667 | 37 | 29 | UG |
| 21 | Lelbren | 12000 | 3000 | 3411000 | 9345 | 40 | 31 | NA |
| 22 | Lessos FCS | 4900 | 2500 | 2680000 | 7342 | 37 | 39.8 | NA |
| 23 | Lelbren satellite | 986 | 185 | 840850 | 2304 | 40 | 36 | UG |
| 24 | Lessos satellite | | | 0 | 0 | 40 | 36 | |
| 25 | Tuiyo | 90 | 20 | 121900 | 334 | 29 | 26 | UG |
| 26 | Sugoi Alliance | 577 | 250 | 524200 | 1436 | 38 | 28 | UG |
| 27 | Sosiani FCS | 350 | 200 | 853000 | 2337 | 40 | 30 | UG |
| 28 | Kaptabey FCS | 200 | 80 | 608000 | 1666 | 35 | 20 | |
| 29 | Mateeny FCS | 196 | 196 | 82870 | 227 | 35 | 28 | UG |
| 30 | Turbo top dairies | 7400 | 4000 | 2193000 | 6008 | 36 | 27 | UG |
| 31 | Kapkochur Satell | 1610 | 160 | 438900 | 1202 | 36 | 29 | EM |
| 32 | Koisungur cooler | 1292 | 200 | 561000 | 1537 | 36 | 32 | EM |
| 33 | Nyenyilel FCS | | | 0 | 0 | | | |
| 34 | Cheptongei | 935 | 30 | 365500 | 1001 | 36 | 32 | EM |
| 35 | Kapsisywo FCS | 120 | 41 | 109550 | 300 | 35 | 25 | NA |
| 36 | Makiu | 120 | 60 | 170500 | 467 | 37 | 35 | NA |
| 37 | Kapkuto | 50 | 50 | 804400 | 2204 | 36 | 28 | NA |
| 38 | Cheda | 2000 | 550 | 341200 | 935 | 35 | 30 | NA |
| 39 | 3 Ton Dairies | 300 | 100 | 255900 | 701 | 36 | 28 | NA |
| 40 | Kapsitwet | 100 | 100 | 304850 | 835 | 38 | 33 | TN |
| 41 | Tuigowin | 25 | 25 | 25550 | 70 | 35 | 28 | TN |
| 42 | Kiminini | 150 | 30 | 95020 | 260 | 34 | 34 | TN |
| 43 | Naitiri | 8065 | 1503 | 1411900 | 3868 | 34 | 34 | TN |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 44 | Taito | 300 | 140 | 243600 | 667 | 34 | 28 | TN |
| 45 | Stat Fresh | 104 | 73 | 194750 | 534 | 33 | 33 | TN |
| 46 | Mwaita | 1700 | 700 | 1218000 | 3337 | 33 | 33 | TN |
| 47 | Mubere | | | 0 | 0 | | | TN |
| 48 | Endebes | 450 | 42 | 852000 | 2334 | 42 | 35 | TN |
| 49 | Aldaai | 510 | 220 | 621000 | 1701 | 30 | 30 | NA |
| 50 | Cheptil | 500 | 20 | 170700 | 468 | 33 | 28 | NA |
| 51 | Kiungani | 45 | 25 | 66950 | 183 | 33 | 25 | TN |
| 52 | Machewa | 200 | 65 | 73000 | 200 | 35 | 35 | TN |
| 53 | Meboot | 475 | 55 | 158450 | 434 | 30 | 22 | TN |
| 54 | Lelan Highland | 3344 | 664 | 779845 | 2137 | 36 | 25 | WP |
| 55 | Tabach | 4000 | 471 | 219300 | 601 | 36.8 | 27.8 | WP |
| 56 | Tepamosop | 600 | 260 | 400705 | 1098 | 36 | 32.8 | WP |
| 57 | Saina | 285 | 36 | 302110 | 828 | 36.8 | 27.8 | WP |
| 58 | Kaptarakwa | 500 | 200 | 195000 | 534 | 35 | 25 | EM |
| 59 | Metkei Mulit Prps | 600 | 400 | 926400 | 2538 | 34 | 29 | EM |
| 60 | Ndalu Coop | 578 | 44 | 341200 | 935 | 38 | 22 | BU |
| 61 | Kikai DFC | 472 | 200 | 158250 | 434 | 35 | 35 | BU |
| 62 | Chepyuk | 78 | 30 | 25515 | 70 | 33 | 33 | BU |
| 63 | Kimalewa FCS | 861 | 42 | 13365 | 37 | 35 | 35 | BU |
| 64 | Kitinda | 1000 | 600 | 304300 | 834 | 40 | 40 | BU |
| 65 | Tongareni DFC | 180 | 120 | 170500 | 467 | 38 | 28 | BU |
| 66 | Bumula | | | 0 | 0 | | | BU |
| 67 | Cheptais | | | 0 | 0 | | | BU |
| 68 | Kimilili | | | 0 | 0 | | | BU |
| 69 | Chwele FCS | 70 | 15 | 13608 | 37 | 45 | 45 | BU |
| 70 | Bungoma FCS | | | 0 | 0 | | | BU |
| 71 | Torongo FCS | 2000 | 1200 | 3774000 | 10340 | 40 | 30 | BA |
| 72 | Langas Farmers | 874 | 370 | 450800 | 1235 | 40 | 30 | BA |
| 73 | Sabatia | 3600 | 1600 | 1948500 | 5338 | 49 | 37 | BA |
| 74 | Kiplombe FCS | 2200 | 1400 | 487500 | 1336 | 40 | 30 | BA |
| 75 | Mumberes | 4000 | 1715 | 3288000 | 9008 | 40 | 27 | BA |
| 76 | Tenges FCS | 540 | 76 | 85200 | 233 | 60 | 70 | BA |
| 77 | Mwachoni | 317 | 200 | 144656 | 396 | 31 | 27 | BA |
| 78 | Emining | 735 | 460 | 402200 | 1102 | 60 | 40 | BA |
| 79 | Arama FCS | 615 | 300 | 170550 | 467 | 25 | 33 | BA |
| 80 | Mogotio FCS | 3000 | 1200 | 1340000 | 3671 | 50 | 25 | BA |
| 81 | Ikolomani DFCS | 241 | 80 | 177790 | 487 | 60 | 55 | KA |
| 82 | Khwisero FCS | 1164 | 140 | 255750 | 701 | 50 | 45 | KA |
| 83 | Mautuma MC | 300 | 100 | 292500 | 801 | 34 | 32 | KA |
| 84 | Matete Dairies | 200 | 15 | 24350 | 67 | 35 | 35 | KA |
| 85 | Lumakanda | 22 | 22 | 48700 | 133 | 40 | 35 | KA |
| 86 | Munyaki Daima | 150 | 110 | 43840 | 120 | 35 | 30 | KA |
| 87 | Mawe Tatu Coop | 200 | 120 | 152250 | 417 | 34 | 30 | KA |
| 88 | Mumias Farmers P | 35 | 30 | 74250 | 203 | 45 | 45 | KA |
| 89 | East Wanga FCS | 21 | 21 | 109600 | 300 | 45 | 40 | KA |
| 90 | Kakamega FCS | 350 | 63 | 73100 | 200 | 45 | 40 | KA |

# Annex 3. List Dutch ISPIs Interviewed in Netherlands

| Company | Activities | Local Partner in Kenya |
|---|---|---|
| 1. De Heus Koudijs Feeds | Feed concentrates, pre-mixes | QMP Ltd |
| 2. Mueller Tanks | Cooling tanks, equipment | Euro Dairy Ltd |
| 3. Roodbont BV | Cow Signals publications, incl. Cow Signals East Africa editions | Olive Publishers |
| 4. Vetvice - Cow Signals | Training and cow house design | - |
| 5. The Friesian / Bles Dairy EA | Genetics, importation young stock, consultancy | Self |
| 6. CRV Genetics | Genetics, AI | Coopers |
| 7. Dejirine Ltd | Farm machinery and agricultural contrac-ting, milk replacers ((agent Agripoort for dairy equipment) | Self |
| 8. Agripoort | Dairy equipment: cooling tanks, milking parlors, milking machines | Dejirene Ltd |
| 9. Uniform Agri | Herd Management Software | Self |
| 10. DTC | Education, Training, E-Learning | - |
| 11. PUM | Netherlands Senior Export Programme | Self |
| 12. Bio Foods (interviewed in Kenya) | Milk processing | Self |

# Annex 4. List Dutch ISPIs active in Kenya

| Company | Activities | Local Partner in Kenya |
|---|---|---|
| De Heus Koudijs Feeds | Feed concentrates, pre-mixes | QMP Ltd |
| Mueller Tanks | Cooling tanks, equipment | Euro Dairy Ltd |
| Roodbont/Olive | Cow Signals publications, incl. Cow Signals East Africa editions | Olive Publishers |
| Happy Cow Ltd | Milk Processor | Self |
| Bio Foods Ltd | Milk Processor | Self |
| Countryside Dairies (DOB) | Milk Processor | |
| Cow Signals Training | Training | - |
| Bles Dairies EA/The Friesian | Genetics, importation young stock, consultancy | Self |
| Van Den Heuvel | Processing & Cooling Equipment | - |
| CRV Genetics | Genetics, AI | Coopers |
| Dejirine Ltd | Farm machinery and agricultural contracting, milk replacers ((agent Agripoort for dairy equipment) | Self |
| Agripoort | Dairy equipment: cooling tanks, milking parlors, milking machines | Dejirene Ltd |
| FIT Ltd | Baled Fodder, Contracting Serves | Self |
| Nundoroto Ltd | Agricultural Contracting | Self |
| Uniform Agri | Herd Management Software | Vilan Computers |
| ProDairy EA Ltd | Training/ Advisory, Cow House Design | Self |
| DTC | Education, Training, E-Learning | - |
| Ante BV | Cooling & Processing Equipment | - |
| Kanter BV | Cooling & Milking Parlors | Gogar Farm Rongai |
| Firma Dekker | Export young stock | - |
| Nutrifeed, Denkavit, Van Drie Groep | Milk Replacers & Feed for Young Stock | Various agents |
| SoilCares | Feed & Fodder Lab | SoilCares Kenya |
| A.I. Total | Genetics | - |

## Annex 5. Quick Scan

| Farm name | Total Land | Land use for Dairy | Total herd | Lactating Cows | Off peak per Kg/day | Peak per Kg/day | Amount of kg delivered per year | Kg per Cow per day | Kg per Acre per day | Contact Person | Function | County | District | Tel. No. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |

# Annex 6. Deep Scan Questionnaire MSFs and LSFs

| JOINT MARKET STUDY SNV/KMDP II 'FROM AID TO TRADE' FIELD SURVEY QUESTIONAIRE ASSESMENT OF MARKET FOR DUTCH COMPANIES/ INVESTORS IN KENYA DAIRY MARKET. | | | | |
|---|---|---|---|---|
| **Farm** | | | | |
| **Date** | | | | |
| County | | District | | |
| Location | | | | |
| **ADDRESS** | | | | |
| Postal | | | | |
| Town | | | | |
| Website | | | | |
| Contact Farm manager | | Tel. No | | |
| | | Email Address | | |
| Contact Farm Owner | | Tel. No. | | |
| | | Email Address | | |
| Owners' residence on farm | yes | | no | |
| Farm Coordinates | Latitude | | Longitude | |
| Cadastre number | | | | |
| | | | | |
| **LAND DETAILS & USE** | | | | |
| Total Land Size (acres) | | Grazing land (acres) | | |
| Land size for Dairy (acres) | | Bushland (acres) | | |
| Fodder production (acres) | | Land for compounds (acres) | | |
| | | | | |
| **HERD DETAILS** | | | | |
| Total herd | | Total calves | | |
| Lactating cows | | Bull calves | | |
| Heifers | | Cow calves | | |
| Bulls | | Purchased cow | | |
| Breeding bulls | | From whom | | |
| Dry cows | | When | | |
| List Dairy Breeds in the Farm | | Breed | | |
| | | Purchased heifers | | |
| | | From whom | | |
| | | When | | |
| | | Breed | | |
| | | | | |
| **MILK DETAILS** | | | | |
| Milk produced per day (kg) | Peak | | Off Peak | |
| Average production per cow per day (kg) | | | | |
| Milking frequency per day | Once | Twice | Thrice | |
| Milking: | Hand | | Machine | |
| Quality check: | yes | | no | |
| | | | | |

| FINANCIALS | | | | |
|---|---|---|---|---|
| Milk delivered in last one Year (kg) | | | | |
| Formal milk sold per day (kg) | | | | |
| Processor | Peak | | Off peak | |
| | Name | | Price | |
| Cooperative | Peak | | Off peak | |
| | Name | | Price | |
| ATM | Peak | | Off peak | |
| | Name | | Price | |
| Informal Milk sold (kg) | | | | |
| Hawker | Peak | | Off Peak | |
| | Name | | Price | |
| Farm marketing | Peak | | Off Peak | |
| | Name | | Price | |
| Other | Peak | | Off Peak | |
| | Name | | Price | |
| | | | | |
| Cost price KES/kg | | | | |
| Sold Bulls per year | | Price (KES) | | |
| Sold calves per year | | Price (KES) | | |
| Sold heifers per year | | Price (KES) | | |
| Sold cows per year | | Price (KES) | | |
| Sold maize (kg/year) | | Price (KES) | | |
| Sold grass (kg/year) | | Price (KES) | | |
| Sold other crop (kg/year) | | Price (KES) | | |
| Sold machines per year | | Price (KES) | | |
| | | | | |
| Depts./Loans | yes | | no | |
| **FARM RECORDS** | | | | |
| Subjects in data management | | | | |
| Frequency of recording per day | | | | |
| way of recording | | | | |
| Use of templates | yes | | no | |
| | | | | |
| **FARM MACHINERY, EQUIPMENT & FACILITIES** | | | | |
| What | Brand | New/2nd Hand | Purchased where | Capacity |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

| FERTILITY & MORTALITY | | | | |
|---|---|---|---|---|
| Age of 1st Insemination (Months) | | | | |
| Calving Interval (days) | | | | |
| Mortality | | | | |
| | | | | |
| Breeding | | | | |
| Bull | | | | |
| Brands for AI | | | | |
| Costs conventional semen(KES) | | | | |
| Cost sexed semen (KES) | | | | |
| Costs service (KES) | | | | |
| | | | | |
| **CALF REARING** | | | | |
| Way of calve growth measuring | | Frequency of measuring per week: | | |
| Calve growth rate (kg/day) | normal | low | unknown | |
| | | | | |
| Calve Feeding Regime | | | | |
| What | Frequency per day | kg/day | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Calve housing | | | | |
| | | | | |
| **FEED & FODDER MANAGEMENT** | | | | |
| Grazing regime: | Zero-grazed | Free Range | Semi-Zero-Grazed | |
| | | | | |
| Fodder production | | | | |
| What | Acre | Kg | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Purchased feeds per month | | | | |
| What | Brand | Costs | Where purchased | kg |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Describe Cow Feeding Regime | | | | |
| What | Frequency per day | kg | | |
| | | | | |
| | | | | |
| **HUMAN RESOURCES** | | | | |
| Total staff in Dairy | | | | |
| Years of experience in dairy farming | | | | |

| Trainings | | | | |
|---|---|---|---|---|
| Subject | Attended by who of staff | On-Farm/off farm per year | Given by whom | Cost (ksh) |
| | | | | |
| | | | | |
| | | | | |
| | | | | |
| Use of contractors | | | | |
| Name | Activity | Cost (KES) | | |
| | | | | |
| | | | | |
| | | | | |

| **WAY FORWARD** | |
|---|---|
| Strengths of the Farm | |
| Weaknesses of the Farm | |
| Opportunities for the Farm | |
| Threats for the Farm | |
| Needs of the Farm | |
| Sector Development | |
| Familiarity with Dutch ISPIs | |

| | |
|---|---|
| Familiarity with SNV/KMDP | |
| Future projection | |

# Annex 7. Deep Scan Questionnaire Cooperatives

| JOINT MARKET STUDY SNV/KMDP II 'FROM AID TO TRADE' FIELD SURVEY QUESTIONAIRE ASSESMENT OF MARKET FOR DUTCH COMPANIES/ INVESTORS IN KENYA DAIRY MARKET. | | | | | |
|---|---|---|---|---|---|
| **Cooperative name** | | | | | |
| **Date** | | | | | |
| County | | District | | | |
| Location | | | | | |
| **ADDRESS** | | | | | |
| Postal | | | | | |
| Town | | | | | |
| Website | | | | | |
| Contact manager | | Email Address | | | |
| Tel. No. | | Website | | | |
| Contact | | Email Address | | | |
| Tel. No. | | | | | |
| Date of founding | | | | | |
| Owned | Private | | Public | | |
| **General information** | | | | | |
| Core Business: | cooling and bulking | | | | |
| | processing | | | | |
| | marketing | | | | |
| **Milk** | | | | | |
| Received milk total (kg) | Peak | | Off peak | | |
| Milk price paid | Peak | | Off peak | | |
| Milk marketed to | | | Milk price received | | |
| | Brookside | | | | |
| | Nkcc | | | | |
| | Daima | | | | |
| | Others | | | | |
| | | | | | |
| **Membership** | | | | | |
| No. Members | | No. Active members | | | |
| Membership fee 2016 (ksh) | | Membership fee 2017 (ksh) | | | |
| Target group (tick) | Small holder farmer | Medium scale farmers | Large scale farmers | Other: | |
| | | | | | |

| Company information | | | | | |
|---|---|---|---|---|---|
| **Ownership Structure** | | | | | |
| Entity (e.g. cooperatives) | | | | | |
| Member ownership | Yes | No | Number of shares | | |
| Member vote right | Yes / No | | Cost of share | | |
| | | | | | |
| **Machinery** | | | | | |
| What | Brand | Capacity | New/2nd Hand | Year of installation | Service by who |
| Cooling tank | | | | | |
| Trucks/pick-ups/tractors | | | | | |
| Tanker | | | | | |
| | | | | | |
| **Quality check** | | | | | |
| Product | What | When | No. | How | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Employment** | | | | | |
| No. staff | | No. casual staff | | Extension officers | |
| | | | | | |
| **production units** | | | | | |
| production units | yes | no | | | |
| processing done | yes | no | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| | | | | | |
| **Products and services for members** | | | | | |
| **Services and product offer** | | | | | |
| What | yes | no | | | |
| AI storage | | | | | |
| contracting | | | | | |
| calf rearing | | | | | |
| transport | | | | | |
| animal identification | | | | | |
| Agro vet | | | | | |
| | | | | | |
| **Training offer** | | | | | |
| Subject | Location | Price | Target group | How | |
| | | | | | |
| | | | | | |

| Financial/investment support | | | | | | |
|---|---|---|---|---|---|---|
| Is there investment support for members | Yes<br>No | How | | | | |
| | | | | | | |
| **Joint ventures** | | | | | | |
| Who | What | Aid/trade | | | | |
| | | | | | | |
| **Investment decision** | | | | | | |
| Investment capital | | Loans | | From | | |
| Decision makers in company | | | | | | |
| Investment criteria | | | | | | |
| **Future** | | | | | | |
| Strengths | | | | | | |
| Weaknesses | | | | | | |
| Opportunities | | | | | | |
| Threats | | | | | | |
| How is membership commitment established? | | | | | | |
| Links to organizations | | | | | | |
| Sector Development | | | | | | |

| | |
|---|---|
| Familiarity with Dutch ISPIs | |
| Familiarity with SNV/KMDP | |
| Future projection, Commercialization | |

# Annex 8. Summary Deep Scan MSFs, LSFs, Coops

**Feed, Fodder Farm Machinery**

| **Contractor Service Use** | | | |
|---|---|---|---|
| | MSFs and LSFs | MSFs | LSFs |
| Use Contractor | 40% | 42% | 33% |
| Do Not Use Contractor | 30% | 29% | 33% |
| Unknown | 26% | 24% | 33% |
| Contract themselves | 3% | 4% | 0% |
| **Farm Machinery Ownership** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Farm Machinery | 91% | 89% | 100% |
| No Farm Machinery | 9% | 11% | 0% |
| **Tractor Ownership** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Tractor | 87% | 84% | 100% |
| No Tractors | 13% | 16% | 0% |
| **Milk Replacer Use** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Use Milk Replacer | 30% | 11% | 100% |
| No Milk Replacer | 70% | 89% | 0% |
| **Dairy Meal Formulation** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Formulate Dairy Meal | 47% | 41% | 71% |
| Purchase Dairy Meal | 53% | 59% | 29% |

| **Cooperative with Agro Vet** | |
|---|---|
| | Cooperative |
| Agro Vet | 16% |
| No Agro Vet | 84% |

**Cooling Equipment and Processing**

| **Cooling Equipment** | | | |
|---|---|---|---|
| | MSFs and LSFs | MSFs | LSFs |
| Cooling Equipment | 23% | 20% | 33% |
| Cooling Equipment in Use | 16% | - | - |
| Cooling Equipment Not in Use | 11% | - | - |
| No Cooling Equipment | 77% | 80% | 67% |
| **Milking Method** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Manual | 59% | 64% | 42% |
| Milking Machine | 41% | 36% | 58% |
| **Milk Prices per kg** | | | |
| | | MSFs | LSFs |
| Informal | Peak | KES 39 | KES 45 |
| | Off-Peak | KES 47 | KES 48 |
| Formal | Peak | KES 32 | KES 39 |
| | Off-Peak | KES 37 | KES 45 |

| **Cooperative Cooling Equipment** | |
|---|---|
| | Cooperative |
| Cooling Equipment | 75% |
| No Cooling Equipment | 25% |

**Dairy Advisory and Finance**

| **Attending Training** | | | |
|---|---|---|---|
| | MSFs and LSFs | MSFs | LSFs |
| No Attended Training | 27% | - | - |
| Attended Training | 73% | - | - |
| | | | |
| **Loan Capital** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Loan Capital | 7% | 5% | 14% |
| No Loan Capital | 89% | 92% | 79% |
| Unknown | 4% | 3% | 7% |

| **Cooperative Offering Training** | |
|---|---|
| | Cooperative |
| Offer Training | 98% |
| Offer No Training | 2% |
| **Cooperative Offering Training** | |
| | Cooperative |
| 0 | 32% |
| 1 to 5 | 57% |
| 6 to 10 | 9% |
| 10 + | 2% |
| **Cooperative Offering Training** | |
| | Cooperative |
| Financial Support | 89% |
| No Financial Support | 11% |

**Herd Improvement**

| **Herd Improvement Methods** | MSFs and LSFs | MSFs | LSFs |
|---|---|---|---|
| Breeding | 64% | 62% | 71% |
| Purchase of Young Stock | 17% | 16% | 22% |
| Both Breeding and Purchase of Young Stock | 13% | 16% | - |
| Unknown | 6% | 6% | 7% |
| **Breeding Methods** | MSFs and LSFs | MSFs | LSFs |
| AI | 77% | 77% | 75% |
| Bull | 7% | 7% | 8% |
| Both AI and Bull | 7% | 7% | 7% |
| Unknown | 7% | 9% | 0% |
| **AI Genetic Type** | MSFs and LSFs | MSFs | LSFs |
| Conventional | 32% | 34% | 25% |
| Sexed | 16% | 16% | 17% |
| Both | 34% | 32% | 42% |
| Unknown | 18% | 18% | 16% |
| **Insemination Service Provider** | MSFs and LSFs | MSFs | LSFs |
| Farm Employed Inseminator | 21% | 18% | 33% |
| Veterinary | 8% | 5% | 17% |
| Inseminator Service | 39% | 45% | 17% |
| Unknown | 32% | 32% | 33% |
| **Averages Costs** | MSFs and LSFs | MSFs | LSFs |
| Conventional | KES 1630 | KES 1678 | KES 1450 |
| Sexed | KES 4693 | KES 4744 | KES 4500 |
| Service | KES 604 | KES 578 | KES 700 |

| **AI Service Cooperative** | Cooperative |
|---|---|
| Offer AI Service | 30% |
| No AI Service | 70% |

**Herd Management**

| **Calf Housing Method** | | | |
|---|---|---|---|
| | MSFs and LSFs | MSFs | LSFs |
| Grouped with Contact | 54% | 65% | 36% |
| Individual Without Contact | 38% | 27% | 57% |
| individual With Contact | 2% | - | 7% |
| No Housing | 6% | 8% | - |
| **Method of Record Keeping** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Manual | 69% | 69% | 58% |
| Software | 15% | 11% | 25% |
| Both | 16% | 20% | 17% |
| **Template Use** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Templates | - | 25% | 56% |
| No Templates | - | 75% | 44% |
| **Software Type** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Dairy Related | - | 50% | 60% |
| General Software | - | 50% | 40% |
| **Record Subjects** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| Milk Production | - | 41% | 44% |
| Breeding | - | 28% | 30% |
| Herd Composition | - | 5% | 7% |
| Health | - | 20% | 19% |
| Other | - | 6% | 0% |
| **Record Frequency** | | | |
| | MSFs and LSFs | MSFs | LSFs |
| When Necessary | - | 7% | 42% |
| Weekly | - | 2% | 0% |
| Daily | - | 60% | 42% |
| Twice a day | - | 22% | 17% |
| Unknown | - | 9% | 0% |

## Annex 9. Analysis Deep Scan Cooperatives

### Number of cooperatives per county:

| County | Number of cooperative deep scans |
|---|---|
| Uasin Gishu | 13 |
| Trans Nzoia | 4 |
| Nanda | 7 |
| Elgeyo Marakwet | 4 |
| Bungoma | 2 |
| West Pokot | 1 |
| Kakamega | 3 |
| Baringo | 10 |
| **Total deep scans** | **44** |

### Average per cooperative of total:

| County | Total number of members | Active members | Milk received peak (kg) | Milk received off peak (kg) | Milk price peak (KES) | Milk price off peak (KES) |
|---|---|---|---|---|---|---|
| Uasin Gishu | 13 | 13 | 13 | 13 | 13 | 13 |
| | 1919.92 | 837.69 | 9200.00 | 1968.46 | 29.08 | 35.62 |
| Trans Nzoia | 4 | 4 | 4 | 4 | 4 | 4 |
| | 2647.50 | 574.25 | 3750.00 | 1862.50 | 31.00 | 34.75 |
| Nandi | 7 | 7 | 7 | 7 | 7 | 7 |
| | 3617.14 | 1202.86 | 10885.71 | 2242.86 | 29.57 | 35.57 |
| Elgeyo Marakwet | 4 | 4 | 4 | 4 | 4 | 4 |
| | 883.75 | 480.50 | 3350.00 | 500.00 | 29.50 | 35.25 |
| Bungoma | 2 | 2 | 2 | 2 | 2 | 2 |
| | 526.50 | 122.00 | 1300.00 | 375.00 | 28.50 | 36.50 |
| West Pokot | 1 | 1 | 1 | 1 | 1 | 1 |
| | 3344.00 | 664.00 | 4733.00 | 833.00 | 25.00 | 37.00 |
| Kakamega | 3 | 3 | 3 | 3 | 3 | 3 |
| | 568.33 | 210.00 | 1266.67 | 360.00 | 40.67 | 46.33 |
| Baringo | 10 | 10 | 10 | 10 | 10 | 10 |
| | 1663.40 | 660.10 | 5382.80 | 1673.00 | 32.60 | 41.60 |

### Average for all the counties:

| | Total number of members | Active members | Milk received peak total (kg) | Milk received off peak total (kg) | Milk price peak (KES) | Milk price off peak (KES) |
|---|---|---|---|---|---|---|
| Frequency | 44 | 44 | 44 | 44 | 44 | 44 |
| Mean | 1980.45 | 719.73 | 6571.84 | 1593.93 | 30.84 | 37.66 |

## Cooperatives offering membership fees:

| Variable | Frequency | Percent |
|---|---|---|
| Yes | 29 | 65.9 |
| No | 15 | 34.1 |
| Total | 44 | 100.0 |

## Percentage with cooling equipment:

| Variable | Frequency | Percentage |
|---|---|---|
| Cooling equipment | 33 | 75.0 |
| No cooling equipment | 11 | 25.0 |
| Total | 44 | 100.0 |

## Percentage with cooling equipment per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Cooling equipment | 10 | 76.9 |
| | No cooling equipment | 3 | 23.1 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Cooling equipment | 4 | 100.0 |
| Nandi | Cooling equipment | 4 | 57.1 |
| | No cooling equipment | 3 | 42.9 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Cooling equipment | 4 | 100.0 |
| Bungoma | Cooling equipment | 2 | 100.0 |
| West Pokot | Cooling equipment | 1 | 100.0 |
| Kakamega | Cooling equipment | 3 | 100.0 |
| Baringo | Cooling equipment | 5 | 50.0 |
| | Co cooling equipment | 5 | 50.0 |
| | Total | 10 | 100.0 |

## Production units:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 4 | 9.1 |
| No | 40 | 90.9 |
| Total | 44 | 100.0 |

## Production units per county:

| County | Variable | Frequency | Percentages |
|---|---|---|---|
| Uasin Gishu | Yes | 2 | 15.4 |
| | No | 11 | 84.6 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 1 | 25.0 |
| | No | 3 | 75.0 |
| | Total | 4 | 100.0 |
| Nandi | No | 7 | 100.0 |
| Elgeyo Marakwet | No | 4 | 100.0 |
| Bungoma | No | 2 | 100.0 |
| West Pokot | No | 1 | 100.0 |
| Kakamega | No | 3 | 100.0 |
| Baringo | Yes | 1 | 10.0 |
| | No | 9 | 90.0 |
| | Total | 10 | 100.0 |

## Core business:

| Variable | Frequency | Percentages |
|---|---|---|
| Milk cooling | 1 | 2.3 |
| Milk marketing | 4 | 9.1 |
| Cooling and bulking | 12 | 27.3 |
| Cooling, bulking and marketing | 8 | 18.2 |
| Milk bulking | 13 | 29.5 |
| Cooling, bulking and processing | 1 | 2.3 |
| Milk bulking and marketing | 4 | 9.1 |
| Bulking,processing and marketing | 1 | 2.3 |
| Total | 44 | 100.0 |

## Core business per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Milk cooling | 1 | 7.7 |
| | Milk marketing | 3 | 23.1 |
| | Cooling and bulking | 6 | 46.2 |
| | Milk bulking | 3 | 23.1 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Cooling and bulking | 1 | 25.0 |
| | Milk bulking | 2 | 50.0 |
| | Cooling, bulking and processing | 1 | 25.0 |
| | Total | 4 | 100.0 |
| Nandi | Milk marketing | 1 | 14.3 |
| | Cooling and bulking | 1 | 14.3 |
| | Cooling, bulking and marketing | 2 | 28.6 |
| | Milk bulking | 3 | 42.9 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Cooling and bulking | 4 | 100.0 |
| Bungoma | Milk bulking | 2 | 100.0 |
| West Pokot | Cooling, bulking and marketing | 1 | 100.0 |
| Kakamega | Cooling, bulking and marketing | 3 | 100.0 |
| Baringo | Cooling, bulking and marketing | 2 | 20.0 |
| | Milk bulking | 3 | 30.0 |
| | Milk bulking and marketing | 4 | 40.0 |
| | Milk bulking, processing and marketing | 1 | 10.0 |
| | Total | 10 | 100.0 |

## Milk marketing channel:

| Variable | Frequency | Percentages |
|---|---|---|
| Daima | 9 | 20.5 |
| NKCC and Brookside | 1 | 2.3 |
| NKCC | 17 | 38.6 |
| Daima and Doinyo Lessos | 1 | 2.3 |
| Daima and NKCC | 4 | 9.1 |
| Brookside | 6 | 13.6 |
| Process own milk | 1 | 2.3 |
| Others | 5 | 11.4 |
| Total | 44 | 100.0 |

## Milk marketing channel per county:

| County | Variable | Frequency | Percentages |
|---|---|---|---|
| Uasin Gishu | Daima | 1 | 7.7 |
| | NKCC and Brookside | 1 | 7.7 |
| | NKCC | 8 | 61.5 |
| | Daima and Doinyo Lessos | 1 | 7.7 |
| | Brookside | 1 | 7.7 |
| | Process own milk | 1 | 7.7 |
| | Total | 13 | 100.0 |
| Tranzoia | Daima | 1 | 25.0 |
| | Daima and NKCC | 2 | 50.0 |
| | Brookside | 1 | 25.0 |
| | Total | 4 | 100.0 |
| Nandi | NKCC | 5 | 71.4 |
| | Daima and nkcc | 2 | 28.6 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Daima | 2 | 50.0 |
| | Brookside | 2 | 50.0 |
| | Total | 4 | 100.0 |
| Bungoma | Brookside | 1 | 50.0 |
| | Others | 1 | 50.0 |
| | Total | 2 | 100.0 |
| West Pokot | Brookside | 1 | 100.0 |
| Kakamega | Others | 3 | 100.0 |
| Baringo | Daima | 5 | 50.0 |
| | NKCC | 4 | 40.0 |
| | Others | 1 | 10.0 |
| | Total | 10 | 100.0 |

## Target group of farmers

| Variable | Frequency | Percentage |
|---|---|---|
| Smallholder farmers | 42 | 95.5 |
| Medium scale farmers | 1 | 2.3 |
| All | 1 | 2.3 |
| Total | 44 | 100.0 |

## Target group of farmers per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Smallholder farmers | 11 | 84.6 |
| | Medium scale farmers | 1 | 7.7 |
| | All | 1 | 7.7 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Smallholder farmers | 4 | 100.0 |
| Nandi | Smallholder farmers | 7 | 100.0 |
| Elgeyo Marakwet | Smallholder farmers | 4 | 100.0 |
| Bungoma | Smallholder farmers | 2 | 100.0 |
| West Pokot | Smallholder farmers | 1 | 100.0 |
| Kakamega | Smallholder farmers | 3 | 100.0 |
| Baringo | Smallholder farmers | 10 | 100.0 |

## Percentages of members with shares:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 29 | 65.9 |
| No | 15 | 34.1 |
| Total | 44 | 100.0 |

## Percentage of members with shares per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 10 | 76.9 |
| | No | 3 | 23.1 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 2 | 50.0 |
| | No | 2 | 50.0 |
| | Total | 4 | 100.0 |
| Nandi | Yes | 4 | 57.1 |
| | No | 3 | 42.9 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 2 | 50.0 |
| | No | 2 | 50.0 |
| | Total | 4 | 100.0 |
| Bungoma | Yes | 1 | 50.0 |
| | No | 1 | 50.0 |
| | Total | 2 | 100.0 |
| West Pokot | No | 1 | 100.0 |
| Kakamega | Yes | 3 | 100.0 |
| Baringo | Yes | 7 | 70.0 |
| | No | 3 | 30.0 |
| | Total | 10 | 100.0 |

## Member voter right:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 41 | 93.2 |
| Through representatives | 3 | 6.8 |
| Total | 44 | 100.0 |

## Member voter right per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 11 | 84.6 |
| | Through representatives | 2 | 15.4 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 4 | 100.0 |
| Nandi | Yes | 6 | 85.7 |
| | Through representatives | 1 | 14.3 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 4 | 100.0 |
| Bungoma | Yes | 2 | 100.0 |
| West Pokot | Yes | 1 | 100.0 |
| Kakamega | Yes | 3 | 100.0 |
| Baringo | Yes | 10 | 100.0 |

## Training/extension services offered:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 43 | 97.7 |
| No | 1 | 2.3 |
| Total | 44 | 100.0 |

## Training/extension services offered per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 12 | 92.3 |
| | No | 1 | 7.7 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 4 | 100.0 |
| Nandi | Yes | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 4 | 100.0 |
| Bungoma | Yes | 2 | 100.0 |
| West Pokot | Yes | 1 | 100.0 |
| Kakamega | Yes | 3 | 100.0 |
| Baringo | Yes | 10 | 100.0 |

## Extension officers grouping:

| Variable | Frequency | Percentage |
|---|---|---|
| 0-5 | 25 | 56.8 |
| 6-10 | 4 | 9.1 |
| 10+ | 1 | 2.3 |
| Total | 30 | 68.2 |
| System | 14 | 31.8 |
| Total | 44 | 100 |

## Extension officers grouping per county:

| County | Frequency | Variable | Percentage |
|---|---|---|---|
| Uasin Gishu | 0-5 | 8 | 61.5 |
| | 6-10 | 1 | 7.7 |
| | Total | 9 | 69.2 |
| | System | 4 | 30.8 |
| | Total | 13 | 100 |
| Trans Nzoia | 0-5 | 3 | 75.0 |
| | 10+ | 1 | 25.0 |
| | Total | 4 | 100.0 |
| Nandi | 0-5 | 5 | 71.4 |
| | 6-10 | 2 | 28.6 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | 0-5 | 2 | 50.0 |
| | System | 2 | 50.0 |
| | total | 4 | 100 |
| Bungoma | 0-5 | 1 | 50.0 |
| | System | 1 | 50.0 |
| | Total | 2 | 100 |
| West Pokot | 6-10 | 1 | 100.0 |
| Kakamega | 0-5 | 1 | 33.3 |
| | System | 2 | 66.7 |
| | Total | 3 | 100 |
| Baringo | 0-5 | 5 | 50.0 |
| | System | 5 | 50.0 |
| | Total | 10 | 100 |

## Financial support for members:

| Variable | Frequency | Percentage |
|---|---|---|
| yes | 39 | 88.6 |
| no | 5 | 11.4 |
| Total | 44 | 100.0 |

## Financial support for members per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 12 | 92.3 |
| | No | 1 | 7.7 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 2 | 50.0 |
| | No | 2 | 50.0 |
| | Total | 4 | 100.0 |
| Nandi | Yes | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 3 | 75.0 |
| | No | 1 | 25.0 |
| | Total | 4 | 100.0 |
| Bungoma | Yes | 1 | 50.0 |
| | No | 1 | 50.0 |
| | Total | 2 | 100.0 |
| West Pokot | Yes | 1 | 100.0 |
| Kakamega | Yes | 3 | 100.0 |
| Baringo | Yes | 10 | 100.0 |

## Ownership:

| Variable | Frequency | Percentage |
|---|---|---|
| Private | 4 | 9.1 |
| Public | 40 | 90.9 |
| Total | 44 | 100.0 |

## Ownership per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Private | 4 | 30.8 |
| | Public | 9 | 69.2 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Public | 4 | 100.0 |
| Nandi | Public | 7 | 100.0 |
| Elgeyo Marakwet | Public | 4 | 100.0 |
| Bungoma | Public | 2 | 100.0 |
| West Pokot | Public | 1 | 100.0 |
| Kakamega | Public | 3 | 100.0 |
| Baringo | Public | 10 | 100.0 |

## Quality check done:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 44 | 100.0 |

## Quality check done per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 13 | 100.0 |
| Trans Nzoia | Yes | 4 | 100.0 |
| Nandi | Yes | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 4 | 100.0 |
| Bungoma | Yes | 2 | 100.0 |
| West Pokot | Yes | 1 | 100.0 |
| Kakamega | Yes | 3 | 100.0 |
| Baringo | Yes | 10 | 100.0 |

## Familiarity with Dutch ISPIs:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 18 | 40.9 |
| No | 26 | 59.1 |
| Total | 44 | 100.0 |

## Familiarity with SNV/KMDP:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 28 | 63.6 |
| No | 16 | 36.4 |
| Total | 44 | 100.0 |

## Links to organisations:

| Variable | Frequency | Percentage |
|---|---|---|
| Yes | 40 | 90.9 |
| No | 4 | 9.1 |
| Total | 44 | 100.0 |

## Loans:

| Variable | Frequency | Percentages |
|---|---|---|
| Yes | 25 | 56.8 |
| No | 16 | 36.4 |
| Unknown | 3 | 6.8 |
| Total | 44 | 100.0 |

## Loans per county:

| County | Variable | Frequency | Percentage |
|---|---|---|---|
| Uasin Gishu | Yes | 7 | 53.8 |
| | No | 4 | 30.8 |
| | Unknown | 2 | 15.4 |
| | Total | 13 | 100.0 |
| Trans Nzoia | Yes | 2 | 50.0 |
| | No | 2 | 50.0 |
| | Total | 4 | 100.0 |
| Nandi | Yes | 5 | 71.4 |
| | No | 1 | 14.3 |
| | Unknown | 1 | 14.3 |
| | Total | 7 | 100.0 |
| Elgeyo Marakwet | Yes | 3 | 75.0 |
| | No | 1 | 25.0 |
| | Total | 4 | 100.0 |
| Bungoma | No | 2 | 100.0 |
| West Pokot | Yes | 1 | 100.0 |
| Kakamega | Yes | 2 | 66.7 |
| | No | 1 | 33.3 |
| | Total | 3 | 100.0 |
| Baringo | Yes | 5 | 50.0 |
| | No | 5 | 50.0 |
| | Total | 10 | 100.0 |

## SWOT Analysis:

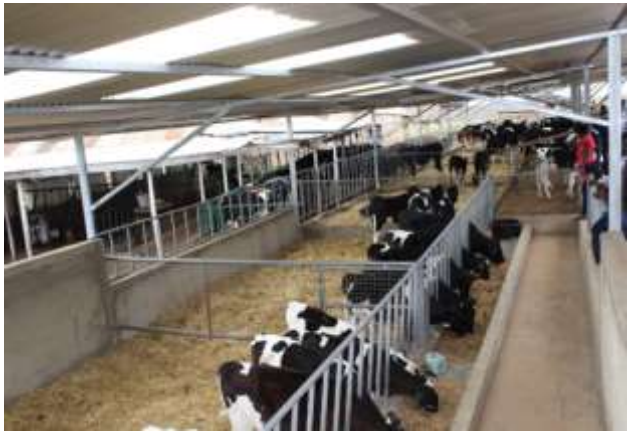
| Variable STRENGHTS | Frequency | Percentage |
|---|---|---|
| Resources | 7 | 15.9 |
| Milk availability | 2 | 4.5 |
| Farmers loyalty and unity | 15 | 34.1 |
| Strategically located | 5 | 11.4 |
| Favorable weather conditions | 8 | 18.2 |
| Good management | 3 | 6.8 |
| Diversified services offered | 4 | 9.1 |
| Total | 44 | 100.0 |

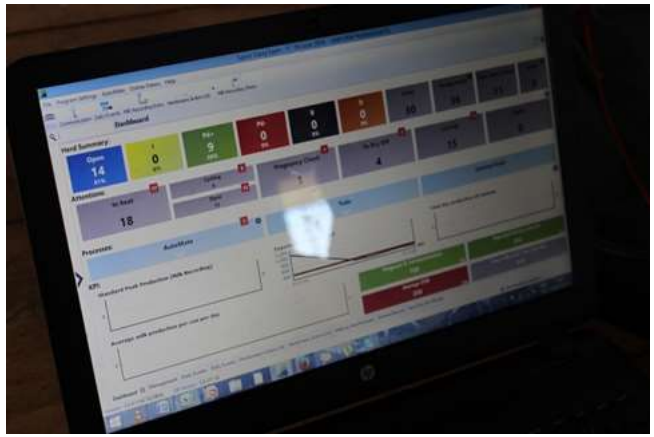
| Variable WEAKNESSES | Frequency | Percentage |
|---|---|---|
| Inadequate transport | 2 | 4.5 |
| Inadequate finance | 14 | 31.8 |
| Poor management structures | 3 | 6.8 |
| Unstable milk supply | 7 | 15.9 |
| Unreliable power supply | 1 | 2.3 |
| Poor road networks | 5 | 11.4 |
| Late payment | 2 | 4.5 |
| Inadequate fodder | 7 | 15.9 |
| Milk contamination | 2 | 4.5 |
| Low capacity for milk handling on peak season | 1 | 2.3 |
| Total | 44 | 100.0 |

| Variable OPPORTUNITIES | Frequency | Percentage |
|---|---|---|
| Trainings | 26 | 59.1 |
| Machinery and equipment | 1 | 2.3 |
| Trade in inputs and genetics | 2 | 4.5 |
| Trainings and machinery | 7 | 15.9 |
| Trainings and inputs | 8 | 18.2 |
| Total | 44 | 100.0 |

| Variable THREATS | Frequency | Percentage |
|---|---|---|
| Climate change | 10 | 22.7 |
| Diseases | 8 | 18.2 |
| Competition | 12 | 27.3 |
| Price fluctuation | 7 | 15.9 |
| Government policies | 2 | 4.5 |
| Climate change and diseases | 3 | 6.8 |
| Political instability | 2 | 4.5 |
| Total | 44 | 100.0 |

## Annex 10. Photo Impression MSF and LSF Farming Systems





## Annex 11. Photo Impression of Cooperatives Dairy Value Chain


## Annex 12. Photo Impression of Eldoret Agribusiness Fair 2016

**Dutch Pavilion: Uniform Agri, DTC, ProDairy EA, Bles Dairies EA, Agripoort, Koudijs DeHeus, Dejirene Ltd, Nundoroto, Mueller, Van den Heuvel, Roodbont/Cow Signals, Q-Point, PUM**


**Eldoret Agri Business Fair 2016: Dejirene Ltd – Fodder Demo (Maize Train)**


**Eldoret Agri Business Fair 2016:**
**Baraka Farm, Bio Foods Ltd and Happy Cow Ltd - Dairy Processing**