

AU-IBAR & NEPDP

KENYA LIVESTOCK SECTOR STUDY:

**AN ANALYSIS OF PASTORALIST LIVESTOCK PRODUCTS
MARKET VALUE CHAINS AND POTENTIAL EXTERNAL
MARKETS FOR LIVE ANIMALS AND MEAT**

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LIST OF ABBREVIATIONS

ACP:	African Caribbean Countries
AD:	Air dried
AfDB:	African Development Bank
AGDP:	Agriculture Gross Domestic Product
ALMO:	African Livestock Marketing Organization
ALRMP:	Arid Lands Resources Management Project
ASAL:	Arid and Semi-Arid Lands
AU-IBAR:	African Union-Inter Africa Bureau of Animal Resources
CAHW:	Community Animal Health Worker
CAP:	Common Agricultural Policy of EU
CBPP:	Contagious Bovine Pleuropneumonia
CDW:	Cold Dressed Weight
COMESA:	Common Market for East and Southern Africa
DEWS:	Drought Early Warning System
DFZ:	Disease Free Zones
DLMC:	District Livestock Council
DPA:	District Pastoralists Association
EAC:	East African Community
EBA:	Everything but Arms
EMCA:	Environment Management Coordination Act
EPA:	Economic Partnership Agreement
ERSWEC:	Economic Recovery Strategy for Wealth and Employment Creation
EU:	European Union
EUREPGAP:	European Retailers Protocol on Agricultural Practice
FAO:	Food and Agriculture Organization
GATT:	General Agreement on Trade and Tariffs
GDP:	Gross Domestic Product
GMP:	Good Manufacturing Practice
GOK:	Government of Kenya
HACCP:	Hazard Critical Control Points
HMPL:	High and Medium Potential Lands
IGAD:	Inter-Governmental Authority on Development
ILRI:	International Livestock Research Institute

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KCA:	Kenya Camel Association
KLMC:	Kenya Livestock Marketing Council
KMC:	Kenya Meat Commission
LMD:	Livestock Marketing Division
LTMS-K:	Livestock Traders Marketing Society of Kenya
MOH:	Ministry of Health
MOLFD:	Ministry of Livestock and Fisheries Development
MSE:	Medium and Small Enterprises
NEMA:	National Environment Management Agency
NEPDP:	North Eastern Province Development Programme
NTB:	Non-Tariff Barriers
PACE:	Pan African Control of Epizootics
PDLP:	Provincial Director of Livestock Production
PDVS:	Provincial Director of Veterinary Services
PPR:	Peste des Petits Ruminants
RVF:	Rift Valley Fever
SPS:	Sanitary and Phytosanitary
SRA:	Strategy for Revitalization of Agriculture
SWOT:	Strengths, Weaknesses, Opportunities, Threats
TDA:	Trans boundary Animal Diseases
UAE:	United Arab Emirates
USAID:	United States Aid for International Development
VSD:	Veterinary Services Department
WHO:	World Health Organization
WS:	Wet salted
WTO:	World Trade Organization

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DISCLAIMER

The author would like to stress that the opinions expressed in this study are solely those of the author and takes responsibility for any errors of omission or commission that may be found in the study. These opinions and arguments do not in any way represent the official position of the African Union Inter-African Bureau for Animal Resources.



Dr. Alfred M. Muthee
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EXECUTIVE SUMMARY

This study was undertaken as a background report to support the preparation of Business Plans for the Kenya Livestock Marketing Council (KLMC) and Livestock Traders Society of Kenya (LTMS-K). These two organizations are local partners receiving capacity building support under the USAID funded AU-IBAR project; the North Eastern pastoral Development Programme (NEPDP). The study was undertaken in May/June 2006 and field visits were made to Garissa, Mandera, Wajir, Isiolo and Kajiado to interview livestock traders, milk traders, municipal/county council officials and Ministry of Livestock and Fisheries Development officials. A slaughterhouse and butchery survey was also undertaken in Nairobi and Mombasa. Apart from field interviews, comprehensive consultations were made with USAID, MOLFD, AU-IBAR, LTMS-K, KLMC and other stakeholders. A comprehensive internet survey was also undertaken to analyze the potentials for the export markets for livestock and meat in the Middle East and market for meat in the European Union. The report also includes inputs from the client and other stakeholders at a workshop held on 13th July 2006. The report covers an overview of the Kenya red meat sub-sector, marketing value chains for livestock, milk, hides and skins, meat market value chains and the potential for export of live animals and meat to Middle East and meat for the European Union market.

An Overview of Kenya Red Meat Sub-sector

The livestock sector contributes 10%-15% of GDP and 30% of AgDP for both red meat sub-sector (cattle, sheep, goats, and camels), the white meat sub-sector (pigs, poultry) and by-products (milk, hides/skins). Data on livestock production is problematic as the last livestock census was undertaken in 1969. The population estimates for cattle is 12 mi heads and projected to increase to 14.4mi by 2014, goats population is estimated at 11 mi and projected to increase to 15 mi while that of sheep is estimated at 9 mi and projected to increase to 10.6 mi during the same period. Camel population is estimated at 0.9mi and projected to increase to 1.09 mi by 2014. **These figures should be treated with caution and there is an urgent need for a countrywide livestock census.**

Kenya is not self-sufficient in red meat as it imports about 25-30% of its beef through illegal movement of cattle from neighbouring countries. Red meat and offals consumption is estimated at 10.8 kg per capita of which beef/offals account for 8 kg/capita, shoat meat for 2.6kg/capita and camel meat for 0.2 kg/capita. Consumption of meat is highest in Nairobi (beef 18.25 kg/capita, shoat meat 4.4 kg/capita) and Mombasa (beef 15 kg/capita). In rural areas, consumption is estimated at 3.25kg/capita for beef and 1.6 kg/capita of shoat meat. Total consumption of red meat and offals was estimated at 326,000 MT per year. Projections of red meat supply between 2005 and 2014 show that there will be deficits in beef rising from 38,323MT to 49,835MT during the period while mutton deficits are expected to rise from 12,879MT to 18,885MT. In the case of goat meat, it is projected that there will be a surplus of 5,775MT to 7,739MT during the period while camel meat deficits are expected to rise from 175MT in 2005 to 311MT in 2014.

In the key policy documents; the Economic Recovery Strategy for Wealth Creation and Employment Creation (ERS 2003-2007) and the Strategy for Revitalizing Agriculture (SRA 2004-2014), strategies have been identified to improve agriculture and livestock productivity. In the livestock sector, the preparation of a livestock

policy and ASAL development policy is nearing finalization. In recognition of the importance of ASAL areas, the government and donors have funded the Arid Lands Resource Management Project (ALRMP-World Bank) to cover all the 22 ASAL districts at a cost of US\$66mi, the ASAL Based Livestock Development Programme at a cost of US\$26mi (AfDB) and USAID-funded North Eastern Province Development Programme at a cost of US\$2.5mi (NEPDP). Other donors and NGOs are also involved in the ASAL areas. To promote advocacy for pastoralists, the private sector based organizations – Kenya Livestock Marketing Council (KLMC) and the Livestock Traders Marketing Society of Kenya (LTMS-K) – are being strengthened at national and grass-roots levels, through the NEPDP being implemented by AU-IBAR.

Marketing Value Chains for Pastoralist Livestock

Marketing value chains were analyzed for cattle, shoats and camels. The analysis covered both trekking and trucking options for various routes. These included the Eastern route (Wajir, Mandera, Garissa and Somali border), the northern route (Isiolo, Moyale, Samburu, Marsabit and the Ethiopian border), the southern route (Tanzanian border, Kajiado (Emali and Bissil markets), Mwingi and Narok, coastal areas (lower Garissa/Ijara, Tana River, Taita Taveta) and other routes (Laikipia, Eldoret, Kuria and Migori). Interviews of stock traders were undertaken at the primary markets and terminal markets of Nairobi and Mombasa.

In the **Eastern route** mainly dealing with livestock originating from North Eastern province and Somalia, the following points were noted:

- Cattle prices ranged from Kshs.8,000/head to Kshs.11,200/head with Somalia cattle fetching a higher purchase price
- The purchase price for goats was Kshs.900/head
- Camel purchase prices ranged from Kshs.17,250/head to Kshs.19,500/head with Somalia camels fetching a higher price
- Trekking and associated costs ranged from Kshs.596/head to Kshs.1,045/head for cattle, camels from Kshs.1,050-1,111/head and for goats for Kshs.372/head
- At the Garissa markets, selling prices for cattle were Kshs.11,500/head, camels at Kshs.22,50/head and for goats at Kshs.300/head.
- Net margins for cattle ranged from 7% to 21% for camels from 8% to 24% and for goats at 2%.

Analysis was also made for trucking cattle from Mandera to Nairobi for slaughter and the traders realized a margin of 6-8% because of high trucking costs. From Garissa market, livestock was trucked to Nairobi and Mombasa for slaughter with traders realizing margins of 5%-9% of selling price. Trekking cattle down Tana River district to Coast ranches for fattening is the most lucrative with margins ranging from 15%-34% for cattle fattened.

Major problems experienced by traders in this route include:

- Irregular supply of animals especially after drought
 - High transport costs to terminal markets
 - Harassment and illegal taxes on the road
 - Market and price instability
 - High and duplicate charges by municipal and county councils
 - Fatigue and death during transport
 - Lack of credit, among others.
-

In the **Northern Route**, the following analysis was undertaken at Isiolo market:

- ***Trekking cattle, shoats and camels from Moyale/Ethiopia border, Samburu and Wajir.*** Cattle purchase prices ranged from Kshs.10,000-12,000/head, shoats from Kshs.1,200-Kshs.1,367/head and camels from Kshs.16,250-Kshs.17,000/head. Selling prices averaged at Kshs.15,000/head for cattle, Kshs.21,000/head for camels and Kshs.1,650/head for shoats. Traders realized net margins of 10-60% for cattle, the higher margin being for heavy Boran animals, camels 3-11% and shoats for 3%.
- Analysis was also made of ***trucking cattle to Nairobi for slaughter*** which realized a net margin of 9%, low because of trucking costs, however, trucking to Voi ranches and fattening realized a margin of 23%.
- Camels were trekked through Meru, Mwingi to Nairobi for 60 days and traders realized a margin of 8% of selling price.

Problems experienced in this chain included:

- Insecurity
- High transport costs
- Lack of pasture and water during trekking
- Market and price instability
- Animal diseases
- Lack of credit
- High fees/cess, among others

The **Southern Route** analysis covered the Maasai rangelands, Tanzanian border and Eastern province (Mwingi). Various trading options were analyzed at Emali and Bissil markets as follows:

- Traders trekking cattle from Emali to Nairobi for slaughter realized a net margin of 8% of selling price while those trekking to Mombasa realized a margin of 10% of selling price.
- A trader purchasing immatures for fattening in Voi ranches and then slaughtering and selling meat realized a very high margin of 47%
- Traders trucking cattle and shoats to Nairobi for slaughter realized margins of 4-5% of selling price.
- Traders trucking shoats to Nairobi for slaughter only realized 3-4% margin
- Traders who bought cattle and slaughtered at Bissil then transported meat to Nairobi realized a margin of 12%
- Traders who sourced shoats from the interior markets e.g. Mwingi and Suswa and sold to Kiamaiko realized margins of 25% and 35% respectively.

The other routes supplying cattle usually by trucking to Nairobi included Rumuruti, Taita Taveta ranches, Eldoret, Laikipia, Kuria and Migori. Analysis of these routes revealed the following:

- Cattle, mostly local zebus trucked from Kuria, Migori and Rumuruti realized a margin of 5%-8% because of their lighter weights and poor finishing
- Cattle trucked from ranches in Laikipia, Taita Taveta and Eldoret large-scale farmers were well finished and realized very attractive margins of 28%, 32% and 52% for the three areas respectively.

Red Meat Marketing Value Chains

During the study, 14 slaughterhouses in Nairobi and surrounding districts were visited as well as interviewing 82 butcheries in Nairobi covering all categories of income. At the slaughterhouses, the various stakeholders were interviewed to establish their marketing value chains. In Mombasa, 2 slaughterhouses and 5 butcheries were interviewed. The analysis of the findings is as follows in surrounding districts:

- Four slaughterhouses – Kitengela, Kiserian, Keekonyokie (Kajiado District) and Mlolongo (Machakos District) supply Nairobi with beef, shoat and camel meat. Mlolongo is the only slaughterhouse for camels. The 2005 combined slaughter for these slaughterhouses was 14,655 heads of cattle, 19,991 shoats and 1,004 camels.
- The Eastern Nairobi slaughterhouses (Kayole, Dandora, Hurlingham and Kiamaiko slaughtered 43,962 cattle and 92,142 shoats in 2005.
- The Western Nairobi slaughterhouse (Dagoretti complex) of Cooperative, Thiani, Mumu, Nyongora, Nyonjoro and Bahati (Limuru) slaughtered 74,085 cattle and 2,791 shoats in 2005.
- The Eastern Nairobi and Mlolongo slaughterhouses supplied 98% of shoat meat, 44% of beef and 100% of camel meat while Western Nairobi slaughterhouses supplied 56% of beef and 2% of shoat meat. These figures don't represent total supply to Nairobi as outside slaughterhouses also supplied meat.
- The environmental conditions at the slaughterhouses were analyzed and showed that 71% sun-dried ingesta while 29% had incinerators. For liquid waste, 64% had soak pits which were emptied into rivers, 7% had septic tanks which emptied into sewer, 7% had own treatment system and the rest emptied directly into receiving waters.

Analysis was also made of value chains at slaughterhouses including slaughterhouse operators, middlemen meat selling chain and stock trader/butcher/meat distributor. The findings were as follows:

- Operating own slaughterhouses and selling meat to butcheries (who buy at slaughterhouses) realized a net margin of 18% of selling price
- Middlemen who buy meat at slaughterhouses, usually a carcass per day, and distribute to small butcheries realized a net margin of 9% of selling price.
- Stock traders who purchase cattle and pay for slaughter fees and then sell in own butcheries as well as distributing the meat to other butcheries and Burma wholesale market realized a net margin of 31% of selling price.

Selling of meat by butchers/meat retailers realized the highest margins in the value chains and the following observations were made:

- Average purchase and buying prices by butchers for boneless meat were Kshs.143/kg and Kshs.217/kg respectively across the estates. The butchers realized a gross margin of 72% - 116% per kg averaging at 89% per kg. In the case of meat with bones, the buying and selling prices were Kshs.143/kg and Kshs.186/kg respectively realizing gross margins ranging from 7.5% to 41% and averaging at 30% per kg.
 - Average buying and selling prices for goat meat were Kshs.144/kg and Kshs.218/kg respectively and realized an average gross margin of 51%/kg while sheep's meat buying and selling prices were Kshs.144/kg and Kshs.208/kg respectively and realized a gross margin of 45% per kg.
-

Analysis of meat prices by the categories of butcheries showed that there is a very wide difference across the butchery classes as analyzed below:

- High class butcheries in high income suburbs of Nairobi, and which sell meat in special cuts realized the highest gross margins ranging from 100% for meat with bones to 294% for fillet. Gross margins for goat meat averaged at 65% per kilogramme while that of sheep meat (mostly improved breeds) averaged at 117% per kilogramme.
- Middle class butcheries are found in middle class estates of Nairobi and mostly sell meat with bones although some sell special cuts. Gross margins for beef with bones and boneless beef were 46% and 85% respectively averaging at 66% while gross margins for goat and sheep meat were 71% and 57% respectively.
- Low class butcheries usually specialize in low quality beef and sell mostly boned meat. Gross margins averaged at 36% for boned beef and 69% for boneless meat averaging at 53%
- Extra low quality butcheries are in low income areas and urban slums and specialize in very low quality beef and offals. However, they realized an average gross margin of 50% per kilogramme for beef.

Hides and Skins Marketing Value Chains

Hides and skins are produced at the farm, rural slaughterhouse slabs and the bigger slaughterhouses. After slaughter, they are either cured by wet salting (WS) or air-drying. Wet salting is preferred as it produces high quality hides and skins. After primary curing, they are sold to hides/skins traders who sell to small rural tanneries or major tanneries. The analysis of the hides and skins sub-sector revealed the following:

- In 2004, Kenya produced 2.148mi hides, 3,095mi goat skins, 3.809 mi sheep skins and 34,023 camel skins
 - Kenya has 11 major tanneries producing wet blue leather and products. Their installed capacity for hides is 1.062mi/year which is about 44% of production. Their installed capacity for shoat skins is 2.26mi/year which is about 32% of production.
 - Exports of undressed hides/skins was 18,452MT which earned the country about Kshs.1 billion while exports of leather products was 8,646MT earning the country Kshs.1.1 billion.
 - A simple value addition by Tegemeo group in Isiolo which collects raw hides, cures them and then transports them to tanners, demonstrates the potential for small rural groups to earn profits. The margins realized by the group were 44% for cattle hides, 61% for sheep skins, 41% for goat skins and 49% for camel skins.
 - Based on the above observations, it is noted that Kenya has a great potential for value addition in the sub-sector but the sub-sector faces the following problems:
 - ✓ Low demand for hides and skins especially for camel hides;
 - ✓ Small domestic market due to closure of tanneries and depressed market for domestic leather products due to uncontrolled importation of second hand products;
 - ✓ Poor quality of hides and skins due to poor flaying and curing methods;
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- ✓ High investment costs requirements and stringent standards for environmental management.

Marketing Value Chains for Pastoralist Milk

Pastoralists keep livestock for year round supply of milk and there is very little surplus for sale except in the wet season and for areas next to permanent water and pasture. Three marketing chains were studied for Garissa (wet and dry season), Wajir and Mandera. The findings from the analysis are as follows for **Garissa Market**.

- Garissa usually gets its milk from Bura Tana, 105 Km from Tana River and other riverine areas. Milk is from camels, goats and cattle with the composition being 41%, 39% and 20% for the three species of animals respectively.
- Traders, mostly women/women groups and youth groups, collect an average of 75 litres/trader, the collection being higher during wet seasons. Milk is transported by canter vans to Garissa market where it is sold in bulk or in small quantities.
- Net margins realized for selling camel milk to the bulk buyers like hotels were 17.5% and 20% per litre for the dry and wet seasons respectively. The margins improved if the milk was sold to consumers directly to 49% and 55% for the two seasons respectively and averaged at 37% and 43% respectively for the two seasons and categories of consumers.
- Net margins for goat milk averaged at 18% and 16% per litre in the two seasons respectively in the bulk market, improving to 45% and 54% respectively in the consumer market and averaging at 38% and 42% for the two seasons and consumers.

Net margins for cow milk in the bulk market were 18% and 10% respectively for two seasons while indirect consumer sales they were 50% and 45% respectively. The average net margins were 38% and 39% for the wet and dry season respectively.

The **Mandera milk market** is more organized and dominated by women traders who also manage the 10-stalls milk market built by ALRMP and managed by a women's group. Analysis of the milk marketing chain revealed the following:

- Milk is sourced from the agro-pastoral areas of Ethiopia and Kenya along the Daua River. Milk is collected by brokers at Kshs.1.0/litre and transported to Mandera milk market.
- Mean purchase prices ranged from Kshs.23-29/litre and transport was about Kshs.3/litre and the mean sale price was Kshs.47/litre
- Net margins varied due to origin ranging from Kshs.8.9/litre (18.3%) for milk sourced from Harere/Kalaliyo to Kshs.11.94/litre (25.6%) for milk sourced from Dholo/Bowbow and averaging at Kshs.10.7/litre (22.4%).

The milk sold in **Wajir Town** is sourced in the district, from rural markets at Griftu, Lehele, Wagberi, Orhey and Soko Mjinga among others. On average, a trader handles 20 litres with camel milk accounting for 51%, goat milk for 33% and cow milk for 16% of total collection. The following points were noted in the chain: -

- Purchase prices ranged from Kshs.40/litre to Kshs.45/litre. Transport costs were Kshs.1.0/litre while brokers/assemblers charged Kshs.5/litre
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- At the market, milk was preserved by boiling and the main selling unit was a 300ml cup. Camel milk sale prices ranged from Kshs.50/l – 55/l, goat prices at Kshs.60-65/litre while cow milk averaged at Kshs.50/litre.
- Net margins ranged from Kshs.4.80/litre (8% margin) to Kshs.11.5/litre (17.6%) depending on sources.

In all the three marketing cases, the problems were identified and suggestions given as shown below:

Problems Identified		Suggested Interventions	
Rank	%	Rank	%
Transport problems	75	Microfinance/credit	75
No cold storage	63	Improve roads	75
No market infrastructure*	63	Capacity building for traders	75
Lack of capital	50	Improve market infrastructure	63
Price fluctuations	50	Market information	63
High transport costs/brokers	38	Build milk plant	38
No permanent sources	38	Build milk cooler	25
Excess milk during wet seasons	25		
Drought	25		
No book-keeping knowledge	13		

*Except Mandera

Table 1: Problems and Suggestions on Milk Marketing

It is noted that the highest ranked problem was the transport problem during the wet seasons (75% of respondents). Other major problems were lack of milk coolers in Garissa (63%), lack of permanent market infrastructure (63%), lack of capital and price fluctuations, each at 50%. Three interventions were ranked highest by 75% of respondents. These included provision of micro-finance/credit, improvement of roads and capacity building for traders. Improving market infrastructure and providing market information were the next set of interventions (63%).

Potential for Exports of Live Animals to Middle East

- The conditions for export of livestock to Middle East include: free from FMD, Rinderpest, CBPP and RVF, quarantined for at least 30 days before shipment, treated against external parasites **and not fed at any time with ruminant meat and bone meal**, among others.
-
- The East African region exports a considerable number of livestock to Near East/N. Africa and Middle East. In 2004, the region exported 36,643 camels valued at US\$6.7mi mostly to Egypt, 135,600 cattle valued at US\$22mi, 850,000 goats valued at US\$24mi and 1.2 mi sheep valued at US\$87mi. Most of the livestock are from Ethiopia, Sudan, Somalia and Djibouti.
- Kenya has been a comparatively minor exporter of livestock. Cattle exports between 1996 and 2000 were 750 heads and between 2000 and 2004 were 556 heads. Between 1996 and 2000, the country exported 1,214 goats and this has risen to 1,500 by 2004. Since December 2003, LTMS-K has exported 8,200 goats and 9,800 heads of cattle to Mauritius. LTMS-K has also started supplying the recently opened KMC.

KENYA LIVESTOCK SECTOR STUDY

- Camel imports have been dominated by Egypt accounting for 60% of imports. Prices have varied from US\$195-1,660/head and overall Middle East imports were over US\$25mi with the E. African region only accounting for 28% of imports.
- Cattle imports to Middle East totaled at 267,358 heads dominated by Yemen (47%) which has replaced Egypt as the major importer. Prices have declined from US\$632/head in 2000 to US\$508/head in 2004 and the total value was US\$78mi with the East African region accounting for 28% of all imports.
- In 2004, Middle East imported 3.3mi goats with Bahrain, UAE, Oman, Saudi Arabia and Yemen accounting for 87% of imports. The imports were valued at US\$123.5mi of which the East African region accounted for 19% of Middle East imports.
- Middle East imported 4.2mi sheep in 2004 with major importers being Egypt (57%), Jordan (19%), Oman (8%), Qatar (8%) and UAE (7%). The import value was US\$353 with East African region accounting for 24.5% of imports.

Lessons Learnt on Analysis of Exports of Live Animals to Middle East

On the **supply side**, various lessons can be identified:

- Kenya has not undertaken a livestock census since 1969 and population figures are just estimates
- Kenya imports about 25% - 30% of its meat on the hoof from bordering countries due to its high demand for meat
- Projections of livestock numbers and demand for meat show that Kenya will be deficient in cattle, sheep and camel meat.
- Kenya has been a very minor exporter of live animals due to high local demand.

These observations imply that the country has to put in place a comprehensive livestock development plan for ASAL areas if it has to participate actively and consistently in the export of live animals.

On the **demand side**, the lessons learnt include:

- The Middle East is a potential market for Kenya, but the country will face competition from long established exporters like Sudan, Ethiopia and Somalia.
- Northern Africa importers like Libya and Egypt may not offer a large market opportunity as Kenya cannot compete effectively with Sudan and Ethiopia.
- Mauritius is a comparatively small market but because of its high prices it should be promoted
- Middle East countries have put in place stringent regulations on export of animals and the Kenyan Government should strengthen disease control, quarantine and disease free zones.
- Market information, especially prices in importing countries should be made available for effective negotiations in export trade.

Potential for Meat Exports to the Middle East

- In the 1960s and 1970s, Kenya used to export an average of 3000MT of chilled beef and 11,000MT of canned beef and other meat products. Due to the collapse of KMC and the disease free zone system, exports ceased.
 - In 2004, Kenya exported meat products valued at US\$5mi of which pork products accounted for 84.6% of exports, poultry products for 7.8%, beef for
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- 6.3% and shoats for 1.3% of total exports. Kenya is such a very minor exporter of meat products.
- The Middle East is a major importer of meat and products and in 2004, imports were valued at over US\$2bi with major importers including Saudi Arabia (36%), UAE (15%), Egypt (9%), Kuwait (7%), Iran, Yemen and Oman (5% each) and Lebanon (4%).
 - Of the total imports of US\$2bi, meat bovine fresh accounted for 36% of imports, beef and veal boneless for 26%, sheep meat fresh for 12%, mutton and lamb for 11% and all other categories of meat for 15% of all imports.
 - If all African meat exports to external markets, was to the Middle East, it would only meet 48.5% of Middle East beef and veal demand, 19% of beef and veal boneless, 21.6% of goat meat, 3.4% of meat sheep fresh and 1.9% of mutton and lamb. This implies the high export potential in the region.
 - The Middle East Conditions for imports that "***animals must not have been fed with ruminant meat and bone meals and not treated with growth factors***" favour livestock and meat produced from rangelands.

Potential for Meat Exports to the European Union

The EU (25 countries) is the largest importer and exporter of meat. In 2004, the EU imported all categories of meat valued at US\$30.5 bi and exported meat valued at US\$32bi. Salient features of the EU meat market are summarized as follows:

- In the past, EU has maintained high beef prices based on tariff and non-tariff barriers. This has been mostly through the interventions of the Common Agricultural Policy (CAP); floor prices export subsidies, import tariffs, direct payments and supply controls.
- The EU has also set stringent sanitary and phytosanitary (SPS) standards in relation to diseases like FMD, sheep and goat pox, CBPP, BSE (mad cow disease) among others which have been a hindrance to many exporters.
- The 2004 value of meat imports was US\$30.5bi of which the major importers were UK (21%), Germany (16%), Italy (14%), France (12%), Netherlands (8%), Belgium (5%), Spain (4%) and Greece (3%) which account for 83% of imports. Kenya used to supply 5% of UK's canned beef market and this market can be investigated.
- The value of meat exports in 2004 was US\$30.2 billion with Netherlands accounting for 16.5%, Denmark for 13.9%, Germany for 13.7%, France for 12% and Belgium for 10.7%.
- Imports of cattle, sheep and goat meat were valued at US\$15.4bi in 2004 with beef bovine fresh accounting for 37%, beef and veal boneless for 23%, beef and veal for 14.2%, meat sheep fresh for 11%, mutton and lamb for 11% and goat meat for less than 1%.
- Under the Lome and Cotonou Agreements and the European Beef and Veal Protocol, some African countries have been allocated quotas as follows: Botswana 18,916MT, Namibia 13,000MT, Zimbabwe 9,100MT, Madagascar 7,579 MT, Swaziland 3,363MT and Kenya 142 MT. **Kenya has not met its quota since 2000.**

Role of KLMC and LTMS-K in Promoting Pastoralists Involvement in Opportunities Identified in Market Value Chains

Since the year 2000, three major pastoralists' oriented organizations have been formed.

KENYA LIVESTOCK SECTOR STUDY

The **KLMC** was formed in 2000 with its mission stated as follows:

“To capacity build, lobby and source market for quality, disease free livestock products, disseminate accurate and timely market information to traders and producers with an aim of improving the living standards of livestock producing communities in Kenya.”

It currently operates in 16 districts in Kenya and has about 3,000 members.

In **April 2003, the LTMS-K** was formed with a mission stated as:

“To support the growth of livestock marketing and entrepreneurial development within a conducive policy environment aimed at improving the livelihoods of pastoralists communities in Kenya”

It has a membership of 100 members composed of large/medium scale ranchers/traders, smallstock traders, women milk sellers, butchers and agro-vets and community animal health workers. It operates in Garissa, Ijara, Tana River, Mombasa and Taita Taveta.

Another pastoralist advocacy group formed in 2003 is the Kenya Pastoralist Week (KPW) with its objective stated as:

“---a national advocacy from through which various actors, including mainstream media could freely interact and share experiences---on sustained advocacy on pastoralism and enhanced pro-pastoralists policy advocacy---for improvement of livelihoods of pastoralists”.

It is an annual event which nationally attracts 30,000 pastoralists to Nairobi for a week long advocacy on pastoralism. Since 2003, it has held media breakfast meetings, press releases, exhibition of pastoralists artifacts, thematic workshops, Great Trek Campaign – Moyale – Isiolo (510 km), joint corporate dinners, Tegla Loroupe Peace race, Radio and T.V. interviews and Gala night 0 pastoralist food fair and fashion show, among others.

The key words in the visions and objectives of the three organizations are **‘improving livelihoods of pastoralists’**. This basically means that the pastoralists have to be **incorporated in all stages of the livestock and products marketing value chains, trained on opportunities** in the value chains and **enabled financially** and in **bargaining powers**. In the value chain, the following opportunities were identified:

- Organizing pastoralists to form pastoralist production companies which can be involved in various activities in the chains
 - Value addition on livestock by fattening and finishing in ranches
 - Taking an integrated approach in livestock trade, fattening and slaughter
 - Promoting pastoralist owned regional slaughterhouses and transporting meat to consuming areas
 - Promoting value addition on by-products like milk, hides/skins at grass-roots level
 - Exploring opportunities for pastoralist-based companies or cooperatives to be involved in the lucrative top end of the value chain in meat retailing
 - Facilitating availability of finances/microfinance to the pastoral stakeholders
 - Promoting a Kenya Livestock Exchange where producers and traders can interact.
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1 INTRODUCTION

1.1 Purpose and Objectives of the Northern Eastern Province Development Programme (NEPDP)

The NEPDP is a 3 year USAID funded program covering the 4 districts in North Eastern Province of Kenya and one district in Coast Province. The program was designed to address some of the constraints that have been identified to be responsible for hindering access by livestock from pastoral to markets. Among the key constraints include lack of organizational capacities by pastoral producers, poor advocacy for market access, lack of access to financial services, poor access to disease control and animal health services, conflict and poor marketing infrastructure. In order to address some of these constraints, AU-IBAR in partnership with private and public sector partners, developed the NEPDP. The private sector partners are the Kenya Livestock Marketing Council (KLMC) and the Livestock Traders and Marketing Society of Kenya (LTMSK). These organizations are involved in organizing livestock from the pastoral areas to access markets through various interventions. The public sector is represented by the various departments of the Ministry of Livestock and Fisheries Development (MoLFD).

1.1.1 The Project Components

The program has been organized into four interrelated result oriented components that seek to establish a foundation for long term solutions to some of the most pressing constraints to pastoralists from the target areas. The program components are:

- (i) Institutional strengthening of Kenya Livestock Marketing Council (KLMC), the Livestock Traders Marketing Society of Kenya (LTMS-K) and their member associations. Activities under this component are expected to enhance the ability of these two organizations in providing support and organizing pastoralists to improve their livelihoods by promoting market access for their livestock and livestock products.
 - (ii) Improved advocacy ability of KLMC, LTMS-K, community animal health workers (CAHWs) and their member associations: Activities under this component will target expansion into new markets, advocacy for conducive policies and expansion of animal health service provision to pastoralists
 - (iii) Financial and marketing services for marketing and animal health: Activities implemented under this component will seek to enhance access to financial services by pastoral entrepreneurs, access to market information and related services, and facilitate conflict prevention and peace building among pastoral communities in the program areas
 - (iv) Improved disease surveillance and animal health services. This component focuses mainly on enhancing the capacity of the veterinary department for the provision of disease control, surveillance and certification services to pastoralists through expansion of service provision networks, structural
-

capacity building and human capital development, and improved operational linkages.

The first two components relate to KLMC and LTMS-K with a major aim of promoting livestock marketing, improving pastoralists' livelihoods, reducing vulnerability to the vagaries of weather (persistent drought) and man-made disasters such as conflicts.

The purpose of this study is first to identify opportunities and constraints that the two organizations need to address in the development of business plans as well as delivering their mandates and secondly, to bare the situation on the ground to the project and other pastoral development actors, to enable accurate decision making in their efforts to promote sustainable livelihoods in pastoral areas.

1.1.2 About KLMC and LTMS-K

Both the KLMC and LTMSK are registered as non-profit private sector organizations established to fill the gap left by the collapse of the Kenya Meat Commission and the Livestock Marketing Department, both of which were involved in promoting the marketing of livestock from pastoral areas.

The organizations are however relatively new and also limited in capacity to deliver on their ambitious mandates.

The two organizations believe that pastoralism, the key economic activity in most Arid and Semi-arid Lands (ASAL) is a viable economic activity and can be harnessed to promote economic growth and development in the ASAL districts and reduce vulnerabilities. They have recognized that the fundamental challenges facing the pastoralists are their inability to access better market for their livestock and livestock products. In order to achieve this noble goal, KLMC and LTMS-K have been working closely with AU-IBAR in collaboration with other development partners and stakeholders to source for better markets for livestock and livestock products and disseminate the market information to producers and traders at the right time within the country, regionally and internationally.

General Objectives of KLMC and LTMS-K

- To advocate for the interest and rights of the members on livestock matters in collaboration with other stakeholders
 - Promote livestock and livestock products marketing nationally, internationally and in particular in pastoral areas, in order to enhance and improve the economic well being of the pastoralists
 - To develop local and regional marketing research centers and marketing institutions
 - To enhance marketing information, dissemination and communication to producers and traders
 - Lobby for policy change to favour appropriate livestock development
 - Build capacities of user groups to sustainably manage livestock related infrastructure and undertake community-based disease control measures.
-

Key Strategies:

In order to achieve better marketing of livestock and livestock products, KLMC and LTMS-K have been employing the following strategies:

- Lobbying and advocacy for better policies for the pastoralists
- Capacity building of the pastoralists
- Quality assurance of livestock and livestock products
- Development of marketing strategies
- Fundraising
- Networking with other government institutions, NGOs, development partners and civil societies.

1.1.3 Purpose and Objective of the Study

The main objective of the study was to assist KLMC and LTMS-K to develop 5-year business plans to help them achieve their marketing objectives and act as a guide to their operations as stated above. Business plan development is based on sub-sector and value chain analysis which identifies sub-sector channels, opportunities and constraints along the lines of livestock production, transportation, value-addition and marketing. This component of the overall study deals with the sub-sector and value chain analysis, potentials for international trade and institutional/regulatory issues.

The value chain analysis will identify opportunities, constraints, actors and other factors that need to be tackled along the entire chain. This will not only enable the organizations to target their actions, but also give an indication of who the other players are and what type of are expected.

1.1.4 Analytical Tools, Approach and Methodology

1.1.4.1: Sub-Sector Analysis Approach

The **sub-sector analysis approach** based on wide but focused stakeholder consultative process is a strong analytical tool and approach that was found to be suited to this study. The approach consists of the following in order of sequence.

(1)Sub-sector selection is based on review of relevant documents and consultations and focused discussions with key stakeholder/informants. The set of criteria included some or all of the following factors: -

- Evidence of unmet needs for improving production and marketing for livestock stakeholders.
 - Potential for information and capacity building to improve livestock production, improve livestock products marketing and improved business skills of service providers.
 - Potential for forward and backward linkages conducive to market approach between enterprises and within the economy
 - Existence or possibility for involving a large number of micro and small enterprises (MSEs) to maximize outreach. The MSEs may include farmers, traders, transporters, butchers, processors, input suppliers, exporters among others;
 - Potential for value addition in the production-market chain due to identified investment
 - Potential for production expansion and productivity increases due to additional skills.
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- Potential for positive synergies with other donors/NGOs and respective government programmes and development agenda especially relating to economic growth and poverty alleviation
- Potential for involving women, youth groups, other grass root associations and resource poor citizens, in participatory management
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This gives a greater understanding of the operating context for MSEs and intelligence on market players, their roles and transactional relationships. In this case, the analysis covers all aspects of the livestock sector including research, formal training, input supply, farm level production issues, storage, transportation, infrastructure, processing and markets and marketing among others. The result of the analyses includes the development of livestock sub-sector maps clearly indicating the key players, overlays and transactional relationships.

1.1.4.2 Methodology

The research methodology and procedures included some time to be spent reviewing existing material through desk research; conducting interviews with key players including the government, the producer organizations and the corporate sector; field visits to Garissa, Isiolo, Emali, Bissil/Kajiado to interview traders and other stakeholders. For the meat study a survey of slaughterhouses and butcheries was also done.

The following are important stakeholders in the pastoralist livestock marketing chain and they were interviewed at various points:

- (1) Producers
- (2) Traders and middlemen.
- (3) Local authorities.
- (4) Transporters between production areas and terminal markets.
- (5) Transporters within urban areas.
- (6) Butchers (low class butcheries; medium class butcheries; and high class butcheries) and meat shops.
- (7) The Ministry of Livestock and Fisheries Development (Headquarters, districts and lower levels) – (in particular the Livestock Marketing Division and the Livestock Production Department; and the Veterinary Services Department).
- (8) Community-based livestock development groups.
- (9) Non-Governmental Organizations e.g. CARE Kenya.
- (10) Kenya Livestock Marketing Council and associated district livestock marketing groups.
- (11) Arid Lands Resource Management Project coordinated by the Office of The President.
- (12) Africa Union (AU) – IBAR Project
- (13) Pan African Control of Epizootics Project (PACE)
- (14) European Union (funded a livestock sector study in 2003).

Field data collection (qualitative and quantitative) was done using **Participatory Rapid Appraisals** (PRA) and structured questionnaires covering the following:- livestock producers, traders, transporters, input suppliers and training/and information providers especially, public and private extension, universities, research institutions, processors and marketers of products and livestock technology suppliers. The conflicting needs, agendas and interests of the various beneficiaries

and stakeholders related to the focus of the study are taken care of within the study methodology. Data are disaggregated by gender and region where this was feasible.

Nairobi and Mombasa were selected as the primary beef markets to be studied because they are major population concentrations (about 6 million including their environs) consuming about one third of the red meat consumed in the country.

1.1.5 Main Chain Analysis and Data Collection

The four main chains studied were:

(1) Livestock marketing chains for beef cattle from pastoral areas in Garissa involve:

- (a) Pastoralists
- (b) Middlemen and traders at primary markets;
- (c) Middlemen and traders at secondary markets;
- (d) Trecking or trucking of cattle to (i) the terminal markets in Mombasa and Nairobi;¹ (ii) for a small number to the fattening ranches prior to slaughter; and (iii) a small number bought for breeding and draught purposes in Ukambani. Some of the cattle are imported from Somalia and Ethiopia and traded at Garissa.

(2) Meat marketing chains for beef from pastoral areas in competition with beef from other sources. This involves terminal markets/holding facilities, abattoirs/slaughter houses, brokers, wholesale and retail butchers, meat processors, shops, supermarkets and institutions.

(3) Pastoralist milk marketing chain.

(4) Exports marketing chain of live animals.

1.2 Supporting Data Collected During Fieldwork in Garissa, Isiolo, Emali Bissil/Kajiado,

Nairobi and at the Coast

(a) For the **livestock marketing value chain analysis**, the following data were collected:

- Buying prices at the producer level in pastoral area (Garissa) and areas supplying the Garissa market.
 - Selling prices to middlemen at the Garissa market.
 - Gross margins.
 - Costs.
 - Net margins.
 - % return.
-
-

(b) Trekking/Trucking costs for cattle from Garissa to terminal markets in Nairobi and Mombasa, etc

We estimated average values for the following parameters:

Trekking

- Number of herders required and the rates of pay per day
- Number of days of trekking
- Number of animals under the care of one herder
- Movement permit costs
- County council cesses
- Rations for the herders
- Other costs

Trucking

- Movement permit costs
- Number of guards on lorry
- Wages for the guards per lorry
- Rations for guards per lorry
- Number of cattle on lorry
- Transport cost per head of cattle on lorry
- Duration taken by lorry from loading to unloading
- Other costs

(c) Supporting data for value chain analysis of meat chains

- Meat prices for various cuts in Nairobi and Mombasa in average butcheries, medium-class and high-class butcheries.
 - Slaughterhouse operations and stakeholders.
 - Stakeholder margins for various services e.g. slaughter fee, transport, council fee, rent, public health inspection fee, flayers/slaughter men, loading, security, auction fee, landing fee, movement permit, etc.
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2.0 KENYA LIVESTOCK SECTOR: ANALYSIS OF CURRENT SITUATION

2.1 Importance of Livestock to the Kenyan Economy

The livestock sector in Kenya accounts for 10%-15% of gross domestic product (GDP), about 30% of agricultural GDP (AGDP) and employs 50% of the agricultural labour force. Kenya is broadly self-sufficient in most livestock products but is a net importer of red meat mostly from on-the-hoof animals trekked across the porous boundaries of neighbouring countries (Somalia, Ethiopia, Sudan, Uganda and Tanzania). Most of the red meat comes from the arid and semi-arid areas (ASALS) dominated by nomadic and semi-nomadic pastoralism. In ASAL areas, the livestock sector offers an opportunity for increased employment and household income if appropriate packages are put in place in production and marketing. The northern and southern rangelands (N.E. province, Rift Valley) and Eastern, Nyanza and Coast provinces; where traditional pastoralists, nomads and ranchers are main producers, accounts for about 90% of beef, 98% of goats, 92% of sheep and all the camels.

The livestock resource base is estimated at 60 million units comprising of 29 million indigenous and exotic chicken, 10 million beef cattle, 3 million dairy and dairy crosses, 9 million goats, 7 million sheep, 0.8 million camels, 0.52 million donkeys and 0.3 million pigs. (SRA 2003)

2.2 Supply of Livestock

2.2.1 Livestock Production Systems: An Overview

Kenya's total area is 587,000km² of which 576,076km² is land area and the remaining 11,230km² is covered by water. Of the total land area of 576.1 million hectares, 9.4 million hectares (16.3%) are high and medium potential land (HMPL). The remaining 48.2 million hectares are the arid and semi-arid lands (ASAL) accounting for 84% of the total land area. Of the 9.4 million hectares of the HMPL, 1.1 million hectares (12%) is covered by game parks and reserves, 2.8 million hectares is crop land (30%), 2.8 million ha for grazing (30%), 2.0 million ha is under forestry (23%) and 0.5 million ha (5%) is covered by urban areas, homesteads and other infrastructure. Of the 48 million ha of ASAL, 9.0 million ha (19%) can support some agriculture, 15 million ha (31%) is just adequate for livestock keeping, and the remaining 24 million ha (50%) is dry and only useful for nomadic pastoralism as shown in Fig 1.

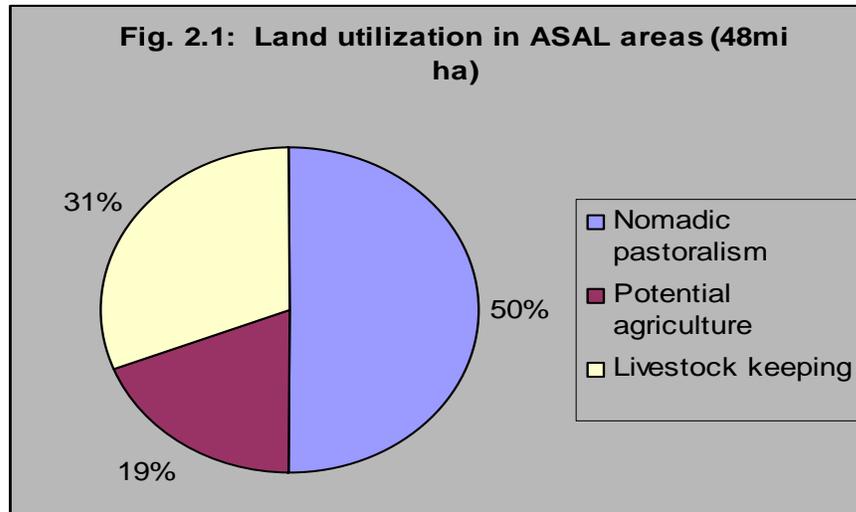


Figure 1: Land Utilization in ASAL Areas (48 mi ha)

Although these figures have changed due to increasing population, they indicate the need for integrated policies and programmes which address both the crop and livestock sub-sectors for optimal utilization of the agricultural resources.

The high potential areas with annual rainfall of over 1000 mm account for less than 20% of productive land but support 50% of the population (16 million) and produce most of milk, cash and food crops while medium potential areas with an annual rainfall of between 750-1000 mm occupy 30-35% of the land area and support 30% of the population (10 million) and farmers predominantly keep cattle and small-stock. The low potential areas with annual rainfall of less than 750 mm support 20% of the population (6 million), keep 50% of the country's livestock and 65% of wildlife. Despite the scarcity of productive land, the agricultural sector is the leading sector of the economy contributing 26% of GDP directly and another 27% indirectly through agro-industrial linkages. The sector also accounts for over 60% of employment and about 60% of foreign exchange earnings, mostly from horticulture, tea and coffee.

2.2.2: Livestock Population and Trends

The last national livestock census was done in 1969 except for some sample districts. Figures available are only estimates and considering the various droughts; the figures should be treated with caution. The population trend for the years between 1990 and 2000 is as shown in Figure 2 for cattle, goats and sheep.

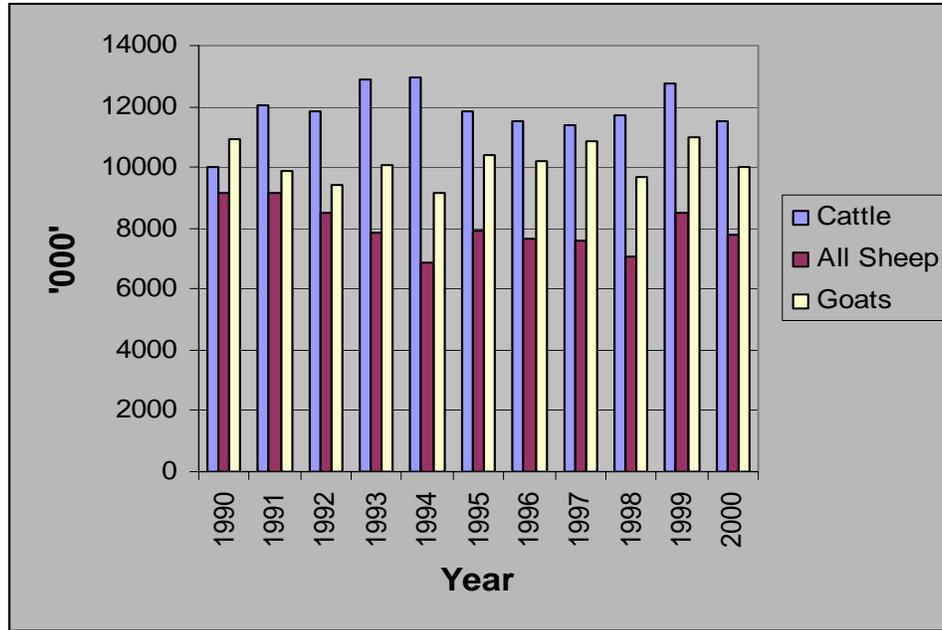


Figure 2: Livestock Population Trends

The cattle population fluctuates between 10 and 12 million while that of sheep has been on the decline and that of goats has fluctuated at between 9 and 10 million. Projections for the future show dairy animals increasing from 3.5 mi in 2005 to 3.8 million in 2010 (8.5% increase), beef cattle from 12.4mi to 14.4mi (16%), sheep from 8.9mi to 10.6mi (19%), goats from 11.6 mi to 15.4 mi (32%) and camels from 0.89 mi to 1.09 mi (22%) as shown in figure 3.

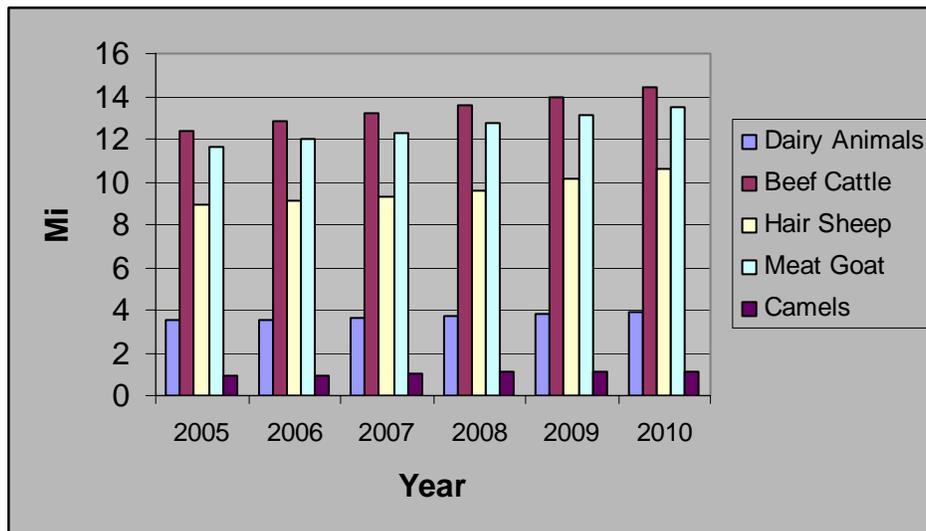


Figure 3: Livestock Projections 2005 -2010

These figures don't take into account reha recurring droughts as occurred in 1999-2001 and 2004-05. In the 1999-2001 droughts, it is estimated that mortality of small-stock was 2.4mi; 0.9 mi of cattle and 18% of camels (Aklilu 2001). The recent drought was considered more severe than that of 1999-2001 and more animals were lost.

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Using the 2001 figures, the population distribution is estimated at 3mi dairy, 9mi beef, 12mi goats, 8mi sheep (wool and hair) and 1mi camels as shown in table 2.

Species	Pastoral areas	Rest of the country	Total national herd
Dairy cattle	Negligible	3 mi	3 mi
Other cattle	4 mi	5 mi	9 mi
Goats	6 mi	6 mi	12 mi
Hairy sheep (the local breed)	4 mi	3 mi	7 mi
Wool sheep (imported animals, such as Merinos)	Negligible	1 mi	1 mi
Camels	1 mi	Negligible	1 mi
TOTAL	15 mi	18 mi	33 mi

Table 2: Distribution of Livestock

These figures are used since it is assumed any gain made since 1999-2001 drought was wiped out by the 2004-2005 drought.

The distribution by provinces for cattle, goats and sheep is as shown in figures 4 – 6.

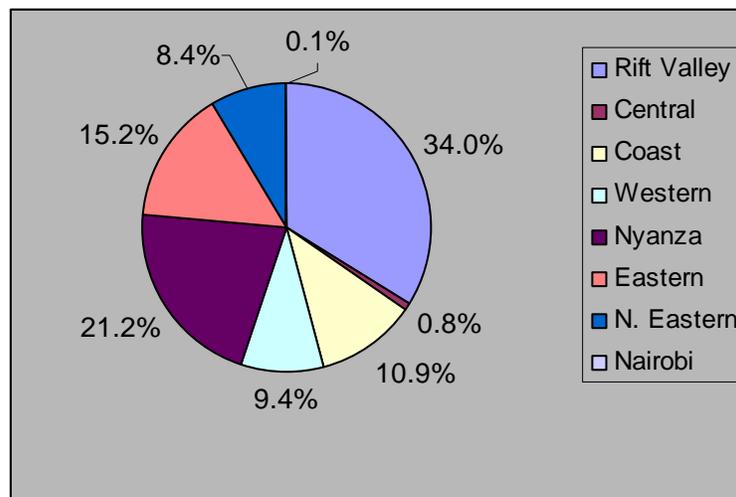


Figure 4: Distribution of beef cattle by Province (%)

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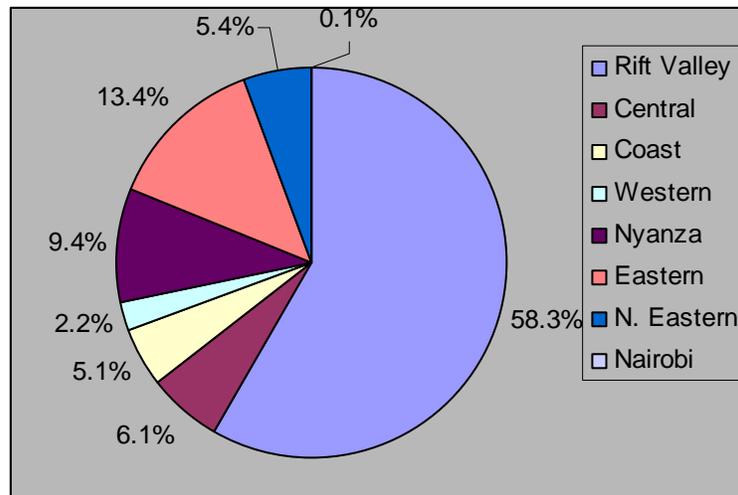


Figure 5: Distribution of Sheep by Province (%)

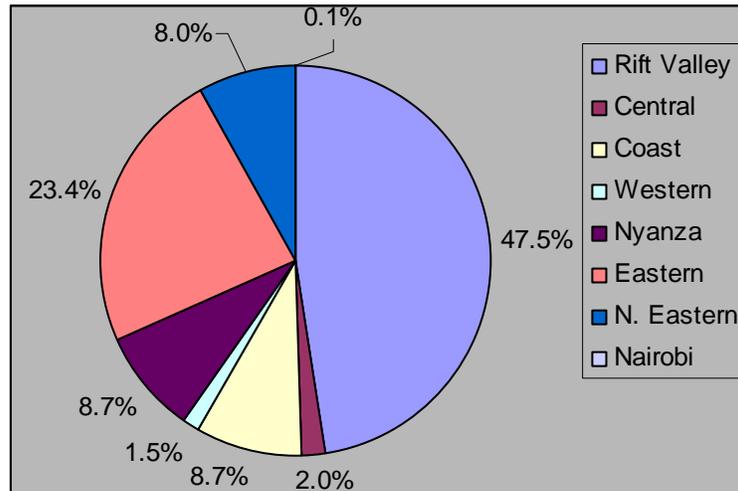


Figure 6: Distribution of Goats by Province (%)

The above figures, although indicative, show that the source of most livestock for slaughter is the ASAL areas scattered in 22 districts in Kenya. These areas have comparatively poor infrastructure and procurement of the livestock incurs high costs.

2.2.3 Livestock from Neighbouring Countries

Kenya borders Uganda, Sudan, Ethiopia, Somalia and Tanzania. The borders are porous and there are considerable inflows of animals into the country. It is estimated that about 2mi beef cattle enter Kenya annually and this makes the estimates of the national herd highly variable. The estimated livestock population in these surrounding countries is given in table 3.

	Somalia	Uganda	Kenya	Ethiopia	Sudan	Tanzania	TOTAL
Camels	6 million	-	0.83	0.47	3.3	-	10.6
Cattle	5.3mi	6.1	12	38.5	38.3	17.8	118.03
Sheep	}	1.15	10	17	48	3.5	

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Goats	26 mi	7.7	12	9.63	42	12.6	
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Table 3: Comparison of Regional Livestock Population

Note Figures for Somalia are for 2001

Source FAOSTAT 2006

2.3 Demand Situation for Red Meat

Statistics on demand for red meat are conflicting due to various factors. Firstly, slaughter figures are not coordinated as inspection is done by MOLFD in some districts and by MOH in other districts. Secondly, there are many animals slaughtered in ASAL areas which are not inspected. Thirdly, the slaughter figures don't relate to an off-take rate of 10% for cattle, which would imply a cattle population two to three times the estimated cattle population. In this respect, the figures should be treated with caution.

2.3.1 Slaughter Figures and Projected Future Demand

Figures reported in the Economic Survey (CBS-various years) show that cattle slaughter increased from 1.2 mi in 1996 to a peak of 2.87 mi in 2000 but since then, it has been on the decline to 1.641mi in 2004. In the case of sheep and goats, the slaughter increased from 1.4 mi in 1996 to a peak of 4.8 mi in 2002 but since then it has declined to 3.851 mi in 2004 as shown in table 4.

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Cattle and calves	1.219	1.32	1.8	2.536	2.87	1.952	1.854	1.669	1.641
Sheep and goats	1.407	1.603	3.983	4.355	4.572	4.671	4.765	4.289	3.851

Table 4: Slaughter figures for cattle and shoats (Mi)

Source: Economic Survey 1996 - 2004

CBS does not include camel slaughter figures. The high slaughter figures in 1999-2000 can possibly be explained by high slaughter due to drought.

Projections for red and white meat show that the country will experience deficits in beef, mutton and camel meat but will have small surpluses in goat, pork and poultry meat. The projections for 2004 to 2014 are shown in table 5.

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Item	Year	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Beef (Tonnes)	Production	323,021	332,857	342,693	353,128	363,563	374,470	385,704	397,275	409,193	421,469	434,113
	Demand	360200	371,180	382,000	393,650	405,300	417459	429,982	442,881	456,167	469,852	483,948
	Deficit	37,179	38,323	39,387	40,522	41,737	42,989	44,278	45,606	46,974	48,383	49,835
Mutton (Tonnes)	Production	40830	42006	43182	44320	45457	47821	50308	52924	55676	58571	61617
	Demand	53350	54885	56420	57905	59390	62478	65727	69145	72741	76523	80502
	Deficit	12530	12879	13238	13585	13933	14657	15419	16221	17065	17952	18885
Goat meat	Production	47810	49365	50920	52680	54440	56237	58092	60009	61989	64035	66148
	Demand	42220	43590	44960	46515	48070	49656	51295	52988	54737	56543	58409
	Surplus	5590	5775	5968	6165	6370	6581	6797	7021	7252	7492	7739
Camel meat	Production	8470	8525	8580	8685	8790	8895	9001	9109	9218	9329	9441
	Demand	8300	8350	8400	8450	8500	8602	8705	8809	8915	9022	9130
	Deficit	170	175	180	235	290	293	296	300	303	307	311
Pig Meat	Production	15326	16111	16896	17762	18628	19541	20498	21502	22557	23662	24821
	Demand	7631	7857	8083	8427	8770	9200	9651	10124	10620	11140	11686
	Surplus	7695	8254	8813	9335	9858	10341	10847	11378	11937	12522	13135
Poultry meat	Production	23196	23784	24371	24988	25604	26244	26900	27572	28261	28968	29692
	Demand	23021	23637	24253	24912	25570	26209	26864	27536	28224	28930	29653
	Surplus	175	147	118	76	34	35	36	36	37	38	39

Table 5: Production and Demand for Meat 2004-2014

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Calculations for both production and demand parameters are based on the projected livestock population and rural-urban immigration respectively. Production and demand for beef, mutton, goat meat, camel, pig, poultry and eggs have been extrapolated at the rates of 3%, 5.2%, 3.3%, 1.2%, 4.9%, 2.5% and 2.9% respectively.

The implication of these projections is that Kenya will continue to be a meat deficit country and will possibly not be able to develop a strong external market. Currently, Kenya imports animals on-the-hoof from surrounding countries and as these countries become stable, the inflow may cease. Efforts have to be made to increase production and internal marketing.

2.3.2 Estimated Consumption

There has not been any household survey and the consumption figures used are those estimated by the recent study (Agrisystems 2003) and the ILRI survey of meat consumption in Nairobi and Nakuru (ILRI 2003). The Agrisystems estimate for red meat and offal consumption is as shown in table 6.

Type	Sub-Sector and calculation	Total Cons. (mt)	Popln (million)	Per Capita (Kg/year)
Beef	Nairobi 730,000 head x 125 kg/hd	91,000	5	18.25
	Mombasa 120,000 head x 125 kg/hd	15,000	1	15
	Dairy culls 400,000 head x 125 kg/hd	50,000	24	3.25
	Other rural/local urban	28,000		
	Ranchers 36,000 offtake x 240 kg/hd	8,600	-	-
Total Beef	1.48 million x 125 kg/hd	192,600	30	6.4
Beef Offal	25%	48,200	30	1.6
Total Beef and Offal		240,800	30	8.0
Shoats	Urban Nairobi 1.46 Million x 15 kg/hd	22,000	5	4.4
	Rural 2.73 million x 15kg/hd	41,000	25	1.6
Total Shoats	4.2 million x 15 kg/hd	63,000	30	2.1
Shoat Offal	25%	16,000	30	0.5
Total Shoat Meat and Offal		79,000	30	2.6
Camel Meat	0.9 million at 1.7% offtake at 330 kg/hd	5,000	30	0.17
Camel Offal	25%	1250	30	0.04
Total Camel Meat and Offal		6,250	30	0.2
TOTAL	Beef, Shoats Camel and Offal	326,050	30	10.8

Table 6: Estimated Red Meat and Offal Consumption

Source: Agrisystems 2003

It is noted that the figures of slaughter are lower than those in table 2.5. However, these consumption figures are close to those reported in various reports. In the case of beef, the highest consumption is in Mombasa and Nairobi at 15kg/ca and 18.25kg/ca respectively while in rural areas, it is 3.25kg/ca giving an average of 6.4kg/ca and 8kg/ca when offal is included. For shoat meat and offal, the annual per

capita consumption is 2.7kg while that of camel meat and offal is 0.2kg/ca. The national consumption is 10.2kg/ca/year.

2.4 Institutional, Policy and Regulatory Framework

Since 1980 when the National Livestock Development policy paper, with emphasis on increased production to make the country self-sufficient was formulated, the sub-sector has undergone various changes. In 1987, the meat industry was liberalized promoting the emergence of many small slaughterhouses and the collapse of the monopolistic Kenya Meat Commission (KMC) causing cessation of the export trade. In 1991, dipping services were transferred to communities but the number of operational dips has dropped from 5,159 in 1990 to 2,250 currently. In the same year, provision of drugs at cost was started while clinical and artificial insemination services were privatized in 1993. During the last decade, government funding for livestock extension and veterinary services has increasingly diminished. For example, the VSD get only 18% of the required US\$10 million to effectively control FMD which has spread from the original 29 scheduled districts to 40 districts placing 4 million cattle at risk. In the case of tick control, the department receives only 5% of the required US\$2.5 million.

2.4.1 Ministry of Livestock and Fisheries Development (MOLFD)

Institutions and Roles

The Ministry, through the **Department of Livestock Production** provides production extension services in all areas and in ASAL areas, the strategy is based on improved livestock production (cropping of animals, breeding), natural resources management (range management, land tenure reform, water resources management), market development (market intelligence systems, market information, marketing infrastructure, abattoirs, processing plants, farmer marketing groups, promotion of local and external markets) and partnership/coordination (farmers, traders, private sector and development partners)..

Livestock and ASAL Development Policy

Revised Livestock Development Policy and ASAL areas Development Policy documents are under discussion and include issues on defining roles of government in regulatory role and ownership of infrastructure, drought management strategy, improving meat marketing through improved abattoirs, promotion of private sector development, commercialization of pastoralist livestock production and the legal framework.

The Veterinary Services Department is responsible for provision of animal health extension services and disease control. In relation to ASAL areas the Public Health Division of VSD is not represented in all districts in North Eastern Province 7 districts in Rift Valley (Baringo, Turkana, West Pokot, Transmara, Narok, Keiyo and Marakwet), 2 districts in Nyanza (Kuria, Suba) and 3 districts in Eastern Province (Marsabit, Tharaka and Isiolo). The services are provided by MOH, and there is a need to include these districts under VSD. In disease control, VSD concentrates on surveillance, livestock movement, and quarantine and disease free zones. The department is also responsible for implementation and review of various acts like Animal Diseases Act, Pharmacy and Poisons Act, Veterinary Surgeons Act, Animal

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Welfare Act, Meat Control Act, Hides and Skins Improvement Act and Cattle Cleansing Act among others.

The MOLFD strategy for revitalization of Agriculture and Ministry of Agriculture (MOA released the Strategy for Revitalization of Agriculture (SRA 2004) which clearly elaborated the proposal contained in the Economic Recovery Strategy for Wealth and Employment Creation (ERSWEC (2003-2007)). The SRA includes strategies on creation of an enabling environment for agricultural development, marketing and agro-processing, coordination with other sectors, institutional development among others. Of particular importance to ASAL areas is the animal health component which calls for production of freeze-dried vaccines, establishment of cold chains, TDAs control, establishment of disease free zones (DFZ) and strengthening zoo-phytosanitary capacity.

2.4.2 Government Activities with Donors in ASAL Areas

In ASAL areas, the government is working with donors notably USAID/AU-IBAR in North Eastern Pastoralist Development Project (NEPDP) with the components of institutional strengthening of KLMC and LTMS-K, financial and marketing services, disease surveillance and improving advocacy for institutions in pastoral areas. It also works with World Bank funded ALRMP which has components of drought monitoring and natural resources management, community driven development and support to local development.

The AfDB-ASAL Livestock Development Programme is also being coordinated by the government with the main activities to include sustainable rural livelihoods, animal health improvement, food security enhancement and livestock improvement.

Other unilateral and bilateral collaborators in ASAL development include ILRI, GTZ, DFID (UK), FAO, France, EAC on TDAs control, IGAD, among others.

2.4.3 NGOs Involvement in ASAL Areas

In 2001, the MOARD did an inventory of CBOs, NGOs and other private sector services providers (Nkanata 2001). It was found that there were over 800 organizations probably controlling over Kshs.10 billion annually. These included both local and international service providers. In North Eastern Province, the following organizations were identified as in table 7.

District	Organization	Activities
Wajir	1. World Vision	Irrigation and windmills for pumping
	2. Ox-Farm	Agricultural and livestock production; formation of pastoral association, restocking
	3. African Inland Church	Provision of inputs and irrigation
	4. Joint Relief and Rehabilitation Scheme	Micro-irrigation projects and dam construction
	5. Catholic Mission	Crops and livestock promotion
	6. VSF-Suisse	Livestock vaccination, data
	1. Emergency Pastoral Assistance Group – UK support	Re-stocking, disease control, provision of drugs

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Mandera	2. Mandera Educational Development Services - ActionAid	Earth dams, restocking
	3. OX-Farm Quebec	Dam desolating, drugs
	4. Northern Arid (UNDP)	Bee-keeping, hydrological survey, support of WUAs
	5. VNOPs	Drought response activities, participatory development training
	6. Medicos Del Mondos	Milk collection centres and slaughter facilities
Garissa	1. Nomadic Research Development	Bee-keeping equipment for women
	2. Live Ministry	Poultry keeping for destitute families
	3. CARE-LIME project	Introduced in 2004 to involve pastoralists in livestock fattening in Coast ranches. Deals with 6 WUAs which are being formed into Pastoralist Production Companies
Tana River	1. World Vision	Agriculture and Livestock
	2. Catholic Relief Services	Relief food
	3. Germany Assisted Settlement Programme	Agriculture and Livestock
	4. Life Ministry	Agriculture and Livestock
	5. African Inland Church	Livestock/human disease control
	6. Agha Khan Foundation	Bee-keeping/dairy goats

Table 7: Some NGOs, CBOs, working in North Eastern Province

It should be noted that NGOs activities are not static and some of these given above may have stopped functioning and new ones may have come in. They usually operate in specific divisions and move to other areas after a certain period. The NEPDP Garrissa office should undertake a survey and identify the active NGOs in each division and district. The NEPDP also needs to identify community animal health workers (CAHWs) and women/youth groups involved in livestock products (milk, hides/skins) marketing and other groups involved in bees, goats and poultry production which can be affiliated to KLMC and LTMS-K for capacity building.

2.4.4 Private Sector Involvement

Private sector stakeholders in pastoralist livestock and products marketing chains include: (i) pastoralists, (ii) middlemen and traders and (iii) transporters.

The **pastoralist/producer** is the first stakeholder in the chain as the keeper of livestock. At the grass-roots, the pastoralists are organized in livestock production groups/associations. Figures available for Wajir, Garissa and Ijara indicate the following groups as in table 8.

District	Total Groups	Category of Group
Garissa	37	- 19 Water Users Associations - 8 Drug Users Associations - 17 Water and Drug Users Associations
Wajir	31	- 1 Water Users Association - 11 Drug Users Associations

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		- 19 Water and Drug Users Associations
Ijara	39	- 16 Drug Users Associations - 13 Livestock Marketing Groups - 9 other (environment, Poultry, bee-keeping)

Table 8: Grassroots Pastoralist Groups

These groups are important as key entry points for dissemination of extension packages, sale of drugs and livestock marketing. At the district level, they form the District Pastoral Associations which are affiliated to District Livestock Marketing Councils (DLMC).

Traders and Middlemen are various categories as described below

- Itinerant traders move cattle from producers to primary markets. They often source animals from the bomas of the producers and deal in only a few animals at a time
- Middle level traders buy and move cattle from secondary to terminal markets
- Middlemen take animals from producers, itinerant traders and middle level traders and negotiate with buyers and transporters. Traders often use middlemen after they have journeyed from distant areas and have no time to negotiate with buyers and transporters. In Isiolo a women's group was met who carried out this function in sheep and goat trading.

In livestock trading, there are also brokers and assembly points, primary markets and secondary markets. They charge a fee for any animal sold. There are also trekkers and security people employed by traders in movement of animals.

Transporters operate from primary and secondary markets to terminal markets. The vehicles used are mostly those which transport consumer goods up-country and transport livestock as a return load. The vehicles are not suitable for transporting livestock and animals usually suffer injury. Transporters employ loaders and in some areas, some security staff.

National based private sector marketing associations include KLMC and LTMSK. Their objectives are described in section 1.2. These organizations being supported by various donors, can be useful to pastoralists when fully developed in areas of advocacy on policy orientation in favour of pastoral areas and in providing market information and intelligence.

2.4.5 Local Authorities

These include county and municipal councils at primary markets and city/town councils at terminal markets of Nairobi and Mombasa. At primary and secondary markets, they own market facilities i.e. marketing areas, crushes, loading ramps, marketing yards and slaughterhouses. They charge a cess for the use of facilities and an export tax for animals leaving the district. At terminal markets, they also charge levies/cess for use of holding yards, night stay and slaughter fees.

2.4.6 Stakeholders in Meat Marketing Chains

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The stakeholders in meat marketing chain include:

- (i) The Veterinary Department,
- (ii) Slaughterhouses/Slabs operators,
- (iii) Meat distributors,
- (iv) Cold storage providers,
- (v) Wholesale markets and
- (vi) Retail butchers.

The Veterinary Department through its public health section provides the services of inspection of movement permit, meat inspection, meat grading and provision of permits to transport meat. For these services, it charges fees at slaughterhouses and slabs.

Slaughterhouses and Slab operators charge for slaughtering and in cases where they have cold storage, they charge for storage. The recently **re-opened KMC** provides holding grounds, slaughtering and processing facilities and cold storage/wholesaling facilities.

Meat distributors use refrigerated vans (for large-scale distributors from own slaughterhouses) and special licenced vans partially air-cooled for short distance haul. Meat is packed in non-rusting boxes. **Large-scale cold storage** exist in KMC and some slaughterhouses. Some retailers have **cold rooms** and they charge for overnight storage. Other smaller retailers have **refrigerators** but the majority of retailers only purchase meat which they can sell in a day.

Burma market is to an extent a **wholesale meat market**. It is utilized by stock traders/butchers who buy their livestock which are slaughtered and the carcasses sold to Burma. Tanzanian cattle traders/butchers utilize this facility by slaughtering animals at Bissil and transporting to Burma.

Retail outlets consist of over 5,000 outlets in Nairobi alone categorized in high-income butcheries which sell special cuts, middle/low income butcheries which sell mainly meat with bones and extra-low income butcheries which sell low quality meat and offals. There are also many unlicenced meat kiosks selling meat.

3 LIVESTOCK AND LIVESTOCK PRODUCTS MARKETING CHAINS

Functionally, marketing can be categorized in three areas:

- (i) Exchange function (*assembly/buying, selling*),
- (ii) Physical function (*storage/quarantine, transportation and processing*) and
- (iii) Facilitating function (*standardization, financing, risk bearing and market intelligence*).

These functions vary by commodity but in essence, it can be said that marketing is the "***complex pattern of institutions and physical facilities which relate to human beings and things in the transfer of goods and services***" which means it has to consider the product, price, people and place. In marketing livestock as a commodity, various inherent difficulties have to be considered: livestock as a commodity and capital, high perish ability, scattered supply, individual variability, multiplicity of uses, varied investment requirements, seasonality in trade, among others.

3.1 Concept of Value Chains and Development of Livestock and Meat Marketing in Kenya

3.1.1 Concept of Value Chains

Basically, a value chain describes the range of activities from the producer to the consumer. In its analysis, it is broken into networks of activities controlled by categories of functionaries and distinguishes the stages in the supply process and support services to accomplish the tasks. Various dimensions are analyzed in the chain:

- Input-output structure and geographical coverage and by analyzing the value-added in the chain, the level of economic rent can be stabilized. In livestock marketing, the chains have a wide geographical coverage and margins vary by region.
- Institutional framework which identifies key players in the livestock sub-sector. These include producers, assemblers, middlemen, traders, brokers, transporters, providers of services (county/municipal councils, veterinary department and other government agencies) and consumers.
- Governance structures which influence barriers to entry. In livestock, the chains are buyer driven as production is labour intensive and entry in the trade by producers is relatively easy but at higher levels of the chain investment can be a barrier to entry. Due to the relative weaknesses of scattered producers, their only chance to get higher benefits is by forming into groups to influence the trade.

3.1.2 Development of Livestock and Meat Marketing in Kenya

Organized livestock marketing has been going on since 1952 when the African Livestock Marketing Organization (ALMO) was set up "*to organize, sponsor and encourage -----maximum outlets within Kenya for the sale of African stock produced in pastoral areas and to reduce overstocking to the carrying capacity of the land*". It was renamed the Livestock Marketing Division in 1968 (LMD) until 1982 when its marketing activities ceased. During this period, it developed various holding grounds, disease free zones and stock routes, some of which are existing despite the dilapidated state. This organization supported KMC which started

operation in 1950 as a monopolistic meat processing organization supplying large urban areas. During this phase, stock routes, holding grounds and quarantine areas were set up to divide the country into disease prone and disease free zones. Prices of livestock and meat were controlled and other slaughterhouses were not allowed in major urban areas until 1977. After 1977, KMC only handled 2.6% of total slaughter and supplied 26% of Nairobi's demand (15% through butchers and 11% through its depots). Private butchers in Nairobi supplied 89% of Nairobi's demand and the rest came from outside Nairobi area. The phase ended with the liberalization of the sector in 1987 and the collapse of KMC in 1987/88.

The existing livestock market value chains are remnants of the previous government organized systems and are heavily reliant on cattle, shoats and camels from ASAL areas. Animals traded in the chains originate from not only Kenya, but from neighbouring Somalia, Ethiopia, Sudan, Uganda and Tanzania. This marketing system introduces the problem of Transboundary animal diseases (TDAs) and the need for disease free zones (DFZs) especially if an effective export trade is to be developed. Traditionally, the chains involve the system of trekking which was well organized along the 30 stock routes with holding grounds, and trucking which is currently most common. Both of these systems will be given prominence. The current meat chain is mostly for the domestic market dominated by Nairobi and Mombasa.

Since 1987, the market has been liberalized and is characterized by an increased number of traders, butchers and slaughterhouses. The livestock marketing infrastructure (holding grounds, quarantine stations, stock routes) have to a large extent broken down and despite veterinary requirements, movement permits are not strictly adhered to and the former disease free zones are now affected. Meat export has ceased largely due to high local demand, prevalence of diseases, and stringent sanitary and phytosanitary (SPS) measures in importing countries. Livestock keepers, traders and butchers have to a large extent remained unorganized. This has led to exploitation of pastoralists by traders and middlemen. The recent formation of district pastoralist associations (DPAs), KLMC and LTMS-K will possibly pass information to pastoralists on markets.

3.1.3 Livestock and Livestock Products Marketing Chains

In the past, the Livestock Marketing Division (LMD) had developed 31 stock routes but only 14 are used as described above. The stock routes of Kenya are shown below.

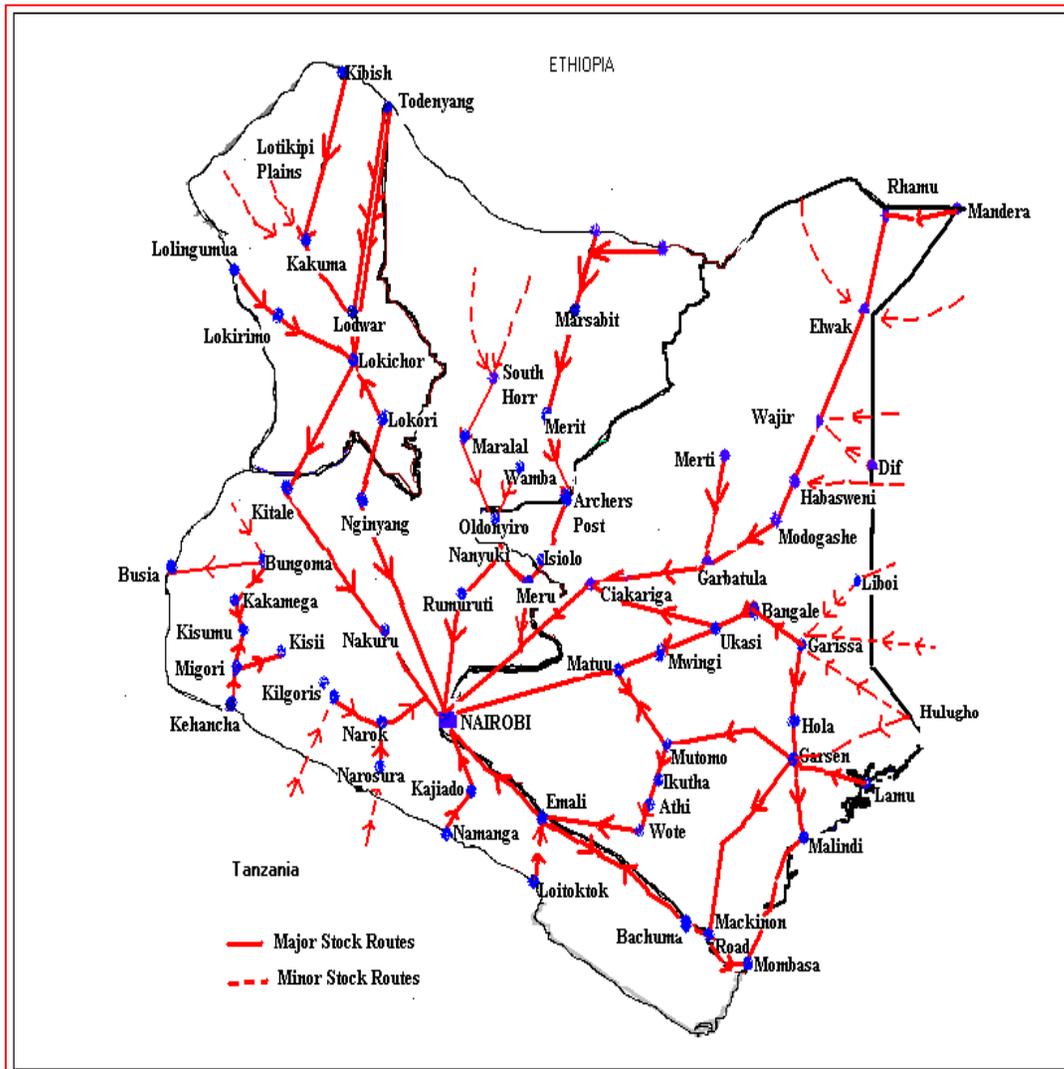


Figure 7: Map of Kenya with Stock Routes

It is noted that the routes extend to neighbouring countries of Uganda, Sudan, Ethiopia, Somalia and Tanzania which are estimated to supply 20-25% of cattle. Most of the routes terminate at Nairobi and Mombasa terminal markets. As indicated earlier, Nairobi's Dagoretti market is served by the southern route (including supplies from Tanzania), Western route from Migori and Kuria and Northern routes from North West Kenya (including supplies from Uganda, Sudan and Ethiopia) and North Eastern route mostly from Garissa. Dandora is served by northern route (Moyale, Marsabit), western (Kurua) and eastern (Garissa). Mombasa receives most of its animals from North Eastern province and Tana River. Several of the routes are discussed for the various categories of animals.

These involve cattle, sheep/goats and camels from pastoralists in ASAL areas and ranches. They are based on previously established stock routes. Currently, 14 stock routes are active as follows:

- Moyale (Ethiopian border) – Marsabit – Isiolo- Embu-Nairobi.

- Moyale (Ethiopia border) – Merti – Isiolo – Nairobi.
- Mandera (Somali/Ethiopian border) – Wajir – Isiolo - Embu Nairobi.
- Mandera (Somali/Ethiopian border) – Garissa – Tana River – Lamu – Mombasa.
- Wajir – Garissa – Mwingi - Thika – Nairobi.
- Wajir – Garissa – Tana River – Lamu – Mombasa.
- Baragoi – Maralal – Nyahururu – Nakuru – Dagoretti/Dandora/Nairobi
- Turkana – West pokot – Trans Nzoia – Nakuru _ Nairobi.
- Turkana (Lokichogio (Sudanese border), Lodwar) – Kitale Nakuru – Nairobi.
- Namanga (Tanzanian border) – Kajiado – Kitengela/Kiserian Dagoretti/Rongai
- Loitokitok (Tanzania border) Emali – Kitengela – Kiserian/Dagoretti/Nairobi
- Kuria (Tanzanian border) – Migori – Narok – Ngong/Kiserian/Dagoretti Nairobi
- Magadi – Ngong – Kiserian/Dagoretti/Rongai
- Transmara – Narok – Suswa – Dagoretti – Nairobi.

It is noted that the North Eastern area is served by six stock routes, with a catchment area extending to Somalia and Ethiopia. The northern area is served by three stock routes with a catchment as far as Southern Sudan. The southern rangelands are served by five stock routes which also trade in animals from Tanzania.

- The chains are based on trekking (mostly from pastoral areas to primary and secondary markets) and trucking from secondary markets to terminal markets of Nairobi and Mombasa. In some cases trekking is also done from the secondary to the terminal market as in the case of Garissa-Tana River-Mombasa route

3.1.5 Sources of Cattle for the Nairobi Market

Data on sources of cattle to the terminal market in Nairobi is only complete for some years and using 2001, the importance of provinces can be shown for Dagoretti and Dandora

These stock routes supply the terminal market slaughterhouses in Nairobi and Mombasa. The number of animals slaughtered in Dagoretti (2001) gives an indication of the sources as shown in figure 3.5. The total number slaughtered was 53,833 and out of this, Kajiado supplied 16,367 animals and Narok 13,167 animals. The two districts account for 55% of all animals.

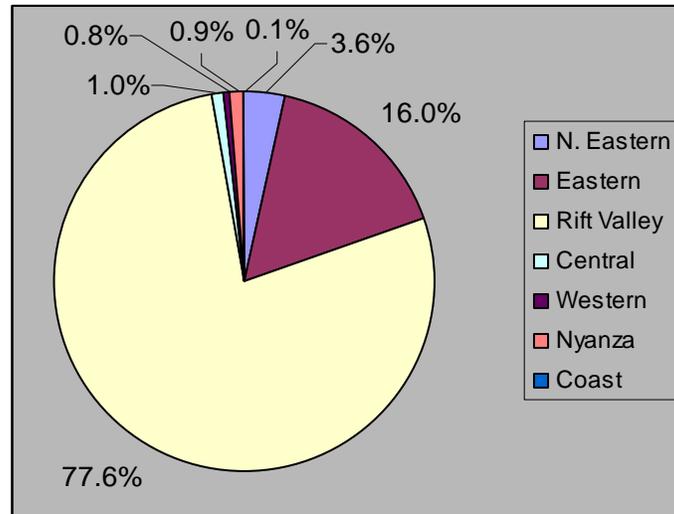


Figure 8: Sources of Cattle Slaughtered in Dagoretti (%)

These figures are only indicative as there is considerable movement of cattle from N. Eastern to Eastern provinces and other areas. However, the bulk of animals are from Southern rangelands (over 50%). In the case of Dandora slaughterhouse, the bulk of animals are from Eastern province (65%), N. Eastern (19%), Rift Valley (15%) and all other provinces (1%) as shown in figure 9.

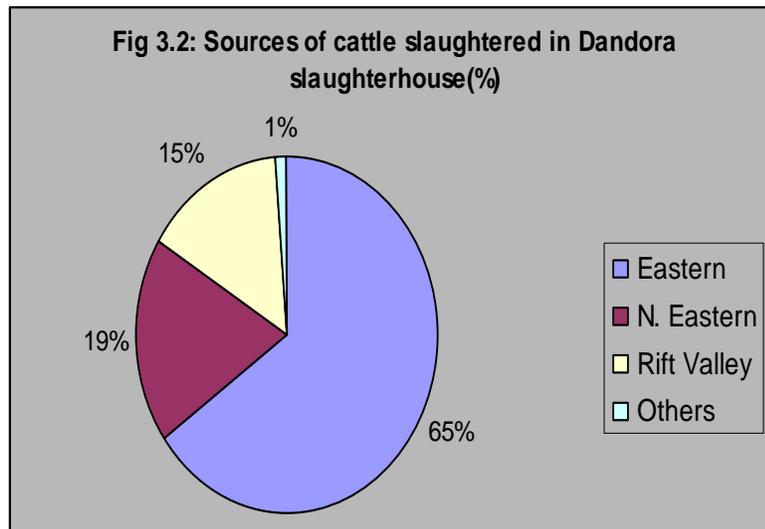


Figure 9: Sources of Cattle Slaughtered in Dandora (%)

3.1.6 Stakeholders in the Pastoral Marketing Chains

There are various stakeholders involved including pastoralists, pastoralist/trader, itinerant bush traders, trekkers, middlemen, brokers, county/municipal councils, veterinary department, transporters, stock traders/butchers, community-based livestock groups and MOLFD/GOK/donor projects.

Pastoralists are found in ASAL areas and sell animals to itinerant traders in primary markets or at boma-gate. Some pastoralists have formed pastoral production companies which sell animals as a group as in the case of CARE in Garissa. Itinerant

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traders sell animals to middlemen in secondary markets. In this group are included traders from neighbouring countries. At the secondary market, county/municipal councils charge cess and levies for every animal marketed.

Brokers operate in the markets; both secondary and terminal, to negotiate prices and connect buyers and sellers. The veterinary department issues movement permits for animals and in the case of animals to be trekked, it provides vaccination and quarantine for CBPP for 21 days before movement. Animals are trekked or trucked. Trekking is most common in North Eastern where animals are trekked down Tana River district to the Coastal areas. Trekking is also common for camels. Trucking is common for cattle and shoats. Traders can be pure livestock traders or traders-cum-butchers who buy animals and supply meat to their butcheries and other butcheries. At the terminal markets, traders sell to butchers who organize for slaughtering.

3.2 North Eastern Province Marketing Chains.

3.2.1 Provincial Livestock Production and Movement Figures

The NEPDP covers North Eastern Province which comprises of Mandera, Wajir, Garissa and Ijara districts. It is an expansive area covering 126,902 km² or 22% of Kenya's land area mostly under ecological zones IV-VI with rainfall under 400 mm per year. Livestock production is mostly nomadic pastoralism by the Somali community. Cattle population is estimated at 1 million, sheep at 0.6 mi, goats at 0.9 mi and camels at 0.5 mi a

Species	2000	2001	2002	2003
Cattle	868,000	945,687	1,018,010	1,056,280
Sheep	1,268,250	1,233,994	557,743	596,662
Goats			782,888	882,931
Camels	501,500	502,929	520,116	546,232
Chicken	-	122,453	127,349	137,782
Donkeys	35,500	30,460	29,579	49,142

Table 9: Provincial Summary of Livestock Production (2000-2003)

These figures show an increasing trend for cattle, goats and camels. For sheep, the population declined from 1.2mi in 2001 to 0.6mi in 2002 possibly because of the 1999-2001 drought. The region has been experiencing shortage of rainfall since 2003 culminating in the serious 2005 drought which was estimated to have killed 35% of cattle, 35% of sheep, 25% of goats and 1% of camels in Garissa district alone.

The latest available figures on livestock movement are for 2003 (NEP annual report) which show that 123,125 cattle were moved for sale, 203,652 shoats and 6,386 camels as shown in table 10.

Species	Mandera	Wajir	Garissa	Ijara	TOTAL
Cattle	17,838	12,634	92,581	72	123,125
Shoats	86,530	85,380	17,452	14,301	203,662
Camels		5,053	1,333	-	6,386

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Table 10: Livestock Movement as per VSD Permit

In the previous year, livestock movement from Garissa was 137,845 and the decline in 2003 was due to the rinderpest quarantine imposed in the district. The overall animals marketed in the province are shown in table 11.

	Mandera	Wajir	Garissa	Ijara	TOTAL
Cattle	29,598	19,024	92,625	15,609	156,853
Goats	67,151	44,144	21,978	15,903	131,198
Sheep	32,371	22,025		10,265	76,999
Camels	10,708	15,783	2,818	-	29,309

Table 11: Animals marketed in the Province 2003

Comparing the figures in tables 3.2 and 3.3 shows that some animals bought are not moved out of the districts and are used for breeding or local slaughter. In the case of cattle, the variance is 33,728 (21.5% of total marketed), shoats 4,535 (2%) and camels 22,923 (78% of total marketed). This implies that most of shoats and about 78% of cattle are for sale outside the province while only 22% of camels are for sale inside the province.

3.2.2 Effect of Drought on Livestock Prices

The prolonged drought caused livestock body condition to deteriorate and eventual mortality in most cases. Prices declined as animals weakened and traders were fewer. Prices for the eleven divisions of Garissa are given to show the effects of drought on prices as shown in table 12.

	2005										2006		
	Mar	Apr.	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	March
Cattle													
- Average	739	750	714	6518	642	555	606	525	549	461	423	470	4195
- Range	7	7	0	2200-	8	5	7	1	2	3	1	7	2667-

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	400 6- 964 3	350 0- 853 3	380 0- 800 0	8000	338 7- 808 0	380 0- 780 0	500 6- 700 0	333- 685 0	450 0- 700 0	373 0- 650 0	250 0- 533 3	292 5- 716 5	6774
Goats - Average - Range	102 8 726- 147 3	927 831- 112 2	1039 778- 130 8	1062 733- 1052	104 7 752- 133 1	105 2 706- 123 7	948 586- 100 5	889 638- 119 3	850 515- 111 0	683 530- 743	818 462- 127 5	747 532- 103 2	715 650- 900
Sheep - Average - Range	762 600- 111 7	732 610- 878	768 645- 100 0	744 582- 1000	733 477- 983	776 560- 100 0	710 453- 100 0	700 483- 100 0	606 475- 867	507 475- 867	632 475- 867	528 471- 700	507 504- 700

Table 12: Average District Prices in Garissa (2005-2006)

It is noted that average cattle prices declined from Kshs.7507/animal in April 2005 to Kshs.4,195/animal in March 2006. During the period, the lowest price recorded was Kshs.2,200 in Daadab in June 2005 and the highest was Kshs.9,643 in Jarajilla in March 2005. In the case of goats, the prices remained steady to August 2005 when it was Kshs.1,052 per goat but declined to Kshs.715 by March 2006. The lowest price during the period was kshs.462 per goat in Daadab in January 2006 and the highest was Kshs.1,473 per goat in Bura in March. Sheep average declined from Kshs.768 per sheep in March 2005 to Kshs.507 by March 2006 while the highest price was Kshs.1,117 in March 2005 in Jarajilla and the lowest was Kshs.453 in Daadab in September 2005.

The overall implication of low prices is that the pastoralists food security situation deteriorated and many could not afford the increased food prices forcing many households to depend on relief food. In terms of marketing, traders could only buy animals with better body condition from areas with good pasture and water leaving the most vulnerable households to lose animals.

3.3 Eastern Route: North Eastern Province and Somalia Livestock Routes

Three routes cover this region:

- Mandera (Ethiopia/Somalia Border) – Garissa – Tana River – Lamu – Mombasa which is estimated to account for 35% of animals through trekking and trucking
- Wajir – Garissa – Mwingi – Thika – Nairobi accounting for 40% of animals
- Wajir – Garissa – Mwingi – Thika – Nairobi accounting for 40% of animals
- Wajir – Garissa – Tana River – Lamu – Mombasa accounting for 25% of animals mostly to Mombasa.

As discussed above, although this route is considered as a North Eastern Province route, it has inputs from Somalia, Ethiopia and to an extent covers Eastern Province.

Analysis on this route covers trekking of cattle, camels and goats (Wajir to Garissa), trekking cattle from Somali towns of Baydabo and Dinsoor to Garissa and trekking cattle and camels from Liboi to Garissa. Group trekking from Shaat Abak Pastoralist

Production Company to Garissa Holding Company for the CARE LIME project which trucks animals to Galana ranch for fattening is also analyzed.

3.3.1 Trekking and Marketing Costs for Eastern Route

3.3.1.1 Trekking Animals from Interior (Primary) to Garissa Secondary Market

The traders involved in trekking assemble animals from owners and primary markets. In some cases, owners agree to be paid after a month as such giving traders credit. Three categories of trekkers are considered:

- Trekking cattle and camels from Wajir to Garissa
- Trekking cattle from Baydabo and Dinsoor in Somalia to Garissa
- Trekking from Liboi to Garissa (cattle and camels).

The trekker from Wajir handled cattle, camels and goats which are trekked from Wajir to Garissa, a distance of about 300km, taking 15 days. The stakeholders in this chain include assemblers, Wajir county council which charges an export cess, brokers, veterinary department, water users associations (WUA) which charge a fee for watering, trekkers and Garissa municipal council which charges an auction fee. The trader from Somalia bought cattle from Baydabo and Dinsoor in Somalia and trekked them to Garissa a distance of 400km which takes 25 days. The costs involved include militia fees at Kshs.200/head, assembly costs, brokers, trekking costs, watering/grazing costs and Garissa municipality costs. The Liboi trekker got animals from both Somalia and pays the county fees at Liboi and trekked them to Garissa a distance of 400km. The costs in trekking for three traders were as shown in Annex table I and the value chain is shown in figure 10.

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Route	WAJIR-GARISSA			SOMALIA-GARISSA	LIBOI-GARISSA	
Livestock Type	CATTLE	GOAT	CAMEL	CATTLE	CATTLE	CAMEL
Av. Buying Price	10,200	900	17,250	8,000	9,625	19,500
Costs + Loss	872	372	1,050	1,045	596	1,111
Av. Selling Price	11,750	1,300	22,750	10,625	12,375	22,250
Margin/Animal (Shs.)	672	28	4,450	1,580	2,154	1,633
Margin (%)	5.7%	2.1%	19.6%	14.9%	17.4%	7.3%

Figure 10: Value Chain Analysis of Trekking Livestock to Garissa (Kshs.)

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It is noted that cattle prices were lowest in Somalia at an average of Kshs.8,000/head and highest in Wajir at Kshs.10,200/head and in between for Liboi at Kshs.9,625/head. Camel prices were lowest in Wajir at Kshs.17,250/camel and highest in Liboi at Kshs.19,500/camel due to the current trend where the camels are being trekked to Somalia for export to Egypt. Trekking and marketing related costs for the three trekkers are as summarized in table 13.

Trekking Route	Cattle	Goats	Camels
Wajir – Garissa			
• Trekking/marketing costs	872	372	1,050
• Total costs	11,702	1,272	18,300
• % of total costs	7.5	29	5.7
Somalia – Garissa			
• Trekking/marketing costs	1,045	-	-
• Total costs	9,045	-	-
• % of total costs	11.6	-	-
Liboi-Garissa			
• Trekking/marketing costs	596		1,117
• Total costs	10,221		20,617
• % of total costs	5.8		5.4

Table 13: Trekking and marketing related costs

In the case of cattle, the trekking/marketing costs ranged from 5.8% - 11.6% of total costs while those for camels accounted for about 5.5% of total costs. In the case of goats, due to their comparatively low prices and apportionment of costs similar to bigger stocks, they were high at 29% of total costs.

In calculating gross margins, the average price per lot was used as traders prefer to buy in lots. The gross margins as shown in Annex table 1 and figure 3.3 ranged from Kshs.672/head (5.7% of sales price) for cattle from Wajir to an average of Kshs.1,867/head (16.2% of total costs) for animals from the Somali border, while that for goats was about Kshs.28 per goat (2% margin). Camel margins were lowest on the Liboi-Garissa route at Kshs.1,633/camel (7.3% of sale price) because of the high purchase price and highest on Wajir-Garissa route at Kshs.4,450/camel (19.6% of sales price) because the purchase price is lower by 13%.

Several observations can be made on these margins. First, selling using average price per lot is misleading as this is lower than prices of males which are usually traded. A trekker who pre-selects for bulls of the same age will get a higher margin. Secondly, intra-district movement increases costs as the exporting district like Wajir charges an export fee on top of council cess. This makes the returns for animals low. Finally, animals from Somalia are charged no fees or movement permits and are only charged auctioning fees in the secondary and this makes the returns comparatively high.

3.3.1.2 Trekking animals from Garissa down Tana River to ranches and slaughter

It is estimated that the Garissa-Tana River – Lamu – Mombasa trucking and trekking route accounts for 60% of animals from Garissa market (PDVs 2006) the rest being trucked through the Garissa – Mwingi – Thika – Nairobi route. Due to the poor state of Garissa – Hola – Garsen – Malindi road, it can be argued that many animals on this route are trekked than trucked. Trekking is more economical than trucking as

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animals are moved at 20km/day and is only constrained by lack of forage and water due to drought.

Cattle for trekking are required by law to be tested for CBPP after 21 days and then they can be trekked down Tana River district. Cattle and camels are the animals mostly trekked. A typical trek herd is about 300 cattle with about 6 trekkers who take 20-25 days to move from Garissa to the Coast province, mostly to ranches for finishing and then trucked to the slaughterhouse. A typical cost structure is as shown in table 14.

Activity	Cost (Kshs./head)
Purchase bull/castrate (200kg)	15,000
County council cess	100
Municipal council	160
Branding	5
Movement permit	100
CBPP Test	50
Herding in Garissa – 1 month, 6 herders @ Kshs.2,000/month	40
Vet costs	100
Trekking to Voi – 1 month (6 trekkers @ Kshs.600/animal + herding fees	600
Ranching – Kshs.160/month/3 months	480
Vet costs in the farm	150
Herders fees	60
Transport to slaughterhouse	700
Cost of marketing	150
Sub-Total	17,695
3% loss/mortality	531
Total Estimated Costs	18,226
Selling Price	21,500
Margin	3,274
Margin as % of total cost	15.2%

Table 14: Trekking Cost Structure

Cattle trekking and fattening was feasible as demonstrated above. However, this mode of marketing has to contend with possibilities of lack of pasture and water as well as insecurity. Rehabilitation of infrastructure on the established stock routes would minimize these problems. The cost elements are shown in figure 13.

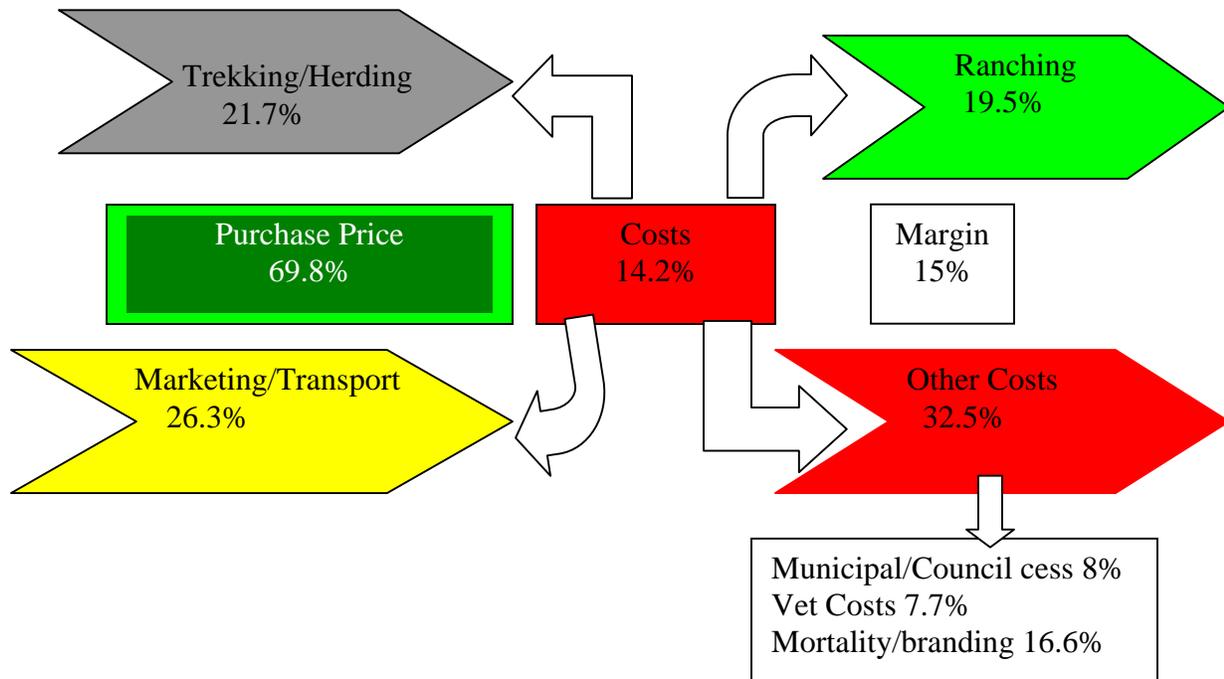


Figure 11: Value Chain for Trekking/Fattening Operation (Garissa – Coast Ranch)

3.3.1.3 Trucking Livestock to Nairobi, Mombasa and Galana Ranch

Trucking is mostly done on the Garissa – Mwingi – Thika – Nairobi route and the average cost was Kshs.18,000-25,000 for 25 heads of cattle and about 100 shoats. Trucking to Mombasa costs about Kshs.25,000 per truck. Most traders buy their livestock from Garissa Bula market but some itinerant traders buy from other markets in North Eastern province (Lower Garissa and Ijara) and Tana River district. The costs of trucking to Mombasa and Nairobi are shown for a trader buying from Garissa, CARE-Lime project trucking to Galana ranch and for four itinerant traders interviewed in Mombasa were as shown in Annex Table II and figure 12

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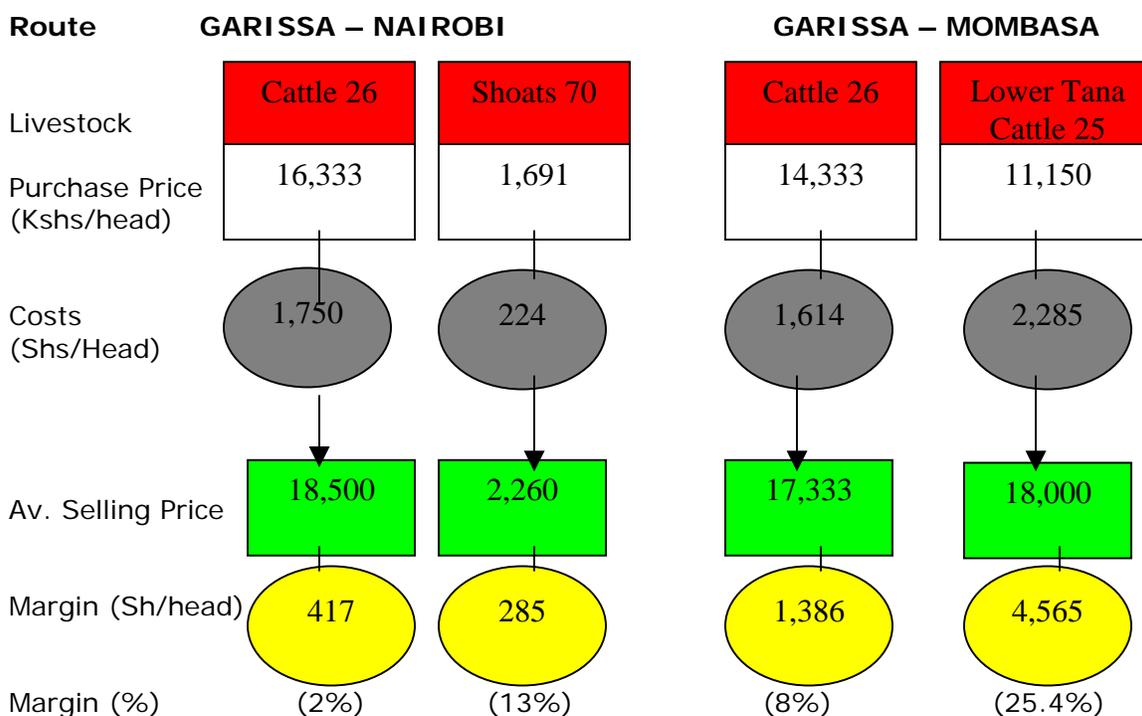


Figure 12: Value Chain for Trucking Animals from Garissa to Nairobi and Mombasa (Ranching and Slaughter)

It is shown that for Bula market trader, the margin was about Kshs.417/head or a mark up of 2.0%. Shoats which are transported on the top deck realize a margin of Kshs.285/goat (13% margin). The trader, despite getting low margins on cattle, is covered by the margins for goats. CARE-LIME project realized a margin of Kshs.1,386/head after fattening for three months and selling at Kshs.55/kg live weight at the slaughterhouse. The itinerant trader who purchases from lower Garissa and Ijara and markets in markets in Tana River (Hola, Garsen) appears to realize the highest margin of Kshs.4,565 (25.4% margin) /head despite high payment for security as they operate off the normal trading routes.

3.3.1.4 Identified Constraints in Livestock Marketing and Suggested Solutions

Stakeholders identified constraints to marketing as follows:

- Inadequate capital for livestock business and lack of credit facilities
- Uncertainty to livestock trade
- Recurrent drought
- High capital of inputs and lack of organized marketing groups
- Poor infrastructures – roads networks
- Lack of water along stock routes at the holding grounds
- Lack of livestock holding grounds, handling facilities and poor management of existing facilities
- Restrictive government regulations, quarantines resulting from frequent disease outbreaks and insufficient extension services
- Inadequate market information and limited holding facilities at terminal markets leading to oversupply of livestock at terminal markets
- High influx of livestock from neighbouring states
- Lack of export slaughterhouses

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Suggested solutions include:-

- Improved access to markets
- Policy advocacy
- Improved infrastructure
- Strengthening of user groups
- Access to credit facilities
- Improved presentation (traditional) techniques

3.4 Northern Route

3.4.1 Dynamics of livestock trade in the northern route

This route involves animals from Ethiopia and Kenya. Ethiopian animals are trekked 150-200km to Moyale and either trekked to Isiolo for trucking to Nairobi or trucked through Maralal to Nairobi as shown in figure 13.

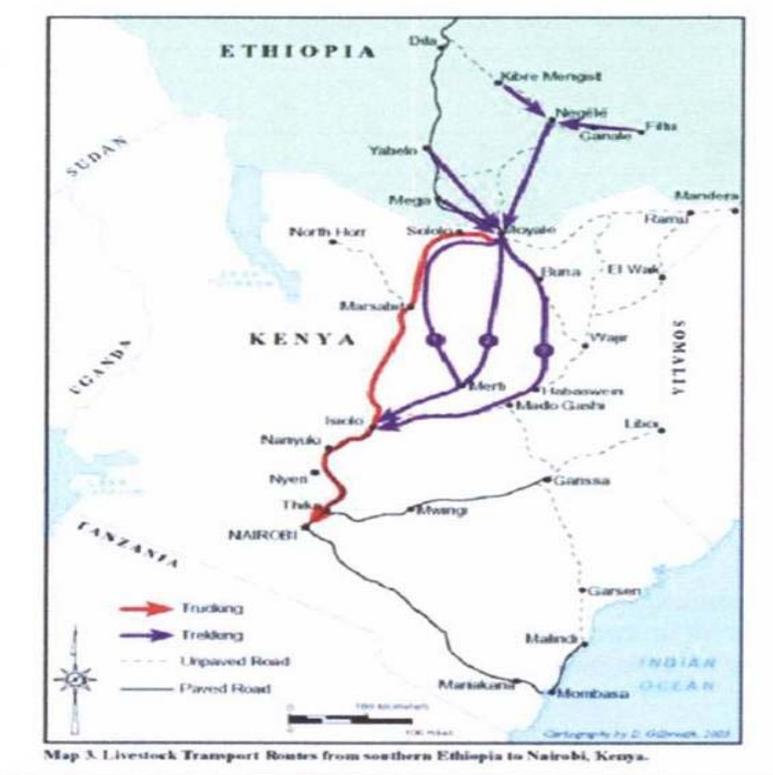


Figure 13: Livestock trekking and trucking in northern route

Internally, Isiolo which is the major secondary market attracts livestock from Wajir, Moyale, North Garissa, Marsabit and Samburu districts. Unlike the Eastern route which is mostly dominated by Somalis, the northern route exhibits strong ethnic-social heterogeneity with Burji as dominant traders (50%), Boran (22%), Gabbra (17%), Somali/Garre (9%) and others (8%). (Little P.D et al 2005). Traders in the northern route identified various problems associated with livestock trade as; insecurity, transport, pasture/water, market-related, diseases, lack of loans/credit, fees, taxes, bribes etc. as shown in table 15 where it is compared to problems in the Eastern route.

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Problem	Somalia/Kenya Border Traders	Ethiopia/Kenya Border Traders
Insecurity	20.0	32.5
Transport-related	12.0	25.0
Pasture/water	17.0	13.5
Market-related (low prices, excessive competition, etc.)	24.0	7.0
Animal disease	6.0	0.0
Loan/credit problems	7.0	12.5
Fees/taxes (incl. bribes)	4.0	9.5
Other	10.0	0.0
Total	100.0	100.0

Table 15: Occurrence (%) of major problems associated with cross-border cattle trade¹

¹N = 84 for S/K traders; 71 for E/K traders

It is noted that insecurity, transport related, loans/credit and fees/taxes problems are more serious in this route than the Eastern route. This is mainly because of the many ethnic groups involved in the area with very little social cohesion resulting in ethnic conflicts and livestock rustling. Transport is also of major concern due to long distances to the terminal market of Nairobi and transport costs are as high as 58%-76% of total costs compared to about 34% in the Eastern route.

3.4.2 Effects of drought on livestock prices

The drought of 2004-2006 had a very drastic effect on livestock prices. In the case of cattle, average prices declined from Kshs.9,927 in May 2005 to Kshs.3,445 in March 2006 while the highest price recorded was Kshs.14,670 in May 2005 and the lowest was Kshs.2,272 in February 2006. Goat average prices also declined from Kshs.1,330 in April/May 2005 to Kshs.574 in February 2006. The highest price for goats was Kshs.1,681 in May 2005 and the lowest at Kshs.300 in January 2006. Prices of sheep also showed similar trends declining from Kshs.1932 in April/May 2005 to Kshs.454 in January 2006. The highest price realized was Kshs.1,269 in April/May 2005 to Kshs.380 in January 2006 as shown in table 16:

Type	2005										2006	
	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Cattle	9672	9927	7360	7389	6583	6650	6709	6499	4664	4040	3702	3541
Goats	1329	1330	1026	800	1155	1143	922	1000	620	574	912	822
Sheep	930	932	706	800	723	826	947	716	501	454	551	591

Table 16: Average prices of livestock in Isiolo district 2005-2006

Source: ALRMP-DEWS March 2006

The implication of this price decline, coupled with drought related deaths was the deterioration of households' food security. In relation to marketing, there was shortage of good quality animals and in the near future, the market might face shortages as pastoralists build their herds. The problem of drought on marketing can be illustrated by the high rejections at Isiolo Sales Yard as shown in Table 17.

	No. Offered	Not Sold	% not sold
Cattle	36,241	14,121	39
Shoats	52,326	24,411	47
Camel	36	36	0
Donkeys	327	142	43

Table 17: Livestock Sales and Rejections Indicated at Isiolo Sales Yard – 2005

Source: Isiolo District Report, 2005

The high numbers not sold can only be explained by the poor conditions of animals due to drought and possibly traders not visiting the market due to lack of good quality animals. Official livestock movement was minimal, cattle (4,506), sheep (5,624), goats (4,923) and camels (742).

3.4.3 Northern Route Livestock Marketing Chains

The value chains analyzed under this route include:

- Moyale - Isiolo (Trekking)
- Mandera – Isiolo (Trekking) – Voi (Trucking for fattening) – Mombasa (for slaughter)
- Moyale – Isiolo (Trekking) – Nairobi (Trucking) – Nanyuki (fattening)
- Samburu – Isiolo (Trekking)
- Wajir – Isiolo (Trekking)
- Camel trekking: Marsabit – Isiolo - Nairobi

The analysis of the value chains was done under: (i) trekking from interior to Isiolo (from Moyale, Samburu and Wajir), (ii) trekking to Isiolo then trucking and (iii) camel trucking from Marsabit – Archers Post – Isiolo – Meru – Tharaka – Mwingi – Athi River – Kitengela (> 800 km).

3.4.3.1 Trekking Cattle from Interior to Isiolo Market

It is argued that about 60% of livestock traded in this route originate from Ethiopia and Somalia through the porous border. Animals are assembled at the various markets and then trekked to Isiolo from; Archers Post (14-21 days), Mandera (30 days), Wajir (15-20 days) and Moyale (30 days). Three traders trekking and selling in Isiolo secondary market were interviewed and the costs incurred were as shown in Annex Table III and Figure 3.6 The trader from Moyale trekked 100 cattle and 30 camels, that from Samburu trekked 100 cattle and 100 shoats while that from Wajir trekked 100 cattle and 10 camels

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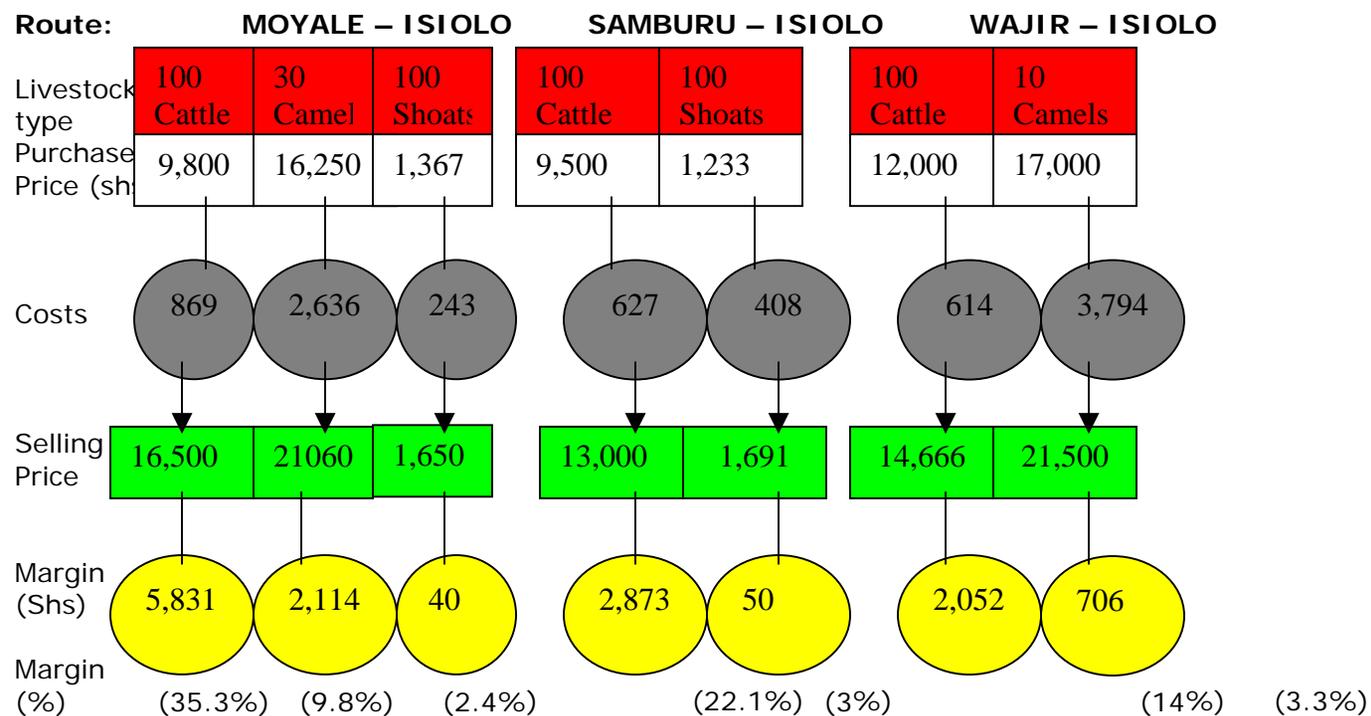


Figure 14: Trekking Value Chains to Isiolo (Kshs/head)

Cattle prices ranged from Kshs.9,000 to Kshs.16,000/head and averaged at Kshs.10,453/head while camel prices averaged at Kshs.17,000/head. Sheep prices averaged at Kshs.1,250/head and that of goats at Kshs.1,350/head. Analysis of marketing related costs shows that insecurity in the region contributes significantly in costs. Considering the case of cattle, it was noted that security accounted for 7% on Moyale-Isiolo route, 5.7% on Samburu – Isiolo route and 7.4% on Wajir – Isiolo route. The insecurity is explained by conflicts on grazing between various ethnic groups in the area including the Gabbra, Burji, Rendille, Samburu and Borana as well as raiding from Ethiopia.

Mean prices for cattle at the Isiolo market were Kshs.14,722/head but ranged from Kshs.13,000 to Kshs.16,500/head. The difference was due to the differences in breeds with the heavier Boran cattle fetching more than the East African Zebu. Margins for cattle ranged from 14% to 35.3% of sales price and were highest on Moyale – Isiolo route possibly because most animals are Boran cattle and those originating from Ethiopia. In the case of camels, the margins were low at 3.3% on Wajir – Isiolo route and 9.8% on Wajir – Isiolo route while that of shoats was 3% of the costs.

3.4.3.2 Trekking to Isiolo and Trucking to Terminal Markets and Ranches

This is a two-stage value chain involving cattle and camels. The first stage involved trekking from Marsabit, Mandera and Moyale to Isiolo. In the second stage, cattle were trucked to Voi/Mariakani for slaughter and to Nairobi for slaughter. Immatures were also trucked to Nanyuki ranches for fattening. Transport costs were Kshs.1,500/head to Voi, Kshs.1,000 to Nairobi and about Kshs.70/head to Nanyuki. Transport costs ranged from 30-40% of market related costs as the distance from Isiolo to Nairobi is over 700km.

Prices in Voi averaged at Kshs.18,125/head giving a margin of Kshs.3,369/head or a 18.6% margin. In Nairobi, the prices were about Kshs.17,000 – Kshs.19,000/head giving a margin of Kshs.1,253/head or a margin of 7.3% of sales price. These long distance cattle traders got a lower margin than Isiolo due to the transport costs. However, considering that they were likely to truck animals of similar weights like bulls/castrates, the margins can be higher than those calculated for a selling lot. Camels realized a margin of 5%-8% of sales price. The costs and margins in this value chain are shown in Annex table IV and figure 15.

KENYA LIVESTOCK SECTOR STUDY

Trekking Route MARSABIT – ISIOLO MANDERA-ISIOLO MOYALE – ISIOLO

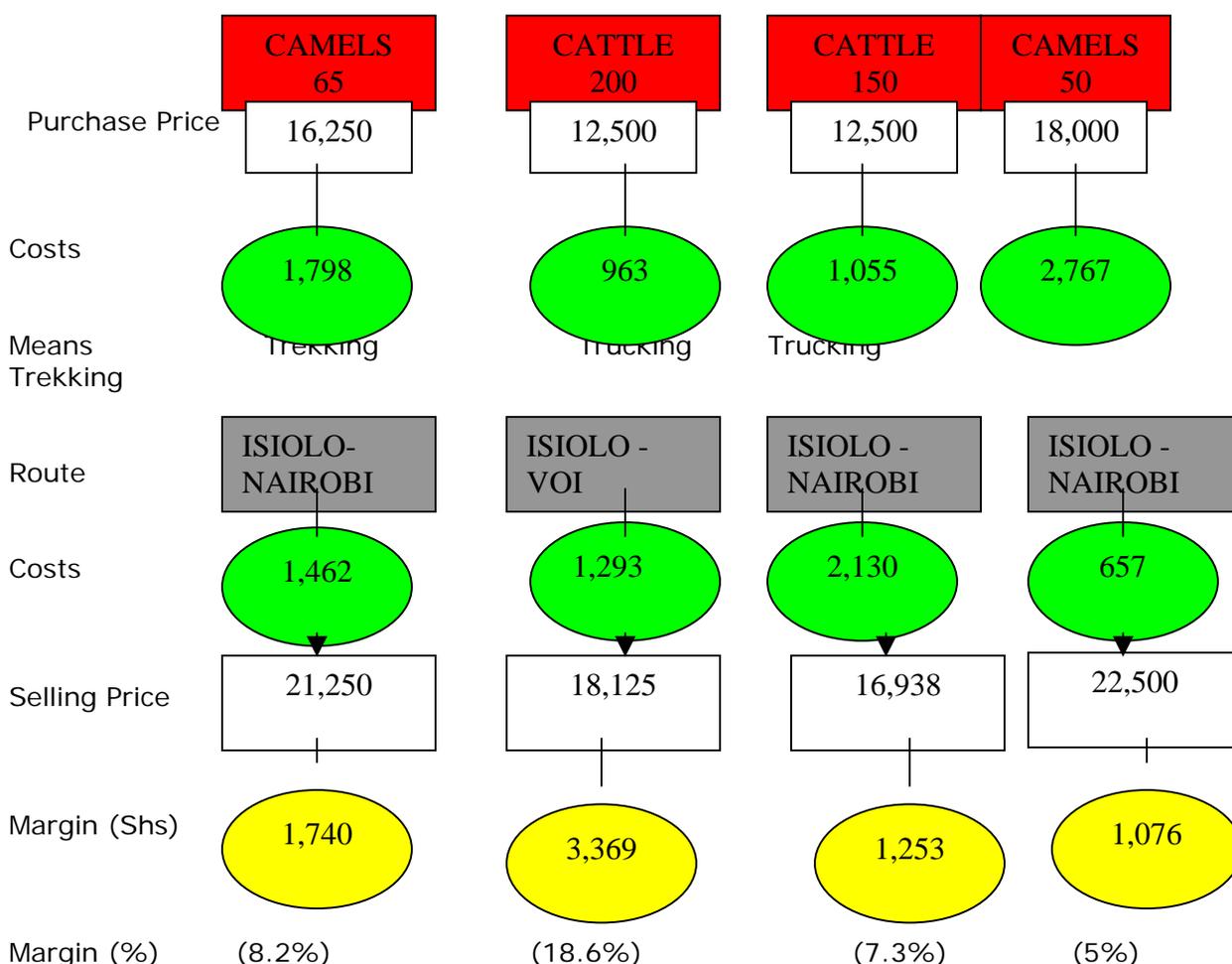


Figure 15: Value Chains for Trucking Cattle to Nairobi/Voi and Trekking Camels to Nairobi

3.4.3.3 Trekking Camels from Isiolo to Nairobi

Camels are usually trekked to Nairobi from Isiolo in a journey taking two months. The trek for the Marsabit camel trader is over 800km. The route is Marsabit – Archers Post – Isiolo – Meru North – Tharaka – Mwingi – Athi River – Kitengela. Five trekkers were used and paid Kshs.7,000 per trip. Security is also used in the first stage to Isiolo. The total market-related costs were Kshs.211,875 for the whole trip and trekking accounted for 43% of market costs while security/boma fees accounted for 25% of total costs as calculated from Annex Table III

Prices in Marsabit averaged at Kshs.16,250/camel in Marsabit and Kshs.18,000/camel. At the Kitengela Terminal Market, the average price per Marsabit camel was Kshs.21,250 giving a margin of Kshs.1,740/head or a 8.2% mark-up on sales price while for a Moyale camel, it was Kshs.22,500 giving a margin of Kshs.1,076/head or a margin of 5%. Trekking and security costs are the major

cost components accounting for 60% and 40% on the two routes respectively. The differences reflect the level of insecurity in the routes.

3.5 Livestock Trading at the Ethiopia/Somalia Borders (Mandera and Wajir Districts)

Some aspects of livestock marketing in Mandera and Wajir districts were captured by interviews with traders at Isiolo and Garissa. Subsequent visits to Mandera and Isiolo were done and several traders were interviewed as analyzed below.

3.5.1 Livestock Marketing Value Chains in Mandera

Mandera town is at the farthest northeast Kenya at the boundary of Southern Ethiopia and northwestern Somalia. Its catchment includes both Somalia and Ethiopia. Analysis was made for traders trucking cattle to Nairobi, trekking camels to Garissa and trekking shoats from Ethiopia and Somalia/Ethiopia to Mandera market. Mean buying prices for cattle trucked to Nairobi were Kshs.10,667/head and Kshs.13,833/head for the two traders respectively. Trucking and other marketing costs were Kshs.2,362/head and Kshs.2,313/head respectively. Selling prices were Kshs.14,167/head and Kshs.17,167/head respectively. The traders realized margins of Kshs.1,139/head and Kshs.1,021/head (8% and 6%) respectively. The largest element of costs is transport costs averaging at Kshs.90,000/trip or Kshs.2,000/head.

Camels are trekked from Mandera to Garissa. The average buying price at the border was Kshs.13,000/head and trekking and marketing costs were Kshs.2,253/head with trekking costs accounting for 36% of costs. The average selling price at Garissa was Kshs.18,000/head and the trader realized a margin of Kshs.2,747/head (15.3% of selling price). In the case of shoats bought in Somalia/Ethiopia and trekked to Mandera the average purchase price was Kshs.967/head while trekking and other costs were Kshs.295/head. The sales price was Kshs.1,350/head and the trader realized a margin of Kshs.88/head (6.5% of sales price). The detailed costing were as presented in Annex Table VIII and Figure 16.

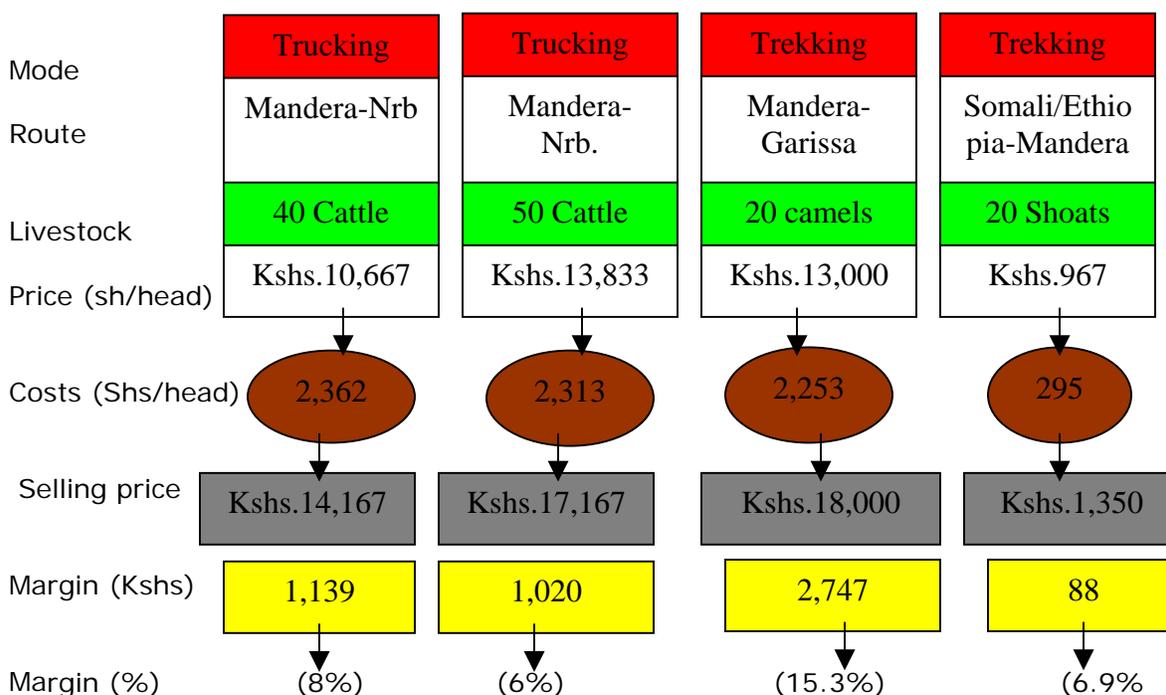


Figure 16: Madera Livestock Marketing Value Chains

3.52 Livestock Marketing Value Chains in Wajir District

Wajir district borders Ethiopia and Mandera to the north, Isiolo to the West, Somalia to the east and Garissa to the south. Livestock traded are mostly from within the district, Somalia and Ethiopia. Livestock from Wajir is either trekked to Isiolo or Garissa. The traders interviewed were trekking cattle and shoats to Garissa and camels to Isiolo.

Mean prices for cattle were Kshs.7,875/head and Kshs.8,000/head for the two traders respectively. Trekking/marketing costs were Kshs.902/head and Kshs.867/head respectively. The traders sold at Kshs.10,313/head and Kshs.13,650/head respectively and realized margins of Kshs.1,536/head and Kshs.4,783/head (15% and 35%) respectively. Camels trekked to Isiolo were purchased at an average price of Kshs.14,500/head and trekking/marketing costs were Kshs.2,058/head. The sales price at Isiolo was Kshs.17,560/head giving the trader a margin of Kshs.1,002/head (6% of sales of prices). Shoats were purchased at an average price of Kshs.971/head and trekked to Garissa at a cost of Kshs.336/head. The shoats were sold at Kshs.1,392/head realizing a margin of Kshs.85/head (6% margin). The breakdown of costs and margins was as shown in Annex Table IX and Figure 17.

KENYA LIVESTOCK SECTOR STUDY

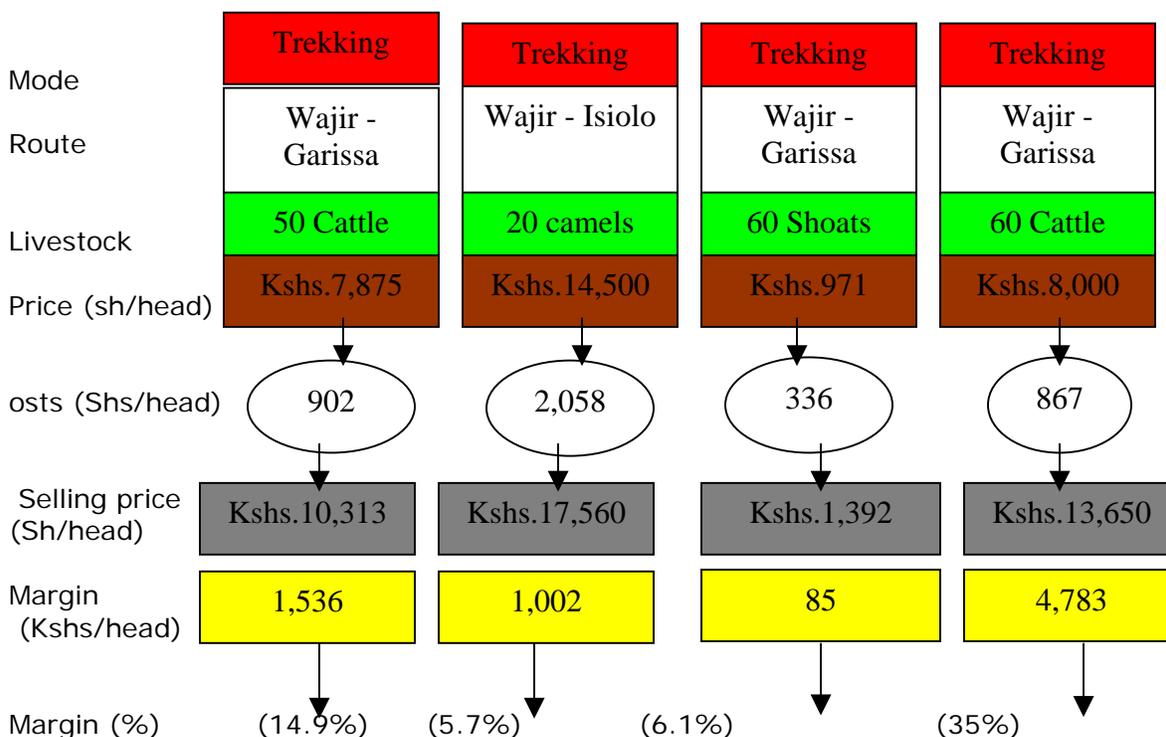


Figure 17: Wajir Livestock Marketing Chains

3.6 Southern Route Value Chain

3.6.1 Marketing System

The southern route's catchment area is dominated by Masaai/Tanzania cattle, livestock from Ukambani and others from Migori/Kuria. Analysis of slaughter figures for Dagoretti the main market shows that out of 53,833 animals slaughtered in 2001, the majority came from Masaailand/Tanzania with Kajiado accounting for 30%, Narok 24.5% while the Ukambani districts supplied 10%, mostly from Mwingi (8.8%) and the Kuria/Migori route for 3%. The rest came from the rest of Rift Valley.

Kajiado district is the major supplier of livestock for slaughter to Nairobi. However, a considerable number of livestock is from Tanzania. Population figures showed that the district had 457,863 heads of cattle, 513,584 sheep, 492,963 goats and 452 camels as shown in table 18.

	CATTLE	SHEEP	GOATS	Camel
CENTRAL	69456	83628	88859	182
MAGADI	19029	92686	90551	0
NAMANGA	22068	28743	41843	250
LOITOKITOK	72019	86786	72178	0
MASHURU	78588	67304	107193	0
NGONG	171960	115771	76705	19
ISINYA	24743	38666	15634	1
GRAND TOTAL	457,863	513584	492963	452

Table 18: Livestock Population by Division (Kajiado) (2003-2004)

It is noted that Ngong division has the largest number of cattle and sheep accounting for 37% and 23% of total cattle and sheep respectively. Mashuru division had the largest number of goats accounting for 22% of total goats.

The district livestock slaughter was 33,988 cattle, 21,188 sheep, 20,117 goats and one camel in 2005. The slaughter was undertaken in 25 slaughterhouses/slabs with Kiserian, Keekonyokie, Isinya, Kitengela and New Bissil dominating the slaughter as the meat is exported to Nairobi. These big slaughterhouses accounted for 78%, 68% and 48% of total slaughter of cattle, sheep and goats respectively as shown in table 19.

KENYA LIVESTOCK SECTOR STUDY				
STATION	CATTLE	SHEEP	GOATS	CAMELS
1. NGONG DIVISION				
Kiserian				
Keekonyokie	4011	6268	5051	-
Ngong Butchers	8483	1646	1023 663	-
Olekasasi	1263	871	-	-
Olepolos	172	-	27	-
Ewuaso Kedong	-	-	16	-
	20	73		-
SUB-TOTAL	13,949	8858	6,780	0
2. MAGADI DIVISION				
Magadi Town	189	-	-	-
SUB-TOTAL	189	-	-	-
3. CENTRAL DIVISION				
Kajiado Town	1748	1847	2169	1
Mile 46				-
SUB-TOTAL	1748	1847	2169	1
4. ISINYA DIVISION				
Isinya	4799	777	470	-
Kitengela	3935	4947	2694	-
SUB-TOTAL	8734	5724	3164	-
5. NAMANGA DIVISION				
Namanga	530	886	4195	-
Mile 9	239	-	-	-
Ngatataek		-		
Old Bissel	-	-		
New Bissel	5346	890	514	
SUB-TOTAL	6115	1776	4709	-
6. LOITOKITOK DIVISION				
Loitokitok town	747	520	856	-
Illasit	330	280	292	-
Rombo	39	320	345	-
Entarara	-	298	317	-
Kimana	505	853	666	-
Isinet	-	-	-	
Namelok	-	-	-	
SUB-TOTAL	1621	2271	2476	-
7. MASHURU DIVISION				
Sultan Hamud	-	-	-	-
Masimba	642	712	819	-
SUB-TOTAL	642	712	819	-
GRAND TOTAL	33,998	21,188	20,117	1

Table 19: Table 3.11: Livestock Slaughter in Kajiado – 2005

KENYA LIVESTOCK SECTOR STUDY

Cattle movement out of the district for slaughter and breeding was as below:

Destination	Cattle	Sheep/goats	Pigs	Other	Purpose
Kitui	172	88	-	-	Breeding
Farmers choice	-	-	1,289	-	Slaughter
Kwale	3,045	7,340	1,289	-	
Uasin Gishu	2	-	-	-	Breeding
Machakos	780	2,030	-	-	Slaughter
Kiambu	54	55	168	--	
Trans Nzoia	-	-	-	-	Breeding
Nairobi	10,320	8,368	60	-	Slaughter
Muranga	11	15	-	-	Breeding
Kirinyaga	34	45	-	-	Breeding
Taita Taveta	3	-	-	-	Breeding
Nakuru	13	16	-	-	Breeding
Embu	10	-	-	-	Breeding
Sotik	2	-	-	-	Breeding
Nyeri	35	-	-	-	Breeding
Gucha	2	6	-	-	Breeding
Nyandarua	7	-	-	-	Breeding
Kisii	1	2	-	-	Breeding
Kapsabet	3	234	-	-	Breeding
Kilifi	2	-	-	-	Breeding
Nanyuki	1	-	-	-	Breeding
Narok	1	3	-	-	Breeding
Mariakani	448	1,500	-	-	Slaughter

Table 20: Movement out of the district

It is noted that Nairobi accounted for most of cattle for slaughter.

The district has a vibrant hides and skins trade with 25 slaughter premises, 43 curing premises and 50 trading stores as shown in table 21.

DIVISION	SLAUGHTER PREMISES	CURING-PREMISES	TRADING STORES
NGONG	6	13	14
MAGADI	1	1	2
ISINYA	2	6	7
CENTRAL	2	4	4
NAMANGA	5	10	11
MASHURU	2	3	4
LOITOKITOK	7	6	8
TOTAL	25	43	50

Table 21: Hides and Skins Premises

The annual production figures were 656,386 kg of hides, 49,577 goat skins and 52,253 sheep skins as shown in table 22.

KENYA LIVESTOCK SECTOR STUDY

HIDES;

GRADES	I	II	III	IV	TOTAL	KILOS
S; D	3,874	1,941	509	311	6635	33,175
W;S	21,665	12,047	3,428	858	37,998	379,980
G; D	-----	822	1,406	670	2,898	9,940
GREEN	8,253	3,169	1,575	726	13,723	233,291
TOTAL	33,792	17,979	6,918	2,565	61,254	656,386

GOAT SKINS:

GRADES	1	11	111	1V	TOTAL
S; D	4,211	1,927	1,111	590	7,839
W;S	18,302	7,435	2,359	851	28,947
G; D	-----	708	1,703	477	2,888
GREEN	6,125	2,453	847	478	9,903
TOTAL	28,638	12,523	6020	2,396	49,577

SHEEP SKINS:

GRADES	1	11	111	1V	TOTAL
S; D	4,127	1,998	1,235	595	7,955
W;S	23,846	7,129	2,782	1,420	35,177
G; D	-----	743	1,120	622	2,485
GREEN	4,081	1,484	623	448	6,636
TOTAL	32,054	11,354	5,760	3,085	52,253

Table 22: Hides and Skins Annual Production Figures

There are 18 livestock markets in Kajiado but the main ones are Emali, Bissel, Ewaso Kedong, Oldonyonyoike, Sultan Hamud, Sajiloni, Shompole, Rongo and Eingata Wuas. The operation of these markets is as summarized in table 22.

Market	Ave No. Cattle Sold /Mkt. Day	Source of Stock	Main Destination	Facilities
Emali (main market for southern area)	358	Loitokitok, Tanzania, Mashuru Ranches	Nairobi, Mombasa Machakos	Sale/auction yard, holding ground
Bissel	127	Ranchers, Tanzania and Namanga	Nairobi, Kiserian, Dagoretti	Sale and auction yard (vandalized), holding grounds
Ewaso Kedong	165	Magadi, Ngong and Tanzania	Nairobi, Kiambu and Naivasha	Sale/auction yard (security fence to be erected)

KENYA LIVESTOCK SECTOR STUDY

Market	Ave No. Cattle Sold /Mkt. Day	Source of Stock	Main Destination	Facilities
Oldonyonyokie	62	Magadi, Shompole Mkt, Tanzania	Kiserian and Dagoretti	Sale/auction yard
Sultan Hamud	43	Masuru, Makueni	Emali, Nairobi	Open grounds
Sajiloni	31	Mashuru, Namanga	Nairobi, Kajiado and Kiserian	Open grounds
Shompole	18	Magadi, Tanzania	Dagoretti, Kiserian	Open grounds, undeveloped
Rombo	23	Ranchers, Kimana Mkt.	Loitokitok, Tanzania	Sale/auction yard in need of repairs
Elangata Wuas	20	Namanga, Tanzania	Kajiado, Bissel	Open grounds

Table 23: Livestock Market in Southern Route (Kajiado)

Source: Agrisysystems (2003)

It is noted that Emali and Bissil are the main markets and they sell cattle from Tanzania, Ukambani and from Maasailand. It is estimated that the imports from Tanzania are as high as 60% of the cattle sold.

3.6.2 Emali Market

Emali is the main market in Eastern Kajiado and lies halfway between Mombasa and Nairobi and being on the highway, it is strategically situated to supply both places. Animals in the market are from the interior of Kajiado, Loitokitok, Tanzania and Ukambani mainly from pastoralists and individual and group ranches. The destinations of animals are Mombasa and Nairobi for slaughter and Taita Taveta ranches for fattening. The methods used are trekking and trucking. Four value chains were analyzed: (i) cattle trekking to Mombasa, (ii) cattle trekking to Nairobi, (iii) trucking of immatures to Taita Taveta ranches for fattening and (iv) trucking cattle and shoats to Nairobi for slaughter. The four value chains are summarized in Annex Table V and Figure 18.

Means	Trekking	Trucking	Trucking	Trucking	Trekking	
Route	EMALI-NAIROBI	EMALI - VOI	EMALI - NAIROBI			EMALI-MOMBAS
Livestock	Cattle - 100	Immatures 20	Cattle 25	Sheep 25	Goats 30	Cattle 100

KENYA LIVESTOCK SECTOR STUDY

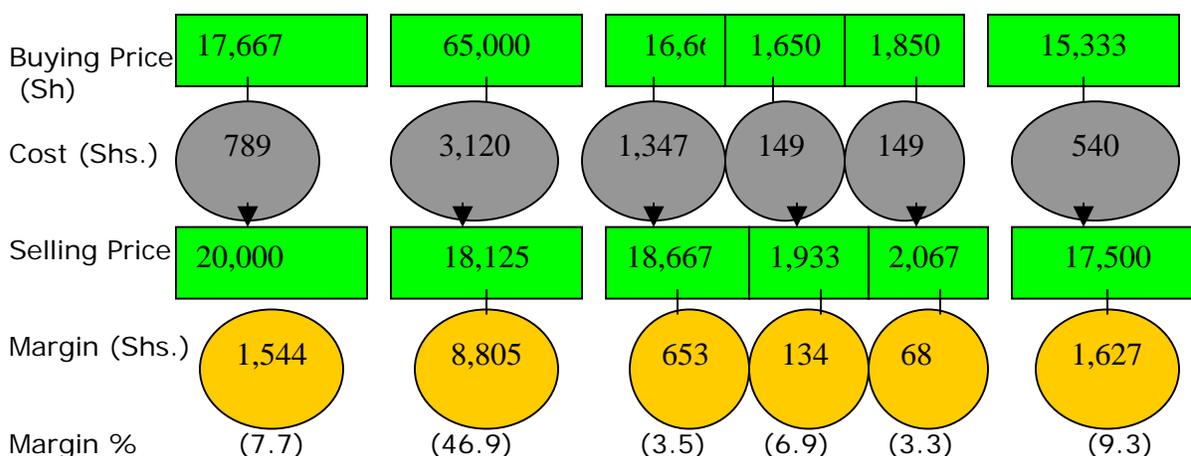


Figure 18: Value Chains for Livestock Trade from Emali to Voi, Mombasa and Nairobi

The Emali-Nairobi cattle trekking chain is common and the trader studied trekked 100 heads of cattle. The average purchase price was Kshs.17,667/head and market-related costs totaled Kshs.789. Of this, cost trekking costs accounted for 42% of costs. The average selling price in Dagorreti was Kshs.20,000 per head giving a margin of Kshs.1,544/head or a margin of 7.7% over sales price. **The cattle and shoats trucking to Nairobi market chain** is also used as Emali is on the Mombasa highway. The trader purchased cattle at a mean price of Kshs.16,667 per head and sold them at Nairobi at a mean price of Kshs.18,667/head. Market-related costs totaled Kshs.1,347 per trip (25 cattle) and trucking costs accounted for 68% of costs. The trader realized a margin of Kshs.653/head or 3.5% mark-up. The trader used a double trailer to carry additional 25 sheep and 30 goats. The margin for sheep was Kshs.134/head or 6.9% mark-up while that for shoats was Kshs.68/head or 3.3% mark-up. The margins appear low but the total return to the trader for one day's operation was Kshs.21,715/day.

The Emali-Mombasa cattle trekking value chain is also used. The trader bought animals at an average price of Kshs.15,333/head and marketed them at Kshs.17,500/head in Mombasa. Market-related costs in this route totaled Kshs.520 which was lower than trekking to Nairobi. Trekking costs/animal were also lower and accounted for 29% of costs far lower than the Nairobi case. Margins realized in this chain were Kshs.1,627/head or 9.3% margin on costs

Trucking immatures to Taita-Taveta for fattening appeared to be the most lucrative value chain. The trader bought immatures at Kshs.6,500 and trucked them to a ranch in Voi where they are fattened for 3 months and then slaughtered at Mariakani slaughterhouse and the trader sells meat on CDW basis (125kg) at Kshs.145/kg. The total marketing, fattening and slaughter-related costs were Kshs.3,120 of which transport accounted for 27%, fattening for 17% and slaughter/distribution-related costs for 36% of total costs. The trader realized a margin of Kshs.8,505/head or 46.9% margin on the sales price. Despite the three months wait, the trader realized a very attractive margin.

BISSIL MARKET

KENYA LIVESTOCK SECTOR STUDY

Bissil market is in Namanga Division halfway between Nairobi and Namanga/Tanzania border. Namanga division has a population of 22,068 cattle, 28,743 sheep and 41,843 goats the lowest population in the district. Its importance is due to cattle inflows from Tanzania through the porous border. It operates as a secondary market with about 127 cattle traded per market day. It also operates as a slaughterhouse with 5,346 cattle, 890 sheep and 514 goats slaughtered in 2005, with most of the meat destined for Nairobi. Tanzania traders bring animals on Friday for direct sale or slaughter and distribution in Nairobi during the weekend especially to Burma wholesale market.

Six traders were interviewed: (i) three shoats traders who buy shoats at Bissil and truck them to Dagoretti for slaughter, (ii) cattle/meat trader buying cattle in Bissil then slaughtering at Bissil slaughterhouse and transporting meat to Burma, (iii) cattle trekker of immatures to ranch for fattening and (iv) cattle trekker from Bissil to Nairobi. The costs and margins for these traders are shown in Annex table VI and VII and Figures 3.9 and 3.10. The margins realized for trucking shoats to Nairobi for slaughter were between 2.6% and 3.4% almost similar to those of Emali to Nairobi chain.

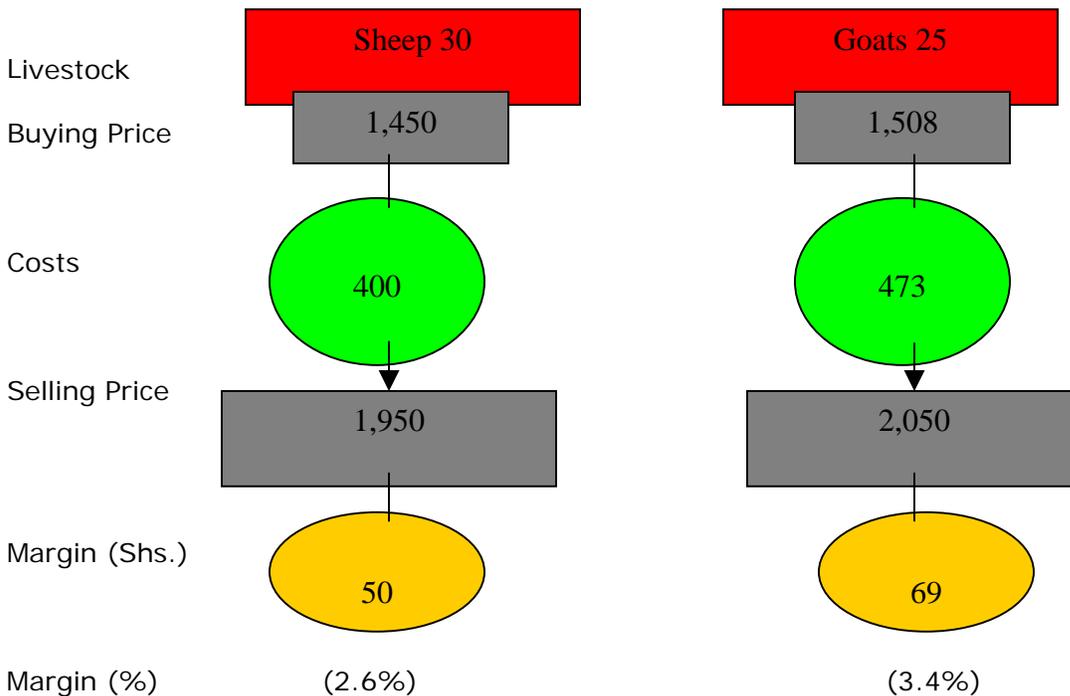
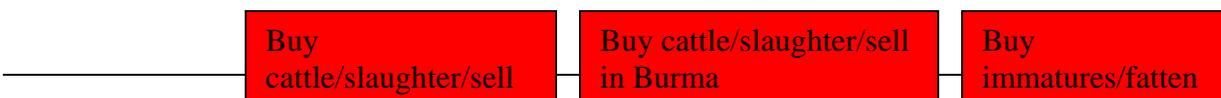


Figure 19: Value Chains for Shoats Trucking Bissil – Nairobi (Shs/head)

Sheep prices averaged at Kshs.1,450/head at Bissil and costs associated with transporting to Nairobi averaged at Kshs.400/head. Selling prices averaged at Kshs.1,950/head giving a trading margin of 2.6% of sales price. In the case of goats, the buying and selling prices are higher at Kshs.1,508/head and Kshs.2,050/head respectively giving a margin of 3.4% of sales price.



KENYA LIVESTOCK SECTOR STUDY

Type of Operation

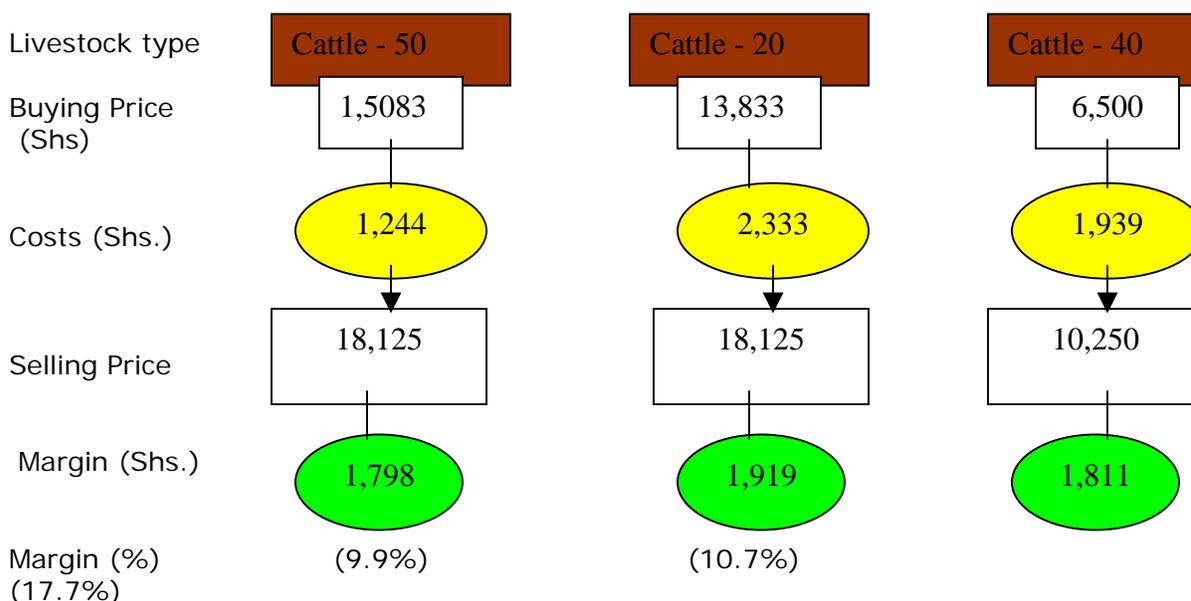


Figure 20: Value Chains for Cattle/Meat and Fattening Operations

The first trader bought cattle at Bissil market and slaughtered at Bissil slaughterhouse and sold meat to butcheries. This chain realized a margin of 9.9% of sales price. The second trader bought and slaughtered meat at Bissil and distributed meat to Nairobi and realized a margin of 10.7% of sales price. The third trader dealt with immatures which were fattened in own ranch. Mature animals were then sold realizing a margin of 17.7% of sales price.

3.63 Understanding of Objectives and Benefits of KLMC

The KLMC was established in March 2000 under the Companies Act as a company limited by guarantee and not having a share capital. Its objectives are as discussed in section 1.2. It has been in operation for 6 years and its impacts among the livestock traders and its impacts as assessed by Emali and Bissil traders is as given in table 23 and 24.

Assessment Area	TRADERS RESPONSE			
	Joel Mugur	Duncan Leyauron Sinkeet	Paul Lesalul	Paul Musyoki
A. General knowledge on livestock marketing agencies, location, duration of status	KMC; stalled but hope of reopening	KMC, KLMC, KMC over 2 years KLMC not sure	Yes KLMC – Its national offices in Nairobi and Mombasa	KMC, Nairobi and Mombasa Known for over 20 years but stalled
B. Knowledge of	Yes	Yes	Heard of KLMC	Yes

KENYA LIVESTOCK SECTOR STUDY

KLMC				
b1: Location	ASAL districts but mainly North Eastern	ASAL areas	Mombasa	Kajiado
b2: Year started/Duration	Not sure	Over 2 years	Not sure maybe more than 3 years	Not sure
b3: Membership fees	Not sure	Doesn't know	Not sure	Doesn't know
b4: Functions	<ul style="list-style-type: none"> - Livestock marketing lobby - Provision of credit 	<ul style="list-style-type: none"> - Market livestock 	<ul style="list-style-type: none"> - Market information 	<ul style="list-style-type: none"> - Help livestock keepers find export markets
b5: Benefits	<ul style="list-style-type: none"> - Kept checks and balance on government - Provision of forum for livestock keepers to address livestock issues 	<ul style="list-style-type: none"> - Assisted in cattle off-take through market awareness 	None	Not specifically but assisted pastoralists in finding government attention
b6: Local offices and Officials	Doesn't know Heard of offices in Nairobi	Kajiado, specific office and officials not known	Doesn't know	Doesn't know
b7: Areas for KLMC intervention	<ul style="list-style-type: none"> - Assist in credit provision 	Improve livestock prices	<ul style="list-style-type: none"> - Credit provision - Disease control 	Improve marketing infrastructure e.g. boreholes, dips
b8: Comments	-	GOK to provide credit to pastoralists	KMC needs to be reopened	-
C: Knowledge on DLMC	Yes	NO	No	NO
c1: Location	Kajiado	N/A	-	-
c2: Year started	Doesn't know	N/A	-	-
c3: Membership/fees	-	-	-	-
c4: Functions	<ul style="list-style-type: none"> - Lobby for livestock marketing 	-	-	-
c5: Benefits	None	-	-	-
c6: Local	Not known	Not known	Not known	Not known

KENYA LIVESTOCK SECTOR STUDY

Office/officials				
c7: Comments	DLMC should visit during market days and explain its aims	DLMC should advertise itself and objectives to producers	Government should improve livestock marketing	-

Table 24: KLMC Ground Impact Assessment – Emali

	Assessment Area	Moses Mberere	Jeremiah Parmoat	Kennedy Kipes	Mobiaso Kasero	Moses Sekento
A	General knowledge on livestock marketing agencies, location, duration and status	KMC, KLMC	KMC, KLMC	KMC	KMC	KMC, KLMC
B	Knowledge of KLMC	Yes	Yes	No	No	Yes
b1	Location	Doesn't know	Nairobi	-	-	Nairobi and ASAL areas
b2	Year started	Doesn't know	Doesn't know	-	-	Around 2000
b3	Membership fee	-	-	-	-	Doesn't know
b4	Functions	Marketing of livestock; livestock producer training	Livestock marketing; sourcing for export markets	-	-	Advocate for livestock marketing; source for external markets
b5	Benefits	None	None-	-	-	Improved livestock marketing; increased livestock information
b6	Local offices and officials	Not known	Not known	-	-	Kajiado Officials not known
b7	Area of KLMC intervention	Promote dips, boreholes, drugs; Market livestock especially during droughts	Buy livestock during drought; training on business management; disease management	Helps in marketing livestock during droughts; assists in disease management	Producer compensation after drought; advocates for better prices of livestock	Direct buying of livestock from production; reduce input prices

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b8	Comments	-	-	Need for producer groups to market livestock; credit should be provided	KLMC needs to stamp out brokers	Need for KLMC to advertise itself to producers during market days
C	Knowledge of DLMC	None	None	None	None	Yes
c1	Location	-	-	-	-	Kajiado
c2	Year Started	-	-	-	-	Not sure
c3	Membership fee	-	-	-	-	Doesn't know
c4	Functions	-	-	-	-	As KLMC
c5	Benefits	-	-	-	-	District advocacy at national level
c6	Local offices and officials	-	-	-	-	Kajiado Officials not known
c7	Comments	Need to know more about DLMC	KMC needs to re-open	Export markets need to be increased	Producers should be given credit facilities	ASAL areas need special funds and ministry

Table 25: Table 3.16b: KLMC Ground Impact Assessment – Bissil

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It is noted that traders have heard of KLMC as a national organization. None of the traders was a member or knew the membership fees. All were aware of at least one of its function and 75% of traders were aware of its potential benefits. In terms of KLMC potential mentioned credit provision, improve livestock prices, disease control and improving marketing infrastructure. Knowledge on DLMC was minimal. Only one trader was aware of it. Traders noted that DLMC should advertise themselves more actively. The conclusions from this limited survey shows that KLMC/DLMC are poorly understood by traders and need to get more involved if they have to be recognized as umbrella bodies for advocacy on behalf of livestock stakeholders.

3.7 North – Western Route

The North Western route was not visited, but recent experiences in Southern Turkana (Muthee 2005) can be used to explain the volatility and dynamics of livestock trade in the area. The catchment area includes Uganda, Sudan, Ethiopia and Kenya. This area has considerable instability due to continuous rustling among the nomadic pastoralists who include the Karamojong in Uganda, the Toposa from Sudan and within Kenya, the Turkana, the Pokots, the Marakwets and Samburu. The effects of rustling can be illustrated in the case of Turkana South (Lokori Division) as shown in table 25.

Ownership	Camels	Shoats	Cattle
None	70	6.5	57.5
1-10	29	31.0	39.5
11-20	} 1.0	20.5	2.0
21-30		15.5	0.5
30+		27.5	0.5
Numbers Sold	Camels	Shoats	Cattle
0	98	49.5	90.5
1-5	2	41.5	7.5
6-10		5.5	} 2.0
11-15		} 3.5	
16+			
At least one animal stolen	2002	2004	2005
Camels	23	6	10.5
Shoats	37	57	57.5
Cattle	20	7	12.5

Table 26: Ownership, sales and rustling of livestock in South Turkana (%)

It was noted that only 30% owned camels while 93.5% owned shoats and 42.5% owned cattle. Sales figures indicated only 2% sold camels, 50.5% sold shoats and only 9.5% sold cattle. Cattle rustling is rife in the region with 10.5% of households having lost at least one camel, 57.5% of households having lost at least one shoat and 12.5% having lost at least one head of cattle.

3.7.2 Livestock Trade in the North Western Kenya

The number of animals for the Nairobi market has been on the decrease, possibly because of increased consumption in towns like Kitale, Eldoret and Nakuru and increased costs of transportation in excess of Kshs.35,000 per truck load. The numbers entering the Nairobi market in 2001 and 2005 were as shown in table 26.

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	2001	2005	% 2005 Total
West Pokot	4,246	2,263	40.0
Samburu	583	941	16.6
Baringo	447	386	7.0
Turkana	243	33	0.6
Marakwet	43	293	5.0
Laikipia	1,841	1,632	28.8
Koibatek	134	119	2.0
TOTAL	7,537	5,667	100

Table 27: Cattle entering the Nairobi market from North Western Kenya – 2001 and 2005

It was noted that the numbers declined from 7,537 head in 2001 to 5,667 in 2005. The only districts which showed some increases were Samburu and Marakwet. It was noted that West Pokot accounted for 40% of marketed animals while Laikipia with both ranches and smallholders accounted for 28% of total sales.

This area used to attract a considerable number of cattle from Sudan and Ethiopia. Cattle from Sudan originated from Narus and Nadapal and followed the Lokichoggio-Lodwar route while cattle from Ethiopia originated from Gamu-Gofa area and followed the Kalam (Ethiopia) – Todenyong – Lokitaung – Lodwar route. Although no value chain was undertaken during the study, data from an earlier study (Agrisystems 2003) was used to illustrate the cost components of this value chain as shown in figure 21.

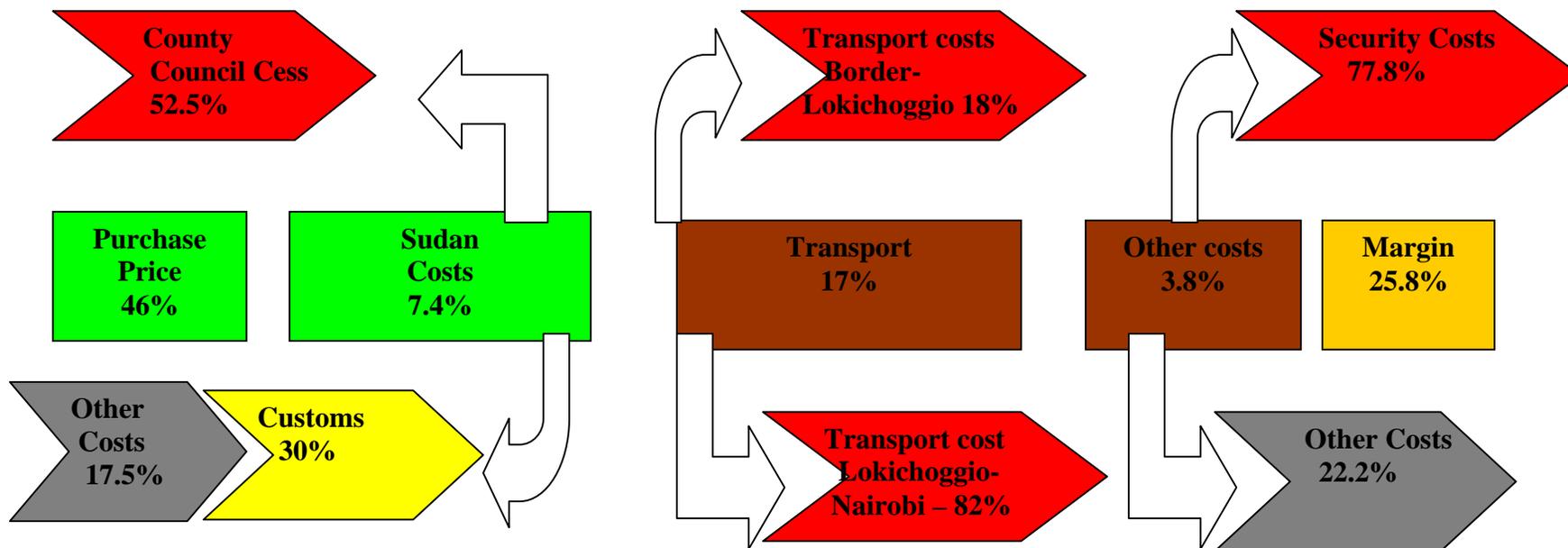


Figure 21: Value Chain for Trucking Cattle from Sudan/Kenya Border to Nairobi (2003)

Source: Agrisystems 2003

The figure shows that a trader purchased cattle at Kshs.8,300/head and transported to Nairobi and sold at Kshs.18,000/head realizing a margin of Kshs.4,642/head (a margin of 25.8% of sales price). The seller in Sudan realized 46% of sales price while Sudanese county council and government realized 6% in cess and duty but these accounted for 82.5% of non-purchase costs in the Sudan. Transport costs from the border – Nairobi accounted for 17% of sales price. In Kenya, security accounted for 78% of non-transport costs indicating the magnitude of the insecurity problem.

3.73 Constraints in Livestock Marketing in North West Kenya

The main problems were identified as follows:

- Livestock rustling among ethnic groups - both within Kenya and across the Insecurity in trucking or trekking animals in the region due to rustling resulting in high security costs
- Low prices as there is no market information systems or organized lobby groups
- Competition from big-bodied Toposa cattle which undermine local cattle
- Poor roads in the whole of the catchment area
- Frequent disease outbreaks (FMD, CBPP) affecting marketing due to quarantines.

3.8 Stock Traders Routes

3.81 Shoat Traders

Stock traders were interviewed at the slaughterhouses. These traders source livestock from all corners of the country. For shoats, the sources are usually in the southern rangelands and Ukambani. They purchase from primary markets and transport in pick-ups (10 animals/trip) or lorries (85-135). The routes investigated were:

- Bissil – Kitengela
- Bissil – Mlolongo
- Mwingi – Kiamaiko
- Suswa – Kiamaiko

The costs and margins for shoats' trade are shown in table 28 and figures 22 and 23.

Value Chains for Long-distance Shoat Traders in Southern Rangelands

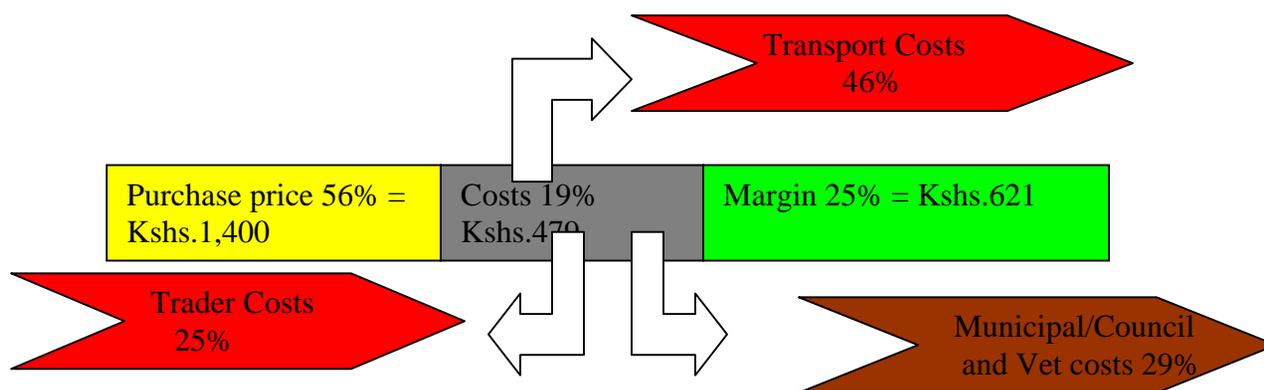


Figure 22: Value Chain of Mwingi-Kiamaiko-Shoat Trader

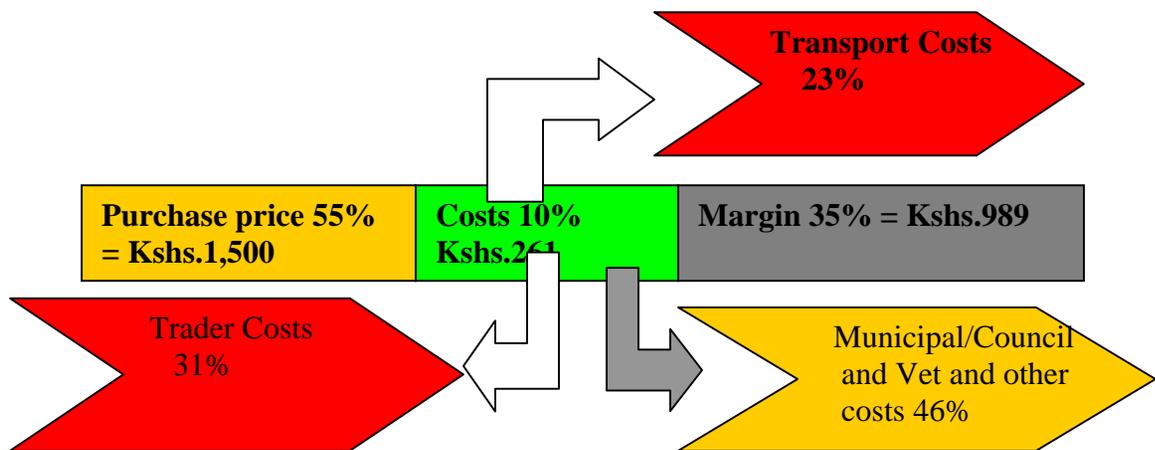


Figure 23: Value Chain of Suswa/Kiamaiko Shoats Trader

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Route	Bissil - Kitengela		Bissil - Mlolongo		Mwingi - Kiamaiko		Suswa - Kiamaiko	
Transport	1T Pick-up		1T Pick-up		8T Lorry		3T Canter	
Animals (No)								
- Sheep	8		10		135		80	
- Goats	10		10		135		85	
Purchase Price								
- Sheep	1200		1500		1400		1500	
- Goats		1200		1350		1400		1500
Charges								
- Permit	5	5	5	5	0.4	0.4	0.6	0.6
- Municipal	20	20	20	20	20	20		
- Council	25	25	25	25	25	25	25	25
- Loading					15	15		
- Branding								
- Tests								
- N.O permit	20	20	20	20	20	20	20	20
- Other			10	10			10	10
Trader costs	60	60	60	60	120	120	80	80
Transport/unit	156	125	100	100	219	219	62.5	58.8
Terminal								
Landing fee								
- Council	20	20			20	20	20	20
- Slaughter	10	10	100	100	25	25	20	20
- Inspection	25	25	25	25	25	25	25	25
Total Cost	1541	1510	1870	1715	1879	1879	1763	1759
Sale Price								
- Sheep	1875		2600		2500		2750	
- Goat		1875		2600		2500		2750
Margin	334	365	730	785	621	621	987	991
% Sales price	17.7	18.9	28	30.1	24.8	24.8	35.8	36

Table 28: Stock Traders (Shoats)

As shown in the table, prices varied according to the condition and size of shoats ranging from Kshs.1,000/head to Kshs.1,500/head. Market related costs from Bissil to the slaughterhouses averaged at Kshs.347/head of which transport accounted for 35% of marketing costs. Sales prices average at Kshs.2,213/head and margin ranged from Kshs.334/head to Kshs.785/head. Traders purchasing from Bissil realized margins (%) ranging from 18% - 30% of sales price. Those who purchased from Mwingi realized margins of Kshs.621/head or 24.8% margin of sales price while those who purchased from Suswa realized margins ranging from Kshs.987-991/head and about 36% margin of sales price.

3.8.2 Cattle Traders

As in the case of shoats, cattle traders source from any part of the country where they can realize a lorry-load (normally 20/lorry). They purchase from ranches

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(Taita-Taveta, Laikipia), large-scale farms (Eldoret), and primary markets (Rumuruti, Kuria, Migori). Six routes were studied as follows:

- Primary Market source
 - Rumuruti – Bahati (Limuru)
 - Kuria – Dagoretti
 - Migori - Dandora
- Ranches/Large farms:
 - Taita-Taveta – Dagoretti
 - Eldoret – Dagoretti
 - Laikipia – Dandora

Sourcing from primary markets has the characteristic that animals are not of equal size or well-finished implying that the margins are lower. In the three routes studies, the margins range from 4.6% - 7.8% of total costs. Although this may seem low, the trader realizes Kshs.20,000/truck load in a two day operation as shown in table 28 and figure 27.

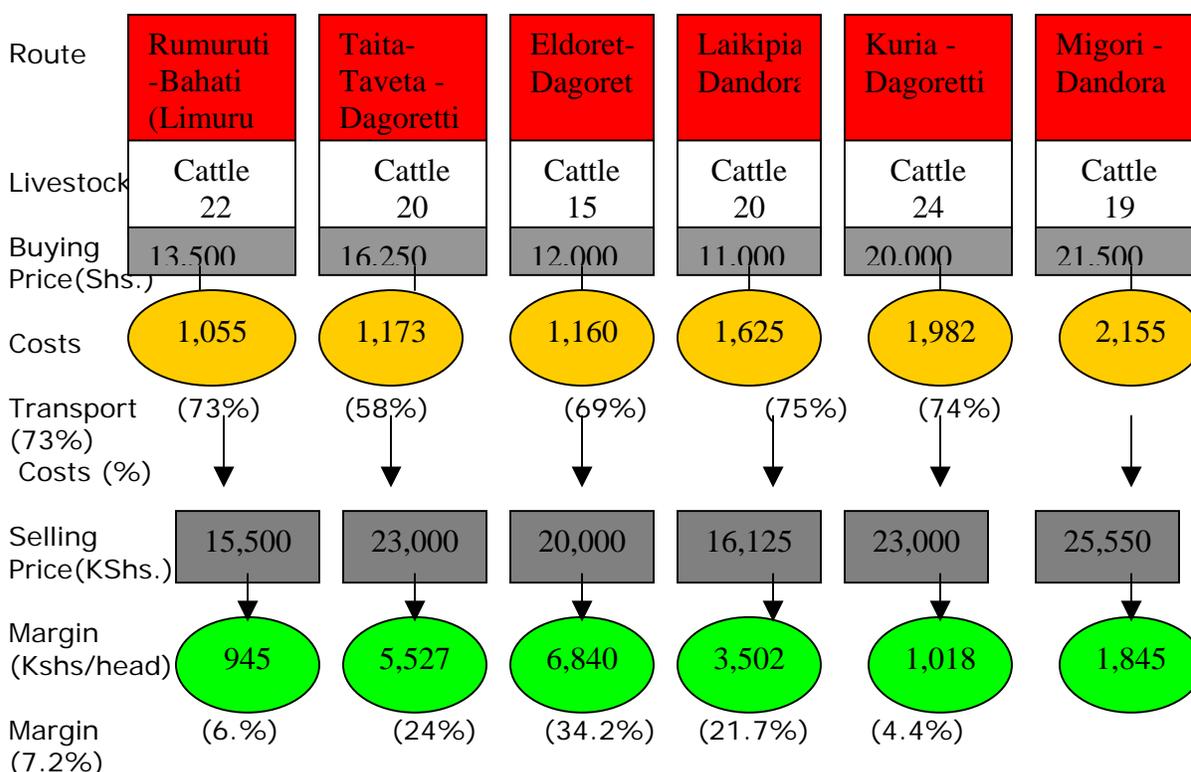


Figure 24: Value Chains for Long-distance Cattle Truckers

From the figures, some observations can be made. Firstly, transport costs were very high ranging from 58% to 75% of the total costs. Secondly, cattle bought from ranching areas like Taita-Taveta, Eldoret and Laikipia fetched a comparatively higher price than those from agro-pastoralist areas possibly because of uniformity in size and finishing. Due to this, the margins were high for these animals ranging from 22% to 24% while those from agro-pastoral areas ranged from 4.4% to 7.2%.

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Route	Rumuruti to Limuru	Taita Taveta to Dagoretti	Eldoret to Dagoretti	Laikipia Dandora	Kuria to Dagoretti	Migori to Dandora
Transport	7T	8T	8T	12T	7T	7T
Cattle No/Trip	22	20	15	20	24	19
Price	13,500	16,250	12,000	11,000	20,000	21,500
Charges						
-Permit	3	3	3	3	4	5
- Municipal cess	50	20	50	60	108	150
- County cess						
- Branding/load	10	15	15		62	62
- Tests	-	-	-	-	10	-
- Food	10	15	-	-	-	-
- N. O permit			20			20
- Loading/Ramp	15	15	20	50	30	30
Trader costs	135	140	100	125	150	150
Transport/head	773	675	800	1,225	1,458	1,578
Terminal costs						
- Landing		70	70	70	70	70
- Unloading	15		15	15	15	15
- Council	10	50	50	50	50	50
- Slaughter		150				
- Inspection	25	25	25	25	25	25
TOTAL COSTS	14,555	17,423	13,160	12,623	21,982	23,655
Sales Price	15,500	23,000	20,000	16,125	23,000	25,000
Margin Shs./head	945	5,577	6,840	3,502	1,018	1,845
% Sales price	6.0	24.2	34.2	21.7	4.4	7.2

Table 29: Cattle Stock Traders Routes

Sourcing from ranches and large farms is the comparatively more lucrative business. Animals are of similar size and well-finished. Margins for the three sources range from 32% to 57% over total costs. A trader realizes about Kshs.5,300/head or Kshs.106,000/head for a truckload. However, sourcing may be a problem as animals are not enough and there is considerable competition.

3.8.3 Major Problems in Trading Animals

Problems highlighted included:

- Supply of the animals is irregular
- High cost of transport – fuel
- Bad credit
- Perpetual harassment by police
- Few animals available for trade because of export of live animals

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- Transport problems due to impassable roads
- Fatigue and death of animals
- Financial problems due to lack of loans
- Theft by customers
- Poor quality animals due to drought
- Market instability
- Condemnation
- Weighing balances for animals
- Many local authority charges

4 MEAT MARKETING CHAINS

4.1 Background Issues

Marketing of red meat has been associated with the Kenya Meat Commission (KMC) set in 1950 with a major objective of prompting the meat industry in Kenya both domestic and export, and as a buyer of last resort in drought years. During the 1960's and 1970's, it was producing 20,000MT/p.a. of beef of which 50% was for export. It started experiencing problems in the mid-1970's when it started losing its monopoly in Nairobi with the development of private slaughterhouses (Dandora, Nynjoro, Ngong, Waithaka, Dagoretti, Ongataa Rongai/Kiserian, etc). In 1987, meat price was decontrolled and the inefficient KMC closed in 1987/88. Since then, the livestock trade and meat trade has been under the private sector.

4.1.1 Overall Situation

Data on slaughter figures are suspect due to the following factors. Firstly, the figures given by the meat inspection division of MOLFD are about 29% and 16% for cattle and shoats slaughtered respectively as compared to figures in the Economic Survey in 2004. They are even lower compared to figures of hides/skins being as low as 20% for cattle and 10% for shoats. These discrepancies maybe partly explained by the fact that the Veterinary Department Public Health section does not cover 7 districts in Rift Valley (Baringo, Turkana, Narok, West Pokot, Keiyo, Marakwet), all districts in N.E Province, Kuria and Suba in Nyanza, Marsabit, Tharaka and Isiolo in Eastern province. These districts are covered by the MOH personnel. However, even where MOLFD and MOH operate, the personnel are thinly spread and immobile to cover all slaughterhouses/slabs. Secondly, a considerable amount of home slaughter takes place especially in ASAL areas and this is not inspected. The figures for inspected slaughter by VSD for 2001 and 2004 are shown in table 29 and Annex Table 4-

Species	Yr 2001	Yr 2002	Yr 2003	Yr 2004	% increase/(Decrease)
Bovines	381,393	402,463	469,631	485,853	^3%
Sheep	172,594	198,928	249,337	299,764	^20%
Goats	178,173	195,479	291,193	332,208	^14%
Pigs	93,484	76,999	80,094	95,511	^19%
Camels	1,806	1,778	1,763	2,039	^13%
Chicken	391,620	2,331,277	2,563,384	2,451,929	(4%)
Turkeys				29,625	
Ducks				22,983	

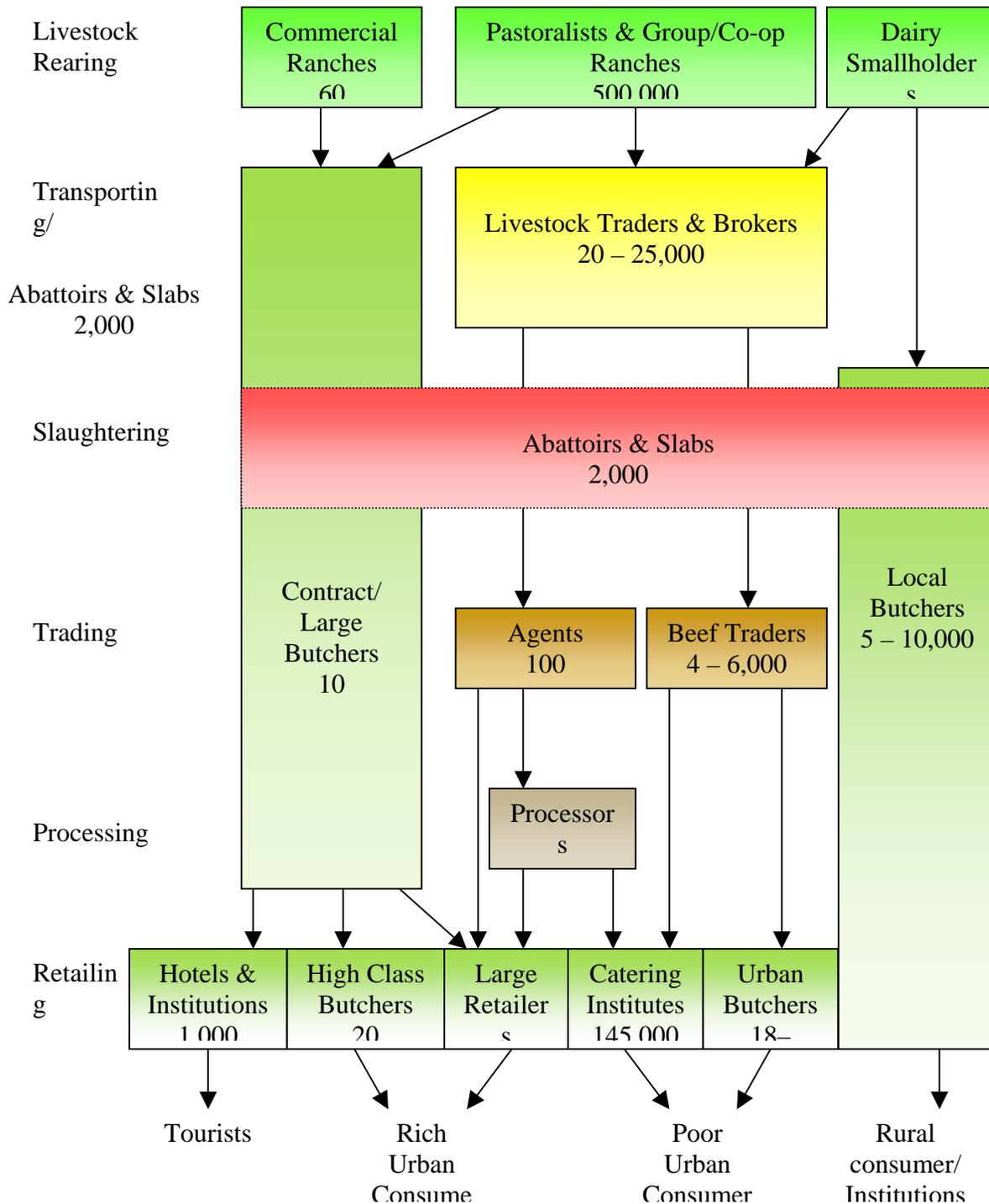
Table 30: Comparative Slaughter Figures

It is noted that bovine slaughter has been going up by 3% p.a. while that of shoats is between 14-20% and that of camels by 13%.

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4.1.2 Beef, Shoats and Camel meat Sub-Sector Maps

Sub-sector maps generally show the stakeholders and their interaction relationships. A beef sub-sector map has been analyzed (DFID 2001, Agrisystems 2003). This is used in this study as it is relatively stable in terms of structure but figures may vary year by year. The sub-sector map is given in Figure 25



Marketed Beef Sub-Sector Map
Source: DFID (2001) Agrisystems (2003)

As shown in the map, the sources of slaughter animals are commercial ranches mostly in Laikipia, Rift Valley, and Eastern and Coast provinces. The majority of slaughter cattle come from nomadic pastoralists and group ranches in southern rangeland and pastoralists in other areas. Dairy culls and calves for slaughter are found in high and medium potential areas. Livestock is either slaughtered at home/rural slaughter slabs or transported to primary/secondary/terminal markets for slaughter. Slaughterhouses include well equipped slaughterhouses like Bahati, Mombasa Export slaughterhouse. Newly opened KMC, the 16 slaughterhouses around Nairobi and ordinary slaughter slabs.

Beef from slaughterhouses is distributed by meat traders' agents, contract large butchers and butcher/butchery operators. Some minor processing is currently done but with well equipped slaughterhouses processing into canned and other meat products will increase.

The sales outlets are hotels/restaurants, high class butchers and large retailers mostly for high income urban consumers. For low income consumers, the source of beef is small hotels/catering institutions while for rural consumers, the local butcher is the main source.

The marketed shoats sub-sector map is similar to the beef sub-sector's as all stakeholders identified in the beef sub-sector map are also involved in shoats. The only exception is that, there is usually no major processing of shoaat meat as in the case of beef as shown in figure 26.

The camel sub-sector map is not as elaborate as those of beef and shoats. Camels are slaughtered in the ASAL districts for home consumption and in county councils for urban sales. For the terminal markets, camels are trekked to Nairobi where about 1,000 are slaughtered per year at Mlolongo for distribution through about 10 butcheries owned by ethnic communities from ASAL areas who consume camel meat. Mlolongo slaughters about 3-4 camels/day by the owner for general sales and 8-10 camels for contract butchers. For the Mombasa and coastal market, there is slaughtering in Lamu, Kwale, Malindi and Taita Taveta.

4.2 Red Meat Marketing Chains

4.2.1 Nairobi Marketing Chains

Nairobi is the major terminal market for red meat in Kenya. Livestock for slaughter in Nairobi comes from almost all districts in Kenya and are slaughtered in the nine butcheries in the Dandora complex within Nairobi and Dagoretti complex (Nairobi and Kiambu) as shown in table 4.2. Nairobi also receives meat from the Kiserian complex with two major butcheries and Mlolongo in Machakos district. Other butcheries in Emali, Narok, Kitui Bissil, Kajiado, Mai Mahiu and Kiambu also supply meat to Nairobi.

Dagoretti	Dandora (Njiru)
North Eastern Province - Garissa, Mandera, Marsabit, Isiolo, but none from Moyale	North Eastern Province - Moyale and Garissa
Nyanza Province – Migori, Kuria, Suba	Nyanza Province – Migori
Rift Valley Province - Kajiado, Narok, Turkana, Samburu, Kapenguria, Nandi, Kericho, Bomet,	Rift Valley Province – Laikipia

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Laikipia	
Eastern Province – Kitui, Mwingi, Machakos, Makuani	Eastern Province - Kitui, Mwingi
Central Province – minor supplies a lorry or two per annum	
Coast Province – Voi, a minor supplier	

Table 31: Sources of Cattle for Dagoretti and Dandora Slaughter Complexes

Although most of the cattle are listed as coming from within Kenya, a considerable number in the southern rangelands come from Tanzania while those in northern rangelands and North Eastern province come from Somalia, Ethiopia and Sudan.

4.2.1.1 Slaughterhouse Operations

Analysis was made of major slaughterhouses supplying Nairobi. These are located in the Dagoretti complex (Cooperative, Thiani, Mumu, Nyongora, Nyonjorro, Dandora complex/Kiamaiko (Kayole, Dandora, Hurlingham, Kiamaiko), Kiserian complex (Kiserian, Kitengela, Keekoyokie), Mlolongo in Machakos district and Bahati in Limuru. Data available for 2005 shows that the 14 butchereries slaughtered 132,702 heads of cattle, 114,924 shoats and 1,004 heads of camels. Although some of the meat is for towns outside the boundary of Nairobi, the largest population is destined for Nairobi.

Slaughterhouses in Neighbouring Districts

These include Kitengela, Kiserian and Keekonyokie in Kajiado, and Mlolongo in Machakos district. Their combined slaughter was 14,655 heads of cattle, 19,991 shoats and 1,004 camels. The trend in the number of slaughtered animals between 2000 and 2005 was as shown in table 31

	2000	2001	2002	2003	2004	2005
1. Kitengela						
Cattle	852	546	544	758	2,681	1,748
Sheep	543	587	708	690	1,783	1,847
Goats	720	733	797	639	1,629	2,169
Camels	-	-	-	-	-	-
2. Mlolongo						
Cattle	60	84	112	124	492	425
Sheep	502	494	503	702	800	1,018
Goats	521	540	900	952	896	952
Camels	1,217	1,477	1,173	868	957	1,004
3. Kiserian						
Cattle	3,700	3,538	3,436	3,949	4,850	4,011
Sheep	3,199	2,744	3,533	5,184	7,816	6,268
Goats	3,622	2,418	2,066	3,319	5,529	5,051
Camels	-	-	-	-	-	--
4. Kekonyokie						
Cattle		5,267	5,232	6,971	8,769	8,471

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Sheep		993	917	1,213	1,571	2,686
Goats						
Camels		-	-	-	-	-

Table 32: Major slaughterhouses in Kajiado and Machakos serving Nairobi

It was noted that Mlolongo was the only camel slaughterhouse with an average annual slaughter of 1,116 heads. All the four slaughterhouses showed an increased slaughter in 2004 due to the drought which started in 2004 to 2005.

Slaughterhouses in Eastern Nairobi

These include Kayole, Dandora, Hurlingham and Kiamaiko. The combined 2005 slaughter was 43,962 heads of cattle with Dandora slaughterhouse accounting for 66% of cattle slaughtered. Shoats slaughter was 92,142 heads with Kiamaiko which specialize in shoat slaughter accounting for 94% of shoat slaughter as shown in table 33

1. Dandora Complex	2000	2001	2002	2003	2004	2005
1. Kayole						
Cattle						4,984
Sheep						-
Goats						87
Camels						-
2. Dandora						
Cattle	25,765	24,476	25,399	34,891	32,406	28,920
Sheep						
Goats						
Camels						
3. Hurlingham						
Cattle	2,079	2,758	3,197	3,241	6,327	10,058
Sheep	200	170	223	464	1,996	5,453
Goats						292
Camels	-	-	-	-	-	--
4. Kiamaiko						
Cattle						-
Sheep						33,269
Goats						53,041
Camels						-

Table 33: Eastern Nairobi slaughterhouses

Slaughterhouses in Dagoretti and Bahati

These include Cooperative, Thiani, Mumu, Nyongora and Nyonjoro in the Dagoretti complex and Bahati at Limuru. The 2005 slaughter of cattle was 74,085 heads with Thiani accounting for 50% of slaughter, while only 2,791 shoats were slaughtered. The slaughter figures are shown in table 34.

Dagorretti Complex	2000	2001	2002	2003	2004	2005
1. Cooperative						
Cattle	11,305	15,801	11,928	14,234	11,575	11,018

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Sheep	966	1,195	405	320	332	236
Goats	431	160	102	50	146	121
Camels	-	-	-	-	-	-
2. Thiani						
Cattle	15,855	10,831	16,232	18,322	15,603	37,236
Sheep	766	-	-	-	-	-
Goats	431	-	-	-	-	-
Camels	-	-	-	-	-	-
3. Mumu						
Cattle	11,108	10,151	6,821	9,232	15,603	10,446
Sheep	-	-	-	-	-	-
Goats	-	-	-	-	-	-
Camels	-	-	-	-	-	-
4. Nyongara						
Cattle	11,305	15,434	10,610	13,394	12,627	12,766
Sheep	996	1,774	1,091	1,590	1,173	1,041
Goats	431	1,037	617	977	1,214	578
Camels	-	-	-	-	-	-
5. Nyonjoro						
Cattle						581
Sheep						473
Goats						87
Camels						-
6. Bahati						
Cattle	2,470	3,008	3,218	2,134	1,741	2,038
Sheep	687	696	277	172	246	255
Goats	219	214				
Camels		-	-	-	-	-

Table 34: Slaughterhouses in Dagoretti and Bahati (Limuru)

Overall, it is noted that slaughterhouses in Eastern Nairobi and surrounding districts are dominant in supplying shoat meat accounting for 98% of shoat meat, 44% of beef and 100% of camel meat while those in Western Nairobi supply 56% of beef and only 2% of shoat meat.

4.2.1.2 Operators in the Slaughterhouses

There are three categories of operators in the terminal markets and slaughterhouses as follows:

- Terminal Market Operators
 - County council
 - Stock traders
 - Brokers
- Regulatory Operators
 - Veterinary officers
 - Meat inspectors

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- Meat graders
- Hides and skins officers
- Meat Operators
 - Butchers operating own slaughterhouses
 - Butchers who slaughter on order
 - Butchers who slaughter and wait for buyers
 - Stock traders who slaughter their animals and distribute meat in own butchereries elsewhere and to other butchereries
 - Middlemen buyers who buy meat and distribute

Terminal market operators are mainly the city/municipal council who charge a landing fee, cess and slaughter fees. These vary from place to place as shown in table 35

	Cattle			Shoats			Camels		
	LF	Cess	SC	LF	Cess	SC	LF	Cess	SC
Kiserian	-	40	130		15	20	-	-	-
Kitengela	-	20	15		15	20			
Dagoretti Complex	50-70	50	320						
Nyonjoro	415 (All)			65 (All)					
Eastern Nairobi	250 (All)			75 (All)					
Mlolongo	200 (All)			75 (All)				70	200

Table 35: Terminal market costs

LF = Landing Fee; SC = Slaughter Costs

It is noted that cess, landing fee and slaughter costs for cattle range from Kshs.170-415/head, for shoats from Kshs.35-75/head and for camels at Kshs.270/head.

Regulatory fees imposed by the veterinary department include meat inspection fees, movement of meat to butchery and meat carrier licence as shown in table 36.

Meat Inspection/Livestock	Kshs.
Cattle	100
Shoats	25
Pigs	25
Camels	100
Poultry	2
Meat Movement Permit	
Movement per consignment	20

Carrier licence (shs./year)	100
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Table 36: Veterinary Department Costs at Slaughterhouse

These charges are countrywide and don't vary from district to district. They have not been increased in the last five years.

4.2.1.3 Marketing Chains Originating at Slaughterhouses

Three marketing chains were analyzed at the slaughterhouse:

- (i) Slaughterhouse operators' margin,
- (ii) Middlemen meat sellers and
- (iii) Stock trader/butchery operator and meat distributor.

Slaughterhouse operators value chain

Slaughterhouses slaughter both the owners animals and for other traders/butchers. In analyzing the margins, the annual costs were divided by the total number slaughtered. The purchase price for cattle was calculated at Kshs.20,000/300kg live weight giving a CDW of 150kg. Revenue was calculated at Kshs.150/kg CDW and the fourth quarter as per average prices in several slaughterhouses. The value chain is as given in the figure and table below.

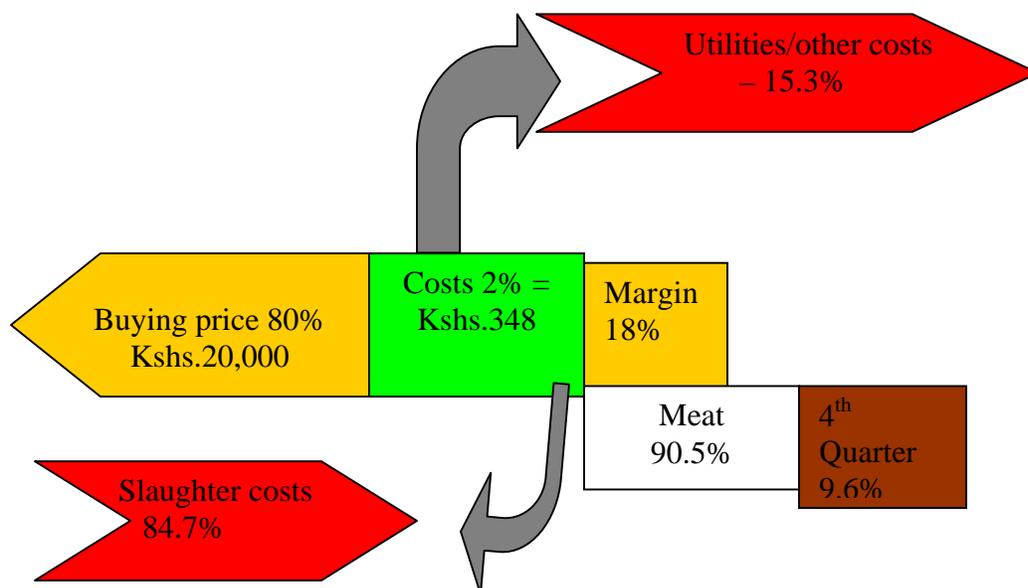


Figure 25: Butchers Operating Costs

COSTS	KSHS/HEAD
Buying price (300 kg live weight)	20,000
Annual Licence	7
Vet licence	0.2
Electricity	8.8
Labour	9
Other slaughter costs	320
Water	2.8

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Total Costs	20,348
REVENUE	
Meat – 150kg @ 150	22,500
Liver	140
Offals + feet	1,300
Head	300
Hide	610
	24,850
Gross Margin	4,502
Gross margin % of sales	18%

Table 37: Average Butchers Operating Margin for Cattle

It is noted that selling meat alone would give a margin of 10.6% but selling the fourth quarter improves the margin to 18%,

Middlemen meat selling chain

The middlemen collect orders from various small butcheries for various weights. They then go to the slaughterhouses and buy from slaughterhouse operators. In some cases, they buy live animals and organize for slaughter and then transport to butcheries. The analysis is based on buying meat and offals as shown in the figure and table below.

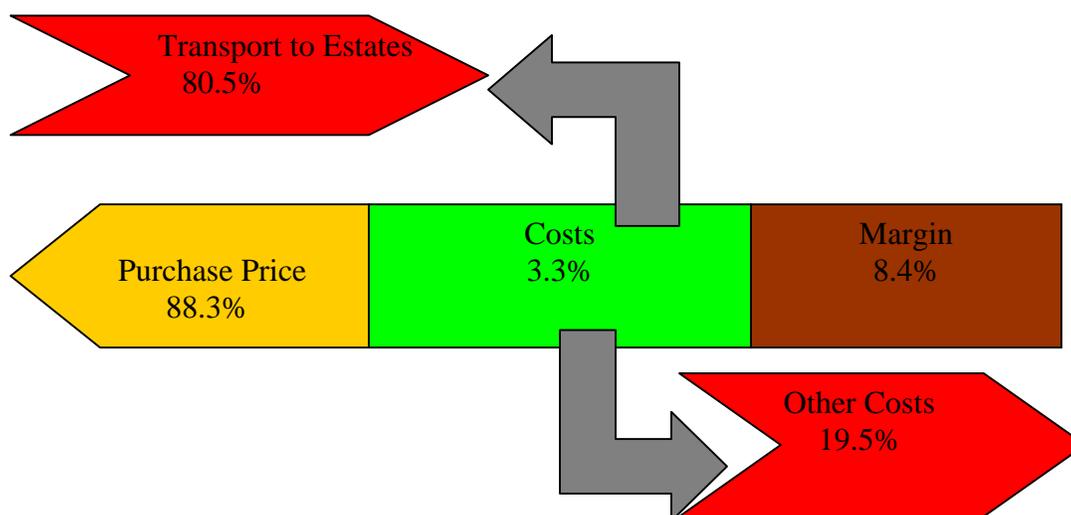


Figure 26: Middlemen Meat Selling Chain

In the case of costs, transport costs to estates was the major cost component but the trader realized a gross margin of 8% of sales price.

<u>COSTS</u>	<u>PRICE/ANIMAL</u>
Purchase Price @ Kshs.131/125 kg	16,375
Operators Licence	1
Movement Permit	20
Transport to Estates	500
Other Costs	100

KENYA LIVESTOCK SECTOR STUDY

Total costs	16,996
REVENUE	
Meat 125 kg @ Kshs.146/kg	18,250
Margin from meat	1,254
Liver (Margin)	10
Head (Margin)	68
Heart	20
Offal	200
Total Revenue	18,548
Gross margin (Kshs./Carcass)	1,552
Gross Margin % of sales	8.4%

Table 38: Middlemen Meat Sellers (cattle) Margin

It is noted that the trader makes a margin of Kshs.1,552/animal and considering that they sell an animal/day for six days per week, the monthly net earning is Kshs.37,248. In selling meat alone, the earnings are Kshs.30,096/month.

Stock Trader/Butcher and Meat Distributor

This analysis covers a trader who buys animals at the Tanzania border, transports to Dagoreti for slaughter and sells about a quarter of the meat in his butchery and three quarters is distributed to butcheries or to a wholesale market at Burmah market. The value chain is shown in figure 27 and table 39.

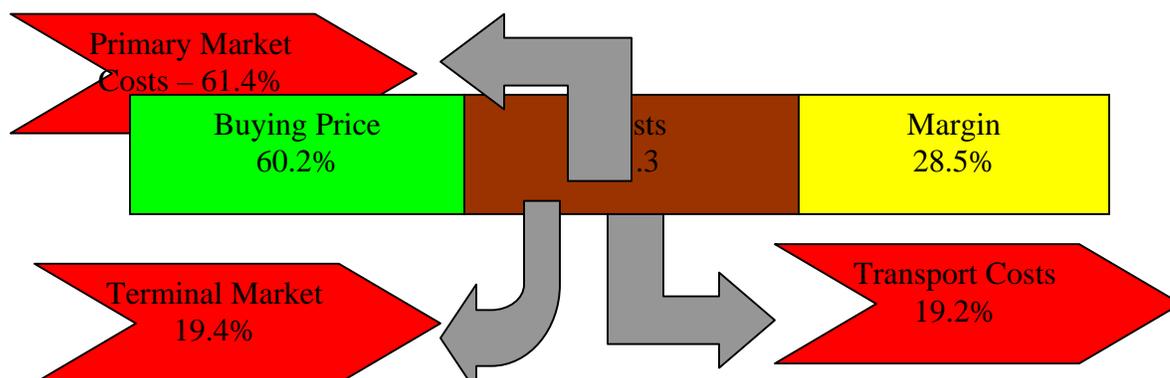


Figure 27: Value Chain for Stock Trader/Butchery Operator/Wholesale Meat Distributor

This type of integrated trader enjoyed the benefits of livestock trading and meat marketing realizing a gross margin of 31% of sales price.

COSTS	KSHS.
A: Costs at Primary Source	
Price at Source	14,000
Transport Kshs.35,000/25	1,400
Municipal cess	100
Loading	4
Branding	4
Disease tests	4
Security	100
Operators licence (Kshs.600/yr)	0.5

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Sub-Total	15,612.50
B: Terminal Market Costs	
Cess	40
Slaughter costs	320
Inspection fee	100
Slaughter fee	50
Sub-Total	510
C: Transport to Butcheries	
Movement Permit/fees	1.5
Carrier Permit	0.5
Transport costs	500
Sub-Total	502
TOTAL COSTS	16,625
D: Revenue/25 kg	
Meat sale own butchery (1/4 at Kshs.220/kg)	6,875
Sale to others (Kshs.180/kg)	14,063
Margin in selling meat only	4,809 (20%)
Head	200
Liver	180
Offals	1,300
Hide	610
	23,228
Margin (Kshs./Animal)	6,660
Margin % of Sales	28.5%

Table 39: Stock Trader/Butcher/Meat Distributor Costs

It is noted that the overall margin is high at Kshs.6,660/head or 28.5% of total costs. This could be improved by selling more meat at own butchery outlet. If only meat is sold, the margin is Kshs.4,313/head or 18.5% of costs. Selling the fourth quarter adds 10% to the margin.

4.2.1.4 Environmental Issues and Disposal of Wastes from Slaughterhouses

Slaughterhouses release two types of wastes mostly solid wastes (contents of stomach and sometimes bones and horns if not sold) and liquid wastes mostly blood and washing water (for carcasses and slaughterhouse washing which may include detergents). These organic waste if discharged into receiving water bodies untreated cause de-oxygenation and eutrophication. Under the National Environment Management Coordination Act (EMCA 1999) and Kenya Gazette supplement No. 56 (2003) on Environmental Impact Assessment (EIA) and Audit, abattoirs and meat processing plants require an environmental impact assessment and an annual audit as specified in schedule two of EMCA 1999.

Analysis of the 14 slaughterhouses showed that ingesta was sun-dried and sold as manure or incinerated with 71% sun-drying and 29% incinerating. Liquid waste was either sent to a soak pit and later discharged to a river, (64% of total), septic tank and then to sewer (7%), direct to river (7%), direct to sewer (7%) and own treatment (7%). Although slaughterhouses argued that there were no costs, there are costs associated with building an incinerator, payment to county council for emptying into main sewer and exhausting septic tanks. In the case of Mlolongo, the payment to Mavoko County Council sewer was Kshs.20,000 annually and Kshs.3,000

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weekly for exhausting the septic tank. Observations on environmental awareness among slaughterhouses were as shown in table 40:

KENYA LIVESTOCK SECTOR STUDY

Slaughterhouse	MUMU	THIANI	COOPERATIVE	NYONGARA	KISERIAN	KAYOLE	NYONJORO
Waste Disposal	Solid is sun-dried and sold as manure Liquid drains to soak pit then to the river	Solid is sun-dried; liquid drains to soak pit then to the river	Solid is sun-dried; liquid drains to soak pit then to the river	Solid waste is sun-dried; liquid is discharged to the river	Dried in the sun and sold as manure	Dried in the sun and sold as manure	Dried in the sun and sold as manure
Cost of waste disposal	No Costs	No Costs	No Costs	No Costs	No Costs	No Costs	No Costs
Involvement with NEMA	Yes; Consultation with NEMA and KANAKASHA assists with self regulation	Yes; Consultation with NEMA and KANAKASHA	Yes; Through NEMA and KANAKASHA	Yes; Works in conjunction with KANAKASHA for hygienic meat production, clean environment and fair trade	Yes; They have recommended construction of an incinerator	Yes; Have given them a certificate	Yes; They have recommended construction of incinerators

KENYA LIVESTOCK SECTOR STUDY

Waste Disposal	Septic tank and area to dry ingesta	Leave waste to sun-dry and give out the dried matter free of charge	Ingesta is sun-dried; Liquid flows to sediment soak pit	Liquid wastes are connected to the main sewer	Have an incinerator	Solid – incinerator; Liquid – efficient waste management usually treated	Septic tank later siphoned to Mavoko county council's main sewer
Cost of waste disposal	No Costs	No Costs	No Costs	No Costs	No Costs	- Costs of putting up the incinerator; Have biogas for treating the liquids	Kshs.20,000 paid annually to Mavoko county council for use of main sewer; Kshs.3,000 weekly for exhauster siphoning from septic tank and disposing to main sewer
Involvement with NEMA	Yes	Yes	Yes; Advised on development of incinerator and connection to main sewer or developing a treatment plan	Yes	Yes; They have been collecting samples	Yes; Have given them a certificate of compliance. They submit water samples for analysis	Yes; they conducted evaluation and gave certificate of approval on environmental safety in Year 2005

Table 40: Environmental Awareness among Slaughterhouses

All slaughterhouses were aware of EMCA 1999 requirements and were also aware of NEMA. In the Dagoretti complex, there was an association – KANAKASHA – to assist in self regulation on hygienic meat production, clean environment and fair trade. NEMA has recommended construction of incinerators (Kiserian, Kiamaiko) and has given a certificate of compliance to Bahati (Limuru) and Mlolongo.

4.3 Nairobi Meat Price Survey and Value Chains

4.3. Household Income and Classes of Butcheries

The demand of meat depends on household income and Nairobi, with a comparatively higher income per capita, is estimated to consume 43% of all beef consumed and about 33% of shoat meat in the country. The percentage of the national population below the poverty line is 52.6% while for Nairobi, it is 43.9%. However, it varies by divisions within the city with Westlands at 31.3%, Langata 40.1%, Embakasi 40.7%, Starehe 44.1%, Dagoretti 45.7%, Kamukunji 45.8%, Kasarani 47.3% and Makadara (59.1%)(Econ Survey 2005). These figures hide the large percentages of the poor in slums where meat consumption is minimal. The income levels also influence the category of butcherries to be found in estates with high income butcherries in these areas.

It was estimated that there were 3,864 butcherries in 2001 (Aklilu 2002) of which 483 were licenced; of which 226 butcherries were licenced to sell meat only, 257 were licenced as 'butcherries and supplementary' and 3,381 were unlicenced. New estates have come up since then and the number may be in excess of 5,000 butcherries.

Butcherries are loosely classified as: (i) high class butcherries, (ii) middle class butcherries, (iii) low class butcherries and (iv) extra-low class butcherries. High class butcherries are found in North West and West of Nairobi in such areas as Muthaiga, Westlands, Langata, Hurlingham and Lavington among others. They specialize in selling meat in special cuts and obtain their meat mostly from ranch finished animals or are supplied by agents. Middle class butcherries serve estates as Nairobi West, Nairobi South, some estates in Eastern and northern Nairobi. These are supplied from the Dagoretti complex, Dandora complex or Kiserian. Meat is sold mainly as meat with bones and boneless meat. Low class butcherries are mostly found in low income estates like Githurai, Makadara, Kariobangi among others. They sell standard grade meat mostly as meat with bones. The last category is the extra-low class butcherries found in low income slums of Kibera, Mathare, Majengo and Korogocho. They sell the lowest grades of meat and there is always a likelihood of uninspected meat entering this market.

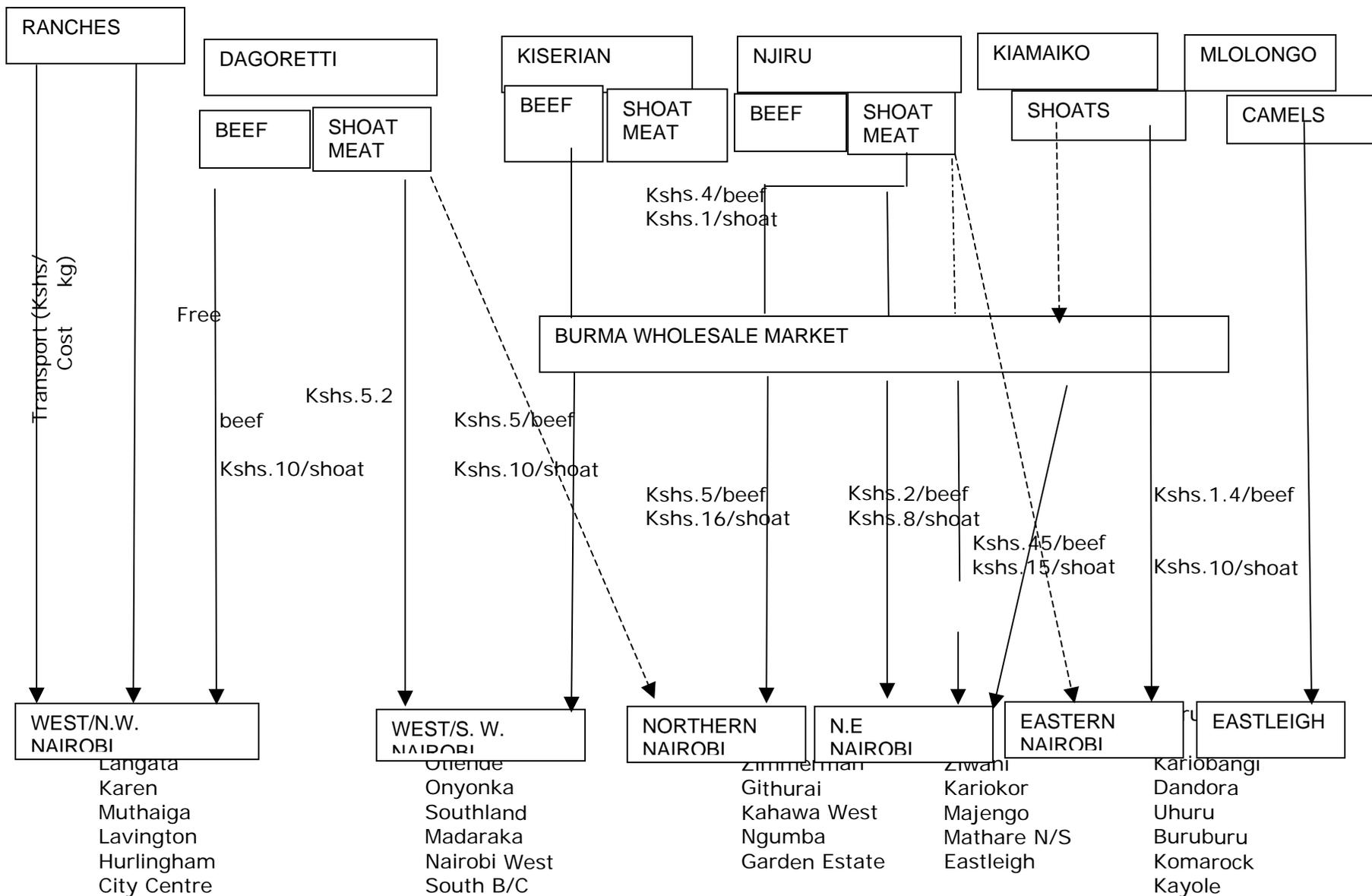
4.3.2 Nairobi Red Meat Marketing Chain

The study covered 72 butcherries and 10 butcherries in neighbouring Kajiado district. The high class butcherries were in the West/North West Nairobi (Westlands, Langata, Karen, Muthaiga, Lavington and Hurlingham). The middle class butcherries were in West/South West Nairobi (Otiende, Onyonka, Madaraka, Nairobi West) and Northern Nairobi (Githurai, Zimmerman, Kahawa West, Ngumba) and Eastern Nairobi (Huruma, Kariobangi, Dandora, Uhuru, Buruburu, Komarock and Kayole). In these areas, there were low income and extra-low income butcherries. The low income and

extra-low income butcheries were in North East Nairobi (Mathare, Majengo, Ziwani, Kariokor).

There was noticeable specialization in meat supply to the city. Dagoretti supplied estates in West/North West Nairobi, West/South West Nairobi and Northern Nairobi with both beef and shoat meat. In Eastern Nairobi, it faces competition from Njiru slaughterhouses. The Njiru slaughterhouses supply estates in Eastern Northern Nairobi and North Eastern Nairobi with both beef and shoat meat. Kiamaiko specializes in shoat meat and supplies estates in eastern and North Eastern Nairobi. Kiserian slaughterhouses compete with Dagoretti in supplying to West and South West Nairobi. Camel meat is only available from Mlolongo and is supplied to Eastleigh. Apart from slaughterhouses, Burma market acts as a wholesale market for meat mostly supplied by middlemen meat sellers. This outlet wholesales meat for Central, North Eastern and Northern Nairobi. The red meat marketing chain is shown in figure 28.

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The supply pattern appears to be controlled by transport costs. Slaughterhouses in Dagoretti and Kiserian have a cost comparative advantage in supplying Western, Southwest and Northwest Nairobi while Njiru and Kiamaiko slaughterhouses have a transport cost comparative advantage in supplying Eastern Nairobi. There is competition in Eastern and North eastern Nairobi as both groups compete in the area. The meat transport costs to various estates are shown in Annex Table 4.11:

4.3.3 Meat Prices and Gross Margins

4.3.3.1 Buying Prices

Buying prices of meat vary due to grade of beef and locality. In 2005, the prices of beef ranged from Kshs.101/kg in N.E Nairobi to Kshs.137/kg in Eastern Nairobi averaging at Kshs.123/kg. In 2006, prices have increased by 11% to 19% and ranged from Kshs.117/kg in N.E. Nairobi to Kshs.160/kg in W/SW Nairobi averaging at Kshs.144/kg. Shoaat meat prices have increased by 6% to 23% and ranged from Kshs.107/kg in N.E Nairobi to Kshs.137/kg in W/N.W Nairobi averaging at Kshs.125/kg in 2005. Currently, the prices range from Kshs.117/kg in N.E Nairobi to Kshs.160/kg in W/SW Nairobi and average at Kshs.144/kg. The average buying prices are shown in table 41.

Area	W/NW Central Nairobi			W/SW Nairobi			Northern Nairobi			N. E Nairobi			Eastern Nairobi		
	LY	TY	%	LY	TY	%	LY	TY	%	LY	TY	%	LY	TY	%
Cattle	131	145	11	124	145	14.5	122	141	13	101	124	19	137	159	14
Shoats	137	144	5	124	160	23	136	155	12	107	117	6	120	145	17
Chicken	166	166	0	157	170	8	193	206	6.3	205	225	9	124	156	21
Fish	180	212	18	-	-	-	149	170	12	-	-	-	-	-	-
Pork	-	-	-	-	-	-	100	110	9	-	-	-	-	-	-

Table 41: Average Meat Buying Prices

LY = Last Year

TY = This Year

4.3.3.2 Selling Prices

Selling prices for boneless meat have increased by an average of 13% from 2005 and currently. In 2005, the average price was Kshs.235/kg while currently it is Kshs.270/kg. In the case of meat with bones, the corresponding price increase was an average of 12% while prices averaged at Kshs.164/kg in 2005 to Kshs.186/kg currently. Prices of special cuts in high and medium class butcheries have increased by between 3% and 18% during the period.

Goat meat prices have on average increased by 12% from an average price of Kshs.193 in 2005 to Kshs.218/kg currently. Sheep/lamb meat has increased by 10% from an average price of Kshs.188/kg in 2005 to Kshs.208/kg in 2006. The

prices for various categories of beef, goat, sheep and white meat are shown in table 42.

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	W/NW Central Nairobi			W/SW Nairobi			Northern Nairobi			N. E Nairobi			Eastern Nairobi			Mombasa		
	LY	TY	%	LY	TY	%	LY	TY	%	LY	TY	%	LY	TY	%	LY	TY	%
Beef																		
- Boneless	250	270	8	210	249	16	221	255	13	207	232	11	285	344	17	234	236	1
- With Bones	180	195	9	160	193	17	172	199	14	152	174	13	158	171	7.6	166	176	6
- Sirloin	254	271	7	195	215	9	180	207	13	180	180	0	185	220	16	244	250	2
- T- Bone	263	274	4	200	222	10	172	199	14	200	220	9	168	196	14	196	200	2
- Fillet	304	343	13	236	265	11	220	251	12	190	210	10	164	199	18	224	232	3
- Rump steak	290	317	9				212	232	9	-	-	-	-	-	-			
- Topside	229	255	11				240	260	8	-	-	-	-	-	-			
- Chaps	175	180	3				173	198	13	-	-	-	-	-	-			
- Shoulder steak	222	263	15				-	-	-	-	-	-						
- Loin	250	250	0				-	-	-									
- Top rump	-	-	-				177	203	13									
- Silverside	228	299	31				173	200	14									
Goat	213	239	12	181	213	15	193	217	11	213	233	9	163	186	12	160	172	7
Sheep/Lamb	242	244	1	183	213	15	189	209	10	200	220	9	128	155	17	160	172	7
Poultry – Local	224	280	25	-	-	-	255	290	12	275	300	8						

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- Broilers	22 5	247	10	20 0	200	0	209	242	14	275	300	8	128	161	20	200	200	0
Fish	25 7	289	12				188	214	12	275	300	8				100	100	0
Pork							128	150	15									
Pork/Fillet	64 5	710	10															

Table 42: Meat prices for various categories of beef, goat, sheep and white meat

LY = Last year

TY = This Year

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4.3.3.3 Gross Margins in Meat Marketing

The gross margins have been calculated for six categories of marketing outlets: (i) boneless and meat with bones for all regions, (ii) shoat meat for all regions, (iii) beef special cuts for high class butcheries, (iv) medium class butchery, (v) low income butchery and (vi) extra-low income butchery. The **margins for selling boneless and meat with bones** which is common in all regions of Nairobi are shown in table 43:

Region	BONELESS BEEF				BEEF WITH BONES			
	Prices (Shs./kg)			Margin	Prices (shs./kg)			Margin
	Buying	Selling	Margin	%	Buying	Selling	Margin	%
W/NW Nairobi	145	270	125	86	145	195	50	34
W/SW Nairobi	145	249	104	72	145	193	48	33
Northern Nairobi	141	255	114	81	141	199	58	41
N.E Nairobi	124	232	108	67	124	174	50	40
Eastern Nairobi	159	344	185	116	159	171	12	7.5
Average	143	270	127	89	143	186	43	30

Table 43: Gross Margins in Retailing Boneless and Meat with Bones in Nairobi

It is noted that the average margin in selling boneless beef was Kshs.127/kg with a range from Kshs.104/kg to Kshs.185/kg. However, it has to be noted that boneless beef accounts only for a small percentage of sales. Beef with bones was the major sales item and the average margin was Kshs.43/kg or 30% margin of buying prices.

Shoats are sold in the same butcheries as beef. The average buying price for goat meat was Kshs.144/kg with a high price of Kshs.160/kg. Selling prices ranged from Kshs.186/kg to Kshs.239/kg giving an average margin of Kshs.74/kg or 51% margin. Sheep/lamb meat buying prices averaged at Kshs.144/kg similar to goat meat but selling prices were lower averaging at Kshs.208/kg and a margin of Kshs.64/kg or 45% margin. Margins were higher in some areas especially in W/NW Nairobi specializing in exotic sheep. The prices and margins are shown in table 44.

Region	GOAT MEAT				SHEEP/LAMB MEAT			
	Prices (Shs./kg)			Margin	Prices (shs./kg)			Margin
	Buying	Selling	Margin	%	Buying	Selling	Margin	%
W/NW Nairobi	144	239	95	66	144	244	100	69
W/SW Nairobi	160	213	53	33	160	213	53	33
Northern Nairobi	155	217	62	40	155	209	54	35
N.E Nairobi	117	233	116	99	117	220	103	88
Eastern Nairobi	145	186	41	28	145	155	10	7
Average	144	218	74	51	144	208	64	45

Table 44: Gross Margins in Retailing Shoat Meat in Nairobi

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High class butcheries specialize in selling special beef cuts. These include sirloin, fillet, rump steak, T-bone among other cuts. They source their meat from ranches which slaughter and deliver. They also source through distributors who specialize in high grade meat. The margins for various cuts were as shown in table 44.

	Prices and Margins (shs./kg)			Margin
	Buying	Selling	Margin	%
Boneless	-	320	160	100
With Bones	-	195	35	22
Sirloin	-	405	245	153
Fillet	-	630	470	294
Rump Steak	-	388	228	143
T-Bone	-	471	311	194
	160	400	240	150
Goat meat	180	297	117	65
Sheep/Lamb	180	391	211	117

Table 45: Gross Margins in Retailing Special Beef Cuts and Shoat Meat (Average of 3 high class butcheries in W/NW Nairobi)

It was noted that the buying prices were higher at Kshs.160/kg. Prices of meat were generally higher as these butcheries are in higher income areas serving the expatriate community and high income Kenyans. Considering the prices of various cuts, the average selling price was Kshs.400/kg giving a high margin of Kshs.240/kg or a 150% margin. Margins for special cuts were high ranging from 143% to 194% over the buying price. In selling shoat meat, they also realized high margins of Kshs.117/kg and Kshs.211/kg for goat and sheep meat respectively.

Most of Nairobi butcheries are in the **middle to lower class categories**. Middle class butcheries mostly deal with boneless and meat with bones as well as shoat meat. The typical prices and margins for this category of butcheries are shown in table 45.

	Prices and Margins (Kshs/kg)			Margin
	Buying	Selling	Margin	%
Boneless beef	137	253	116	85
Beef with bones	137	200	63	46
Goat	140	240	100	71
Sheep/lamb	140	220	80	57
Average Beef	137	227	90	66
Average Shoat	140	230	90	64

Table 46: Gross Margins in Middle Class Butcheries (W/SW Nairobi)

The average buying price for beef was Kshs.137/kg and average selling price was Kshs.227/kg giving a margin of Kshs.90/kg or 66% margin. Boneless meat realized a high margin of 85%. Goat meat realized a margin of Kshs.100/kg while sheep meat realized a margin of Kshs.80/kg and on average shoat meat realized a margin of Kshs.90/kg (64% margin).

Low class butcheries are common in low income estates and many only deal with beef and occasional shoat meat. They purchase the lower grade meat. Average buying prices were Kshs.130/kg while average selling prices were Kshs.200/kg giving

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a margin of Kshs.70/kg or 53% margin. Boneless beef realized the highest margin of Kshs.90/kg but this is only a small proportion of sales. The prices and margins are as shown in table 46.

	Prices and Margins (Kshs/kg)			Margin
	Buying	Selling	Margin	%
Boneless beef	130	220	90	69
Beef with bones	130	180	50	38
Average	130	200	70	53

Table 47: Gross Margins in Low Class Butcheries (Mathare North)

The extra-low class of butcheries are found in low-income areas, mostly slums found in most areas of Nairobi. They purchase the lowest quality meat and are prone to be supplied with un-inspected meat. Average buying prices were Kshs.120/kg while the average selling price was Kshs.180/kg giving a margin of Kshs.60/kg or 50% margin. This class of butcheries will mostly deal with meat with bones realizing a margin of 33% over the buying price as shown in table 47.

	Prices and Margins (Kshs/kg)			Margin %
	Buying	Selling	Margin	
Boneless beef	120	200	80	66
Beef with bones	120	160	40	33
Average	120	180	60	50

Table 48: Gross margin in extra-low class butcheries (Majengo, Mathare South)

4.4 Mombasa Terminal Market

4.4.1 Livestock Production in Coast Province and its Interactions with North Eastern Province

In terms of livestock marketing chains analysis, the Coast province is closely linked to the North Eastern route in several ways. Firstly, Mombasa is the major terminal for North Eastern province livestock. Secondly, it provides trekking rights through Tana River and Lamu and finally it provides fattening opportunities in ranches in Lamu, Malindi, Tana River, Taita Taveta, Kilifi and Kwale.

4.4.4.1 Livestock Population and Off-take for Slaughter

The province has also a considerable livestock resource base estimated at one million cattle, 0.5mi sheep, 1.1 mi goats and 59,303 camels in 2004 as shown in table 49.

Type of Livestock	Lamu	Malindi	Tana River	Kilifi	Kwale	Mombasa	Taita Taveta	TOTAL
Beef cattle	67,705	118,300	368,000	136,034	159,535	4,143	148,514	1,002,231
Sheep	21,880	69,600	277,000	15,694	75,250	1,826	60,443	521,793
Goats	92,875	165,180	365,300	119,323	232,420	8,127	123,354	1,106,579

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Camels	-	23	58,700	45	15	15	505	59,303
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Table 49: Livestock Population Estimates

This livestock resource base provides for meat supply in the province as shown in table 50:

District	Cattle	Sheep	Goats	Camels
Kilifi	9,673	3,475	6,840	-
Malindi	5,702	707	4,684	7
Mombasa	34	-	250	-
Kwale	15,329	6,717	12,428	527
Taita Taveta	6,649	1,085	5,562	-
Tana River	956	1,031	4,406	303
Lamu	1,258	543	3,688	-
TOTAL	39,609	13,558	37,858	837

Table 50: Livestock slaughter figures

Comparing figures in tables 48 and 49 shows that the overall off-take rate for slaughter for cattle is about 4%, sheep 2.5%, goats 3% and camels 1.4%. However, some districts have higher off-take rates. As an example, cattle off-take for slaughter in Kilifi is 7%, Kwale 9.6% and Taita Taveta 4.5% implying slaughter of imported cows from up-country.

4.4.1.2 Livestock Movement and Ranching

Trekking in the districts is demonstrated by livestock export figures. Districts (Tana River, Lamu, Malindi and Taita Taveta) which are used for fattening are the main exporters as shown in table 51.

Species	Tana River	Lamu	Malindi	Taita Taveta	TOTAL
Cattle	17,375	1,813	1,615	1,014	21,815
Shoats	12,440	585	507	913	14,445
Camels	397	-	-	-	-

Table 51: Livestock exports for slaughter

Most of these animals exported include a considerable number of livestock from North Eastern province which are either on transit or being grazed in the 80 ranches in the province as shown in table 52.

District	Group Ranch	Public Ranch	Individual Ranch	DAC	Co. Ltd	Coop Ranch	TOTAL
Lamu	-	-	8	1	4	-	13
Malindi	2	1 (ADC)	0	1	1	2	7
Kilifi	5	0	0	1	1	0	7
Taita Taveta	6	0	7	9	4	1	27
Kwale	(4 proposed)	0	1	2	3	1	15
Tana River	0	0	1	5	2	1	11

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TOTAL	20	1	16	22	16	6	80
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Table 52: Ranch category and distribution

It is shown that the four districts which export large numbers for slaughter also have the largest number of ranches.

4.4.1.3 Livestock Marketing and Exports

Livestock was marketed through auction rings or sold directly to slaughter houses. Seven auction rings were in operation and handled business worth Kshs.172.65 mi as shown in table 53.

Auction Ring	No. of Animals Auctioned				Total Value in Kshs.
	H/C	Value	S/G	Value	
Samburu	2,156	20,310,000	3,525	4,100,000	4,410,000
Kinango	2,015	31,060,721	7,717	11,612,357	2,673,078
Mwangulu	2,457	15,090,000	9,727	6,000,000	1,096,000
Bamba	1,449	11,295,482	10,315	11,394,000	2,689,482
Mariakani	1,503	11,716,430	340	340,000	2,056,430
Bura	1,002	7,014,000	7,095	6,385,500	3,399,500
Garsen	5,217	38,410,500	2,496	3,216,603	1,627,103
	66 camels	1,089,000	-	-	1,089,000
TOTALS	15,799	130,986,139	41,215	43,054,460	172,654,515

Table 53: Livestock Auction Sales and Values

Auction figures for cattle have increased from 10,379 in 2000 to the 2004 figure of 15,799 while that of shoats has increased from 20,531 to 41,215 in the same period. However, comparing these figures to those in table 48 shows that only 40% of slaughtered cattle and 80% of sheep were auctioned while others went direct to slaughterhouses. In 2004, 886 cattle and 800 shoats were also exported to Mauritius.

As analyzed above, the livestock industry in Coast province is very closely interrelated with that of North Eastern province and a considerable percentage of cattle traded at the coast comes from North Eastern province and trekked or trucked from Garissa down Tana River district for district slaughter or fattening in coastal ranches. Other sources of animals are Eastern province through Emali market and from Kajiado.

4.4.2 Slaughterhouses Supplying Mombasa

The eight major slaughterhouses are located in Kwale district (Kasementi, Mariakani and Pungu), Kilifi District (Miritini, Uwanja wa Ndege, Vipingo, Mombasa Export slaughterhouse) and Malindi (Malindi which only supplies Malindi). Their typical slaughter figures were as shown in table 54:

Date	Slaughterhouse	Cattle	Goats	Sheep	Camels
February 2004	Mariakani	429	358	239	22
January 2004	Pungu	266	13		0
November 2003	Kasementi	979	1367	713	0
February 2004	Mnagoni	377	197	92	0

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February 2004	Vipingo	213	0	0	0
January 2004	Uwanja wa Ndege	387	283	117	0

Table 54: Slaughter Figures for Selected Months in the Major Slaughterhouses Serving Mombasa

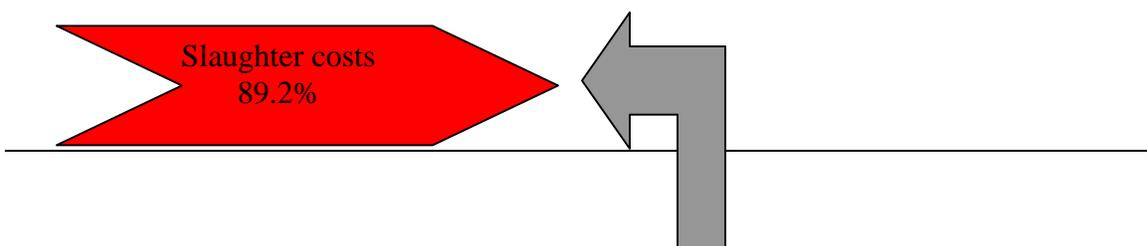
Source: CARE 2004

Analysis was made on Mombasa export slaughterhouse(Mnagoni) which has installed a daily slaughter capacity of 200 heads of cattle but only slaughters 80 heads/day (40% of installed capacity) and 320 shoats but slaughters 200 heads (63% capacity). The source of animals was coastal ranches, Garissa, Tana River and Eastern province. The estimated cost of slaughter operation assuming an annual slaughter of 24,000 animals was as shown in table 55 and figure 55.

Costs	Kshs.
Cattle Buying Price	22,000
Annual licence	1.50
Vet Licence	0.2
Electricity	5.0
Labour	6.0
Slaughter costs	200
Meat inspection	100
Water costs	3
Other costs	20
	22,336
REVENUE	
Meat (170 kg) @ Kshs.160/kg	27,200
Liver	200
Offals	800
Head	100
Hide	480
Total Revenue	28,780
Gross Margin	6,444
Gross Margin % of Sales	22.4

Table 55: Estimated Butchers Operating Margin for Cattle (Mombasa)

It is noted that the butcher realizes a margin of Kshs.6,444/head of cattle or a gross margin of 22.4% which is higher than the Nairobi gross margin calculated at 18% of sales.



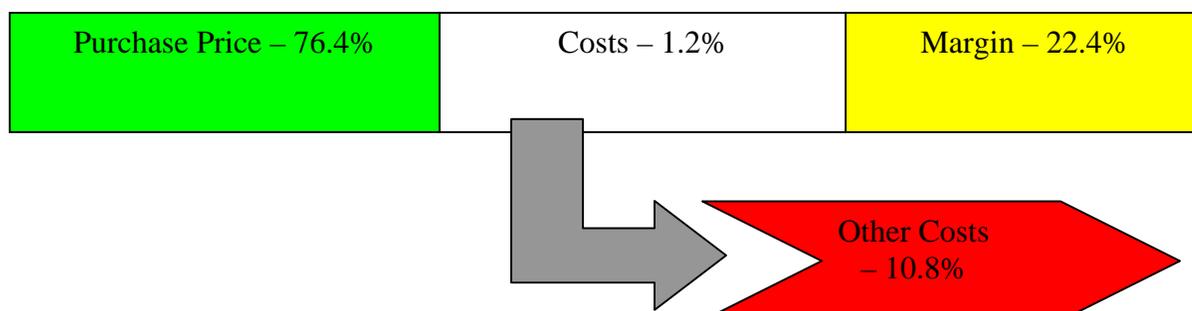


Figure 28: Value Chain for Mombasa Slaughterhouse

4.4.3 Meat Price Survey and Marketing Chain

Meat from slaughterhouses was transported to Mombasa estates of Nyali, Bombolulu, Majengo, Likoni, Mkomani, Bondeni, Mashimoni and Tudor among others. Transport costs for carcasses were Kshs.300/cattle and Kshs.100-Kshs.250/shoat. Five butcheries were interviewed and their average buying price was Kshs.176/kg of cattle (7% increase from last year) and Kshs.174/kg of shoat meat (10% increase from last year). These prices are higher than the highest prices in Nairobi. The prices are shown in table 56:

	LY	TY	LY	TY	LY	TY	LY	TY
M-1 Bombolulu	160	170	150	160	-	-	-	-
M-2 Likoni	170	180	160	180	200	200	100	100
M-3 Likoni	150	170	160	170				
M-4 Bondeni	170	180	160	180				
M-5 Mkomani	170	180	160	180	200	200		
Average	164	176	158	174	200	200	100	100
% increase	7%		10%		0		0	

Table 56: Meat Purchase Prices (shs/kg) by butcheries (Mombasa)

Note: LY = Last Year; TY = This Year

Selling prices for beef increased by 1-6%, for special cuts by 2-3% and for shoats by 7% as shown in table 57.

	LY	TY	%
Beef			
- Boneless	234	236	1
- With Bones	166	176	6
- Sirloin	244	250	2
- T- Bone	196	200	2
- Fillet	224	232	3
- Rump steak			
- Topside			

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- Chaps			
- Shoulder steak			
- Loin			
- Top rump			
- Silverside			
Goat	160	172	7
Sheep/Lamb	160	172	7
Poultry – Local			
- Broilers	200	200	0
Fish	100	100	0
Pork			
Pork/Fillet			

Table 57: Meat Selling Prices in Mombasa

4.4.4 Gross Margins in Meat Marketing in Mombasa

The butcheries visited were generally middle class butcheries with boneless meat price averaging at Kshs.238/kg and beef with bones at Kshs.176/kg. Shoaat meat averaged at Kshs.172/kg. These prices were generally lower than Nairobi. The prices and margins are shown in table 58

	Prices and Margins (Kshs./kg)			Margin %
	Buying	Selling	Margin	
Boneless beef	176	236	60	34
Beef with bones	176	180	4	2.3
Goat	174	180	6	3.4
Sheep	174	180	6	3.4
Average beef	176	208	32	18
Average shoats	174	180	6	3.4

Table 58: Gross Margins for Mombasa Butcheries

The average gross margin in selling beef was Kshs.32/kg which was about one third of the Nairobi middle class butcheries which was Kshs.96/kg. In the case of shoats, it was only Kshs.6/kg which was only 7% of the Nairobi margin for shoats. The high buying prices and possibly the availability of cheaply priced fish affected meat margins.

5.0: BY-PRODUCTS MARKET VALUE CHAINS

The by-products considered were hides and skins, offals and bones and pastoralist milk. Offals are important in the livestock chains they are the main source of profit in the slaughterhouse and butchery trade. Pastoral milk is usually consumed at home and any surplus is collected and sold in nearby urban centres.

5.1 Hides and Skins Value Chain

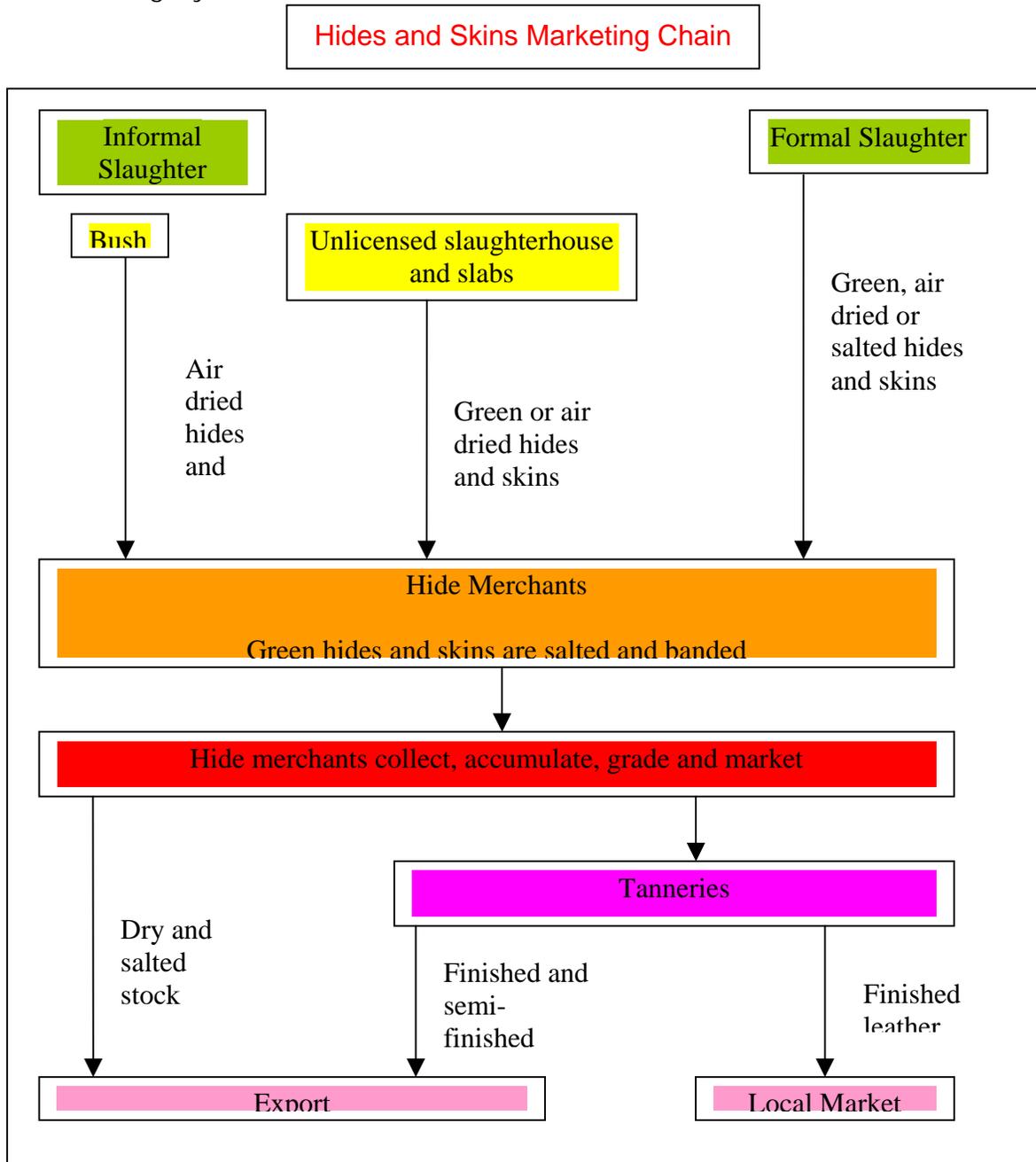
5.1.1: Marketing Value Chain

Hides and skins provide revenue to butchers, government county/municipal councils and traders. The source of hides was from informal slaughter, unlicensed slaughterhouses and slabs and licensed slaughterhouses and slabs. Some quantities may be entering Kenya from neighbouring countries through the porous borders. The hides and skins marketing chain is as shown overleaf

Figure 5.1: Hides and Skins Marketing Chains

Figure 29: Gross Margins for Mombasa Butcheries

Source: Agrisystems 2003



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5.1.2 National Production

Hides and skins produced at home or from slaughterhouses/slabs are cured using three methods; air-drying, wet salting and ground-drying. At primary-level hides and skins traders collect hides and cure them in their 'bandas'. After curing, they are sent to stores of secondary traders. The procured hides are graded into four grades which fetch different prices as illustrated in the case of Isiolo district for 2005 and shown in table 59.

Type	I		II		III		IV		Total	Mean (Shs)
	%	Sh/k g or piece	%	Sh/k g or piece	%	Sh/k g or piece	%	Sh/k g or piece		
Cattle Hides	34		32		26		8		100	
WS/kg		60		50		42		30		45.5
AD/kg		45		37		30		20		33
Goat skins	36		34		22		8		100	
WS/piece		55		47.5		40		30		43
AD/piece		45		35		30		20		32.5
Sheep skins	38		33		21		8		100	
WS/piece		102		85		80		70		84
AD/piece		70		60		50		40		55
Camel hides	29		24			27	20		100	
WS/kg		20		20		20		20		20
AD/KG		10		10		10		10		10

Table 59: Hides and Skins Grades and Prices – Isiolo 2005

Note: Average weight of wet salted (WS) cattle hide = 12kg
Average weight of air dried (AD) cattle hide = 5 kg
Average weight of wet salted (WS) camel hide = 18kg
Average weight of air dried (AD) camel hide = 5 kg

It was noted that sheep skins were valued more than goat skins with almost a 100% price differential for wet salted skins. Camel hides were valued least with no price differential for all grades. Cattle skins were valued highest with the average price of wet-salted hide at Kshs.546/piece and Kshs.165/piece for air-dried hides. To obtain higher grades requires hides and skins to be played properly and wet salted.

National production has generally been on the increase except in the case of goat skins as shown in table 60 for 2000 to 2004. These figures maybe misleading as there are inflows from neighbouring countries and carry-over stocks and as such, they don't reflect off-take rates as this would represent an off-take of 20% in the case of cattle, about 50% for shoats and 3.4% for camels.

Year	Hides	Goat	Sheep	Camel
2000	1,700,791	2,393,876	1,383,071	21,116
2001	1,716,583	2,966,564	2,324,301	20,948
2002	2,124,326	2,684,050	2,661,745	20,089
2003	2,298,901	3,855,085	2,451,373	22,162
2004	2,417,874	3,095,671	3,808,499	34,023

Table 60: Production of Hides and Skins 2000 – 2004

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Production by province shows the highest producer as Nairobi due to the many slaughterhouses and concentration of traders with Rift Valley as the second largest producer. North Eastern province was among the low producers as animals were exported for slaughter outside of the province as shown in table 61

Province	Hides	Goat skins	Sheep skins	Camel hides
Nyanza	223,120	127,786	87,901	
Coast	113,090	166,127	19,270	270
Eastern	275,663	530,710	212,171	5,000
Western	89,005	36,260	43,830	
Central	260,155	92,050	118,333	
Nairobi	905,302	1,184,654	2,390,153	
RVP	491,441	826,474	825,017	417
NEP	60,098	131,610	111,824	28,376
TOTAL	2,417,874	3,095,671	3,808,499	34,023

Table 61: Production of Hides and Skins by Province – 2004

5.1.3 Tanning of Hides and Skins

As shown in the value chain, most of the hides and skins end in tanneries. About 10 major tanneries have integrated process to finished products. Most of the rural tanneries only produce wet blue leather for further processing. The capacities of major tanneries are shown in table 62.

Tannery	Location	Product	Capacity
Leather industries of Kenya	Thika	Leather finished products	300,000 hides 200,000 skins
New Market Leather Factory	Nairobi	Wet blue	270,000 skins
Bata Shoe Factory	Limuru	Products	200,000 hides 10,000 skins
Zing Investment Ltd	Nairobi	Products and articles	12,000 hides 240,000 skins
Alpha Rama Ltd	Athi River	No finished products	250,000 hides 1,000,000 skins
Sammipex (K) Ltd		Wet blue	150,000 skins
Nairobi Tanneries Ltd	Nairobi	Wet blue	
Aziz tanneries Ltd	Nairobi	Finished leather	10,000 hides 250,000 skins
Nakuru Tanneries	Nakuru	Finished and articles	
Sagana Tanneries	Sagana	Finished stage	150,000 hides
Dogborn industries		Wet blue	
East African Tanneries	Nairobi		140,000 hides 140,000 skins

Table 62: Tanneries, their locations, products and capacities

The installed capacity for hides is 1,062 mi hides which would account for 44% of all hides produced. In the case of skins, the installed capacity is 2.26mi skins which are about 33% of capacity. This implies that domestic production of hides and skins can satisfy local tannery demand and leave a surplus for exports. However, in some

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years, tanneries operate at lower capacities due to competition by the export trade and depressed demand for locally produced leather goods due to high imports of second hand leather goods.

5.1.4 Exports of Hides and Skins and Finished/Semi-finished Leather

Kenya exports a considerable amount of undressed hides and skins and leather. The exports, value and unit price are shown in table 62.

Products	2000	2001	2002	2003	2004
Undressed Hides/Skins:					
Quantity (MT)	7,555	10,030	7,181	13,910	18,542
Value (Ksh mi)	494	635	445	551	956
Unit Price (Kshs/kg)	65	63	62	40	52
Quantity in cattle hide equivalent (12 kg)	629,583	858,333	598,417	1,159,167	1,545,167
% of total produced	37%	50%	28%	50%	64%
Leather					
Quantity (MT)	5,915	3,847	4,334	4,898	8,646
Value (Kshs.mi)	486	576	601	1,018	1,115
Unit Value (Kshs/kg)	82	150	139	208	129

Table 63: Exports, Value and Unit Price for Hides/Skins and Leather

Source: Economic Survey 2004 and 2005

It is noted that Kenya exports on average 11,444MT of undressed hides/skins with an average value of Kshs.616 mi. Prices have been on the decline from Kshs.65/kg in 2000 to Kshs.40 in 2003 but have risen to Kshs.52/kg in 2004. The exported hides/skins would represent 40-50% of total production (calculated on cattle hide equivalent of 12kg wet salted hide). Kenya also exports on average 5,528MT of leather with an average value of Kshs.759 mi/year. The two products earn the country about Kshs.1.4 billion annually.

5.1.5 Stakeholders in the Hides and Skins Value Chain

The stakeholders in the hides and skins value chain include livestock keepers/home slaughter, slaughterhouses/slabs, county/municipal council, banda/store owners, VSD/MOA, customs and transporters. Some of these exert economic rent on the chain as shown in table 64.

Institution	Requirements	Associated Costs
MOLFD	Movement permit for collection	Kshs.5,/year
Veterinary Dept.	H/S Buyer Licence	Kshs4,000/year
	Banda Licence	Kshs.500/year
	Slaughter man's Licence	Kshs.100/year
	Slaughter man's Folder	Kshs.2,500/year

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	Dispatch Notes	Kshs.100/dispatch
	H/S Buyers Folder	Kshs.250/year
	Export Licence	Kshs.150,000/year
	Veterinary Dept. Export Levy	2% of export value on raw hides and skins 1% of export of wet blue 0.5% of export value of processed leather
County/Municipal Council	Cess	Cattle Kshs.7-15 Shoats Kshs.2-4 Camel Kshs.7-10
	H/S Trader Licence	Kshs.1,500/year
Customs Railways	Documentation	Kshs.1,000/lot
	Transport	2.5% per MT

Table 64: Economic rent on hides/skins value chain

It is observed that there is considerable economic rent imposed on the chain. At some levels like the municipality/county council level, there is double taxation by both. Similarly, the government charges on movement permits annual licence may need to be harmonized as they result to double taxation.

5.1.6 HIDES AND SKINS TRADE: THE CASE OF TEGEMEO LTD IN ISIOLO

Started in 1998, this is a sole proprietorship hide and skin trader whose main sources of hides and skins are the Isiolo slaughterhouses and home consumption slaughter. These by-products are mainly bought wet but few numbers of home dried ones are also bought.

Value addition activities

This is mainly by:

- Salting wet hides and skins. This attracts more market and fetches higher market price
- Washing and further skinning to remove any fat and meat by inadequate hurried skinning.

Buying prices related costings

Wet skins and hides are bought either by weight basis or per piece. Shoaat skins are bought at fixed prices per piece. The size of the by-product plays negligible role in pricing.

Species	Buying price (Kshs.)	No. bought/day
Cattle hide	25 per kg	10
Sheep skin	60 per piece	60-70
Goat skin	90 per piece	60-70
Camel hide	10 per kg	70-80

Table 65: Purchase prices of Hides and Skins

Costs incurred during buying

- Transport to slaughterhouse – Kshs.100
- Cost of transporting the by products – Kshs.50
- Communication costs – Kshs.100

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Value-Addition Costs

- 4 bags of salt 50 kg each Kshs.3,800
- Transport to store 100
- Water for cleaning dirt 100
- Two cleaners @ 100/person/day 200
- Security per month 2,000
- Rent per month 2,000

MARKETING OF HIDES AND SKINS

These are mainly sold to dealers in Nanyuki and Nairobi. Mt. Kenya Hides and Skins Traders is the main market. The selling price varies depending on quality and demand. Currently, there is strong demand for goat skin and cattle hides. Camel hides fetch lower prices due to low demand. At the terminal market, the hides and skins are graded and sold on weight basis.

Selling prices and related marketing costs

Species	Kshs/Kg
Cattle hides	65
Camel hides	30
Goat skins	60
Sheep skins	50

Table 66: Selling Prices of Hides and Skins

- Transport costs self to Nanyuki Kshs.400
- Transportation of by-products (Pick up hire) Kshs.3,000
- Food per day 200
- Accommodation per day 200
- Telephone costs per day 100

The calculated value chain is as shown in figure 30.

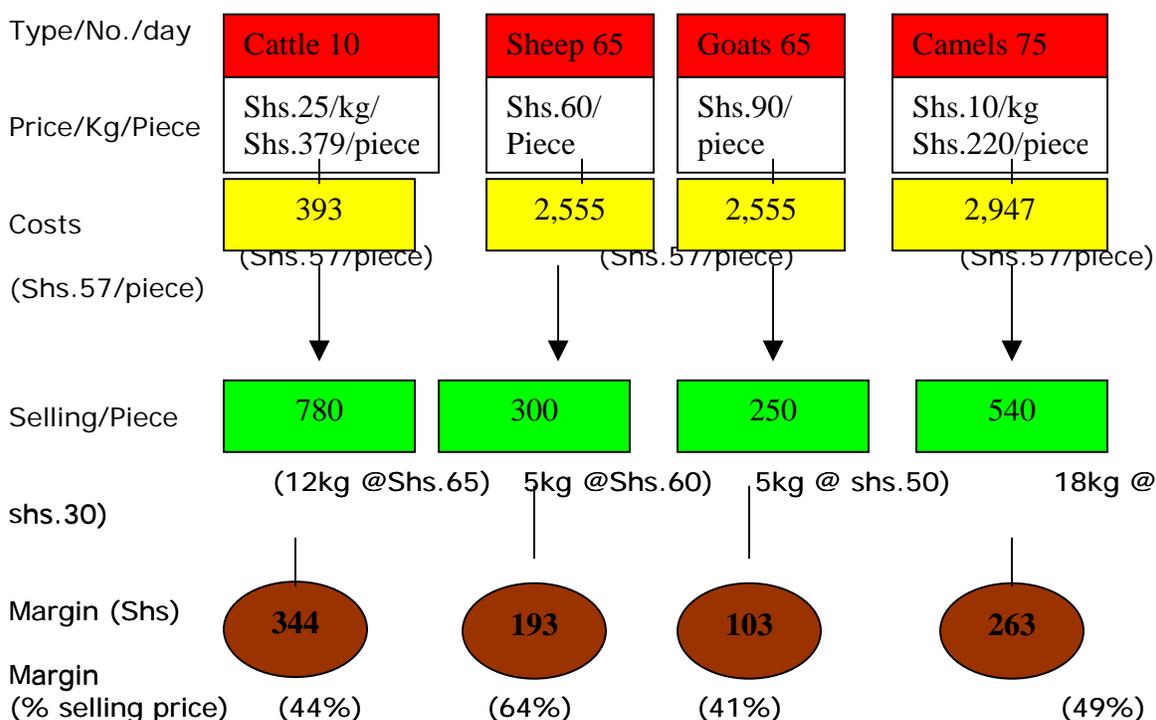


Figure 30: Value-Addition in Hides and Skins Trade (Tegemeo-Isiolo)

These figures can only be considered indicative as procurement value addition and marketing costs of Kshs.12,350 were apportioned for 215 hides and skins and not by actual costs per type of hide or skin. The weights for wet salted shoats skins were also assumed. The main cost variables in value addition were salt (31% of total costs), rent and security (16.2% each), marketing costs (31.6%), and other costs (5% of total). Based on the estimated costs and weights, the percentage margins were 46%, 64%, 41% and 49 for cattle hide, sheep skin, goat skin and camels hide respectively. These margins were calculated as a percent of the sales price.

Problems faced in Hides and Skins trade

- Lower demand for hides and skins especially camel hides
- Small market due to fall of tannery/leather industry
- Poor quality hides and skins especially during droughts when hides and skins are thin
- The business is capital intensive and sourcing for funds is challenging

5.2 Offals and Bones Marketing Chains

Three classes of products can be identified in this chain:

- Offals – red offal (heart, liver, lungs, kidneys)
- white/green offal (rumen/stomachs and intestines)
- Heads/legs
- Bones

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Offals, heads and bones, commonly called the fourth quarter, account for about 25% of the meat consumed in the country and their value chain is similar to that of red meat marketing, but a simplified value chain is as shown in figure 31.

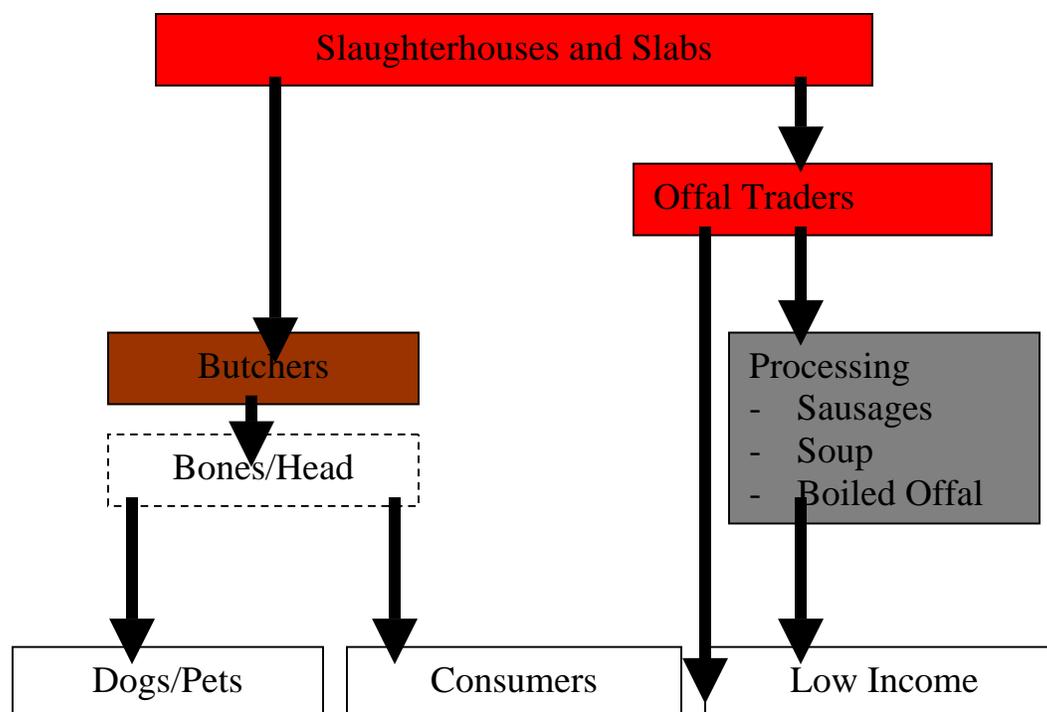


Figure 31: Offal, Bones and Heads Market Chains

Offals and heads may be sold to butchers who sell to consumers for home consumption. Heads and bones are also sold for dogs. The other main channel is that of offal traders who sell in their butcheries/kiosks to low income consumers for home consumption. They also process the offals further by cleaning and making sausages, soup and boiled offal for direct sale to consumers. Prices for offals in butcheries in Nairobi were shown in table 67.

Area	W/NW Central Nairobi		W/SW Nairobi		Northern Nairobi		N. E Nairobi		Eastern Nairobi		Mombasa	
	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY	LY	TY
Tongue /kg	180	200	-	-	-	-	-	-	-	-	-	-
Bones/ Billion	200	250	40	55	79	94	45	59	-	-	-	-
Liver/ kg	230	230	195	219	214	244	173	193	192	222	120	138
Heart/ kg	226	243	205	230	205	233	159	178	159	189	114	128

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Intestines/offal/kg	115	132	86	108	93	113	63	87	-	-	100	100
Head/piece/kg	331	426	233	300	300	375	210	258	-	-	100	100

Table 67: Prices of offals in Nairobi and Mombasa (Shs/Kg or per piece)

LY = Last Year; TY = This Year

It is noted that offal is sold in all classes of butcheries. Prices are highest in West/North West Nairobi in higher income areas. Heads and bones in these areas are usually sold for pets. Prices were lower in the middle income and low income estates.

5.3 Pastoralist Milk Production and Marketing

5.3.1 Milk Production: An Overview

In Kenya, more emphasis is put on dairy milk production in high potential areas, despite milk being the most important food item in ASAL areas. Estimates (Karanja 2001) of milk production by various species at 59.8% of total for dairy, 24.5% for zebu, 11.5% for camel and 4.1% for indigenous and dairy goats as shown in Figure 32

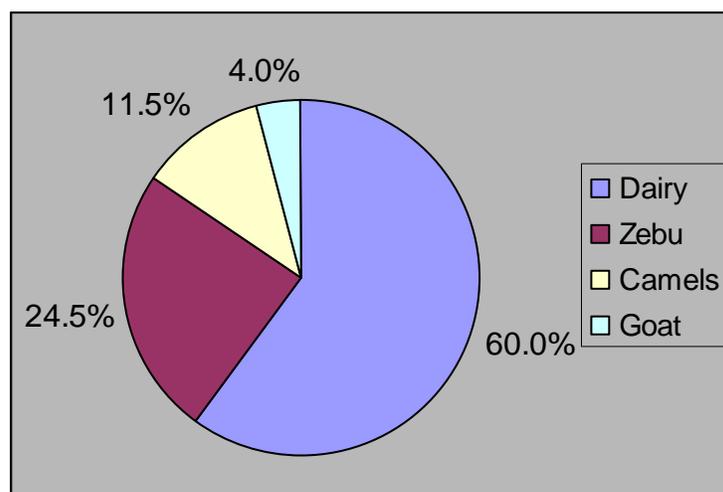


Figure 32: Milk Production by Livestock Species (%)

Source: Karanja 2001

These figures suggest that there are some likely milk surpluses in ASAL areas which can be marketed. However, in considering potential milk supply, various factors have to be considered like herd size and structure, number of lactating cows, milk

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production per cow, needs of the calf and family and milking strategy as depicted in Figure 33.

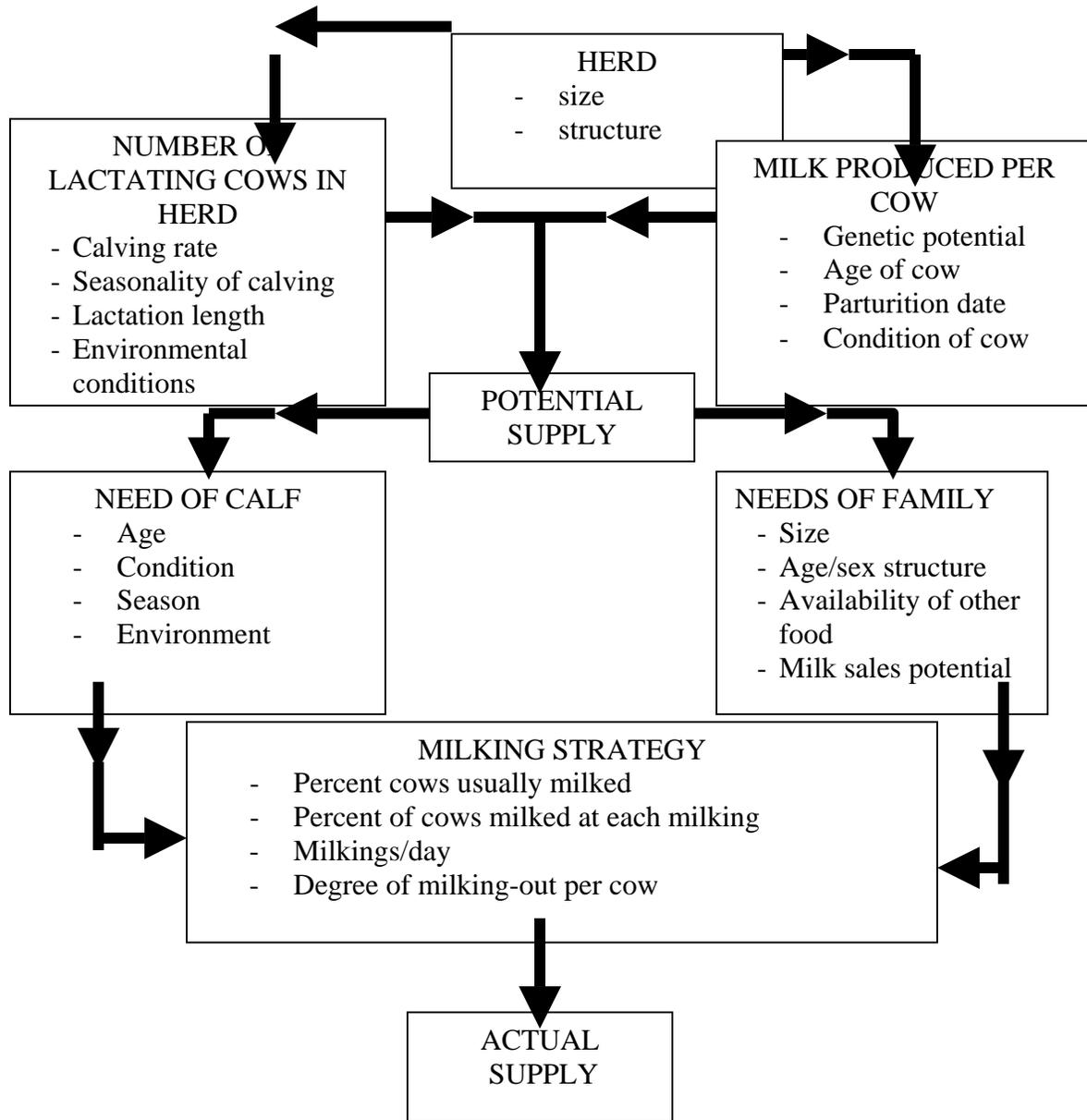


Figure 33: Factors determining potential and actual household milk supplies

5.3.2 Milk Production in ASAL Areas and Role of Women in Kajiado

ASAL cattle produce a mean of about one litre/day in the rainy season and about 0.94l/day in the dry season and a typical scenario for production is as shown in table 68 for three categories of herd size.

Season	Wet	Dry	Wet	Dry	Wet
Period	Dec-Mai 1982	Feb-Mai 1982	Apr-May 1982	Jun- Oct	Nov-Feb 1982-3

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				1982	
Small Scale					
Daily offtake, l/cow	1.28	0.66	1.26	0.93	1.19
Cows usually milked	4.9	6.3	7.8	7.6	7.1
(a) Percent of cows actually milked	96	98	90	96	95
Actual offtake, l/hh/day	6.0	4.1	8.8	6.8	8.0
Medium Scale					
Daily offtake, l/cow	1.04	0.73	0.92	0.72	1.14
Cows usually milked	10.2	11.6	12.5	12.2	13.2
(a) Percent of cows actually milked	80	86	80	92	75
Actual offtake, l/hh/day	8.4	7.1	9.1	8.0	11.3
Large Scale					
Daily offtake, l/cow	0.68	0.51	0.73	0.60	0.79
Cows usually milked	24.7	24.9	28.9	23.8	23.9
Percent of cows actually milked	65	80	60	72	67
Actual offtake, l/hh/day	10.8	10.2	12.7	10.2	12.7

Table 68: Estimates of milk off-take per day by scale of production and by season in Olkarkar group ranch

Source: Maasai Herding(1987)

It is noted that families with small herds will milk less than 10 cows which will produce an average of 7 litres/household while households milking 10 – 13 cows will get about 9 litres and households milking larger herds over 23 cows get over 10 litres. Considering that milk is the major food item, the likelihood to sell is minimal due to various factors like household size and availability of cash for buying other foodstuffs implying households with cash needs are likely to sell any surplus milk, but this is affected by availability of a market like a hotel or non-livestock keeping residents like teachers and civil servants.

A more critical factor is the effect of drought on milk availability. Figures obtained for Isiolo (ALRMP-2006) show that milk was only available to children from March 2005 to Sept. 2005 and thereafter, even children had no milk as shown in table 69.

Category	Mar 05	Apr 05	May 05	Jun 05	Jul. 05	Aug 05	Sep 05	Oct. 05	Nov. 05	Dec. 05	Jan 06	Feb 06	Mar 06
Everyone	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
Only children	35.7 %	14.1 %	6.1 %	8.5 %	0.94 %	0.65 %	0.52 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %	0.00 %
No one	63.9 %	85.8 %	93.5 %	91.4 %	99.06 %	99.34 %	99.24 %	100 %	100 %	100 %	100 %	100 %	100 %

Table 69: Household milk consumption in Isiolo (2005 – 2006)

Source: ALRMP Isiolo FEWS 2005-2006

With such a situation, organized milk marketing will not develop as the needs of the family take priority when milk is available.

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Women are involved in milking and spend 2.7 hours/day in watering supervision (0.1), herding (0.4), boma livestock work (0.8), milking (1.2) and other livestock work. Women are therefore more likely to be involved in milking excess milk in nearby localities.

5.3.3 Pastoralist Milk Marketing Chain: The Case of Garissa Town

In the sections above dealing with Southern rangeland (Kajiado) and Northern rangelands (Isiolo), it was argued that there might not be established milk marketing outside the immediate rural centres. There are areas with surplus milk for transport to distant towns like Garissa which is served by Lower Garissa and Tana River District and from within the district. The supply to Garissa town is analyzed in the sections below.

5.3.3.1 Participants in the Garissa Milk Trade

Nine participants were interviewed. Of the participants, six were individual traders, two were youth groups and one was a women group. The six individual traders included 5 women (83%) and one male indicating the dominance of women in milk trading. Their involvement in milk trading ranged from 4 to 11 years averaging at 8 years of trading.

The four groups trading in milk had the following characteristics as shown in table 70.

Name of Group	Year Formed	Membership	
		Male	Female
Pastoralist Women Group	2001	-	25
Herden Hope Youth Empowerment	2000	10	20
Halgan Youth Development Group	2002	20	20

Table 70: Characteristics of Groups Marketing Milk

It is noted that women accounted for about 80% of individual traders while in the three groups women accounted for 76% of members and in the women group for a 100% of members.

5.3.3.2 Sources of Milk and Buying Prices

The milk catchment for Garissa town extends to 105km mostly along the Tana River. The main sources mentioned are as shown in table 71.

Locality	Distance (Km)	% Respondents
Around town	< 10	22
Locations (Baya 11 km)	11	11
Watering Point	24	11
Askow	40	11
Sankuri	50	11
Nanighi	55	22
Raya	70	11
Bura	90	33

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Mansasuru	105	11
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Table 71: Sources and Distances from Garissa

It is noted that Bura about 90km from Garissa town is the most common source. At each source, traders collect milk from watering points, individual pastoralists or brokers/middlemen.

Prices of milk vary from place to place being lowest in far off collection points and high near rural centres. Milk prices also vary by seasons being low in wet season and high in dry seasons when supplies are low. The prices at each source are as shown in table 71.

	Camel Milk		Goat Milk		Cow Milk	
	Wet	Dry	Wet	Dry	Wet	Dry
Around town	30	40	35	40	35	46
Locations <50km	25	30	30	35	30	35
Location (50-90)	20	30	20	30	20	35
Bura (90km+)	20	25	22	25	25	30
Average	24	31	27	33	28	36

Table 72: Prices of milk at various sources (shs/litre)

It is noted that the seasonal variation was 29%, 22% and 29% for camel, goat and cow milk respectively. These prices are comparatively higher than prices for dairy milk in high potential areas which are usually below Kshs.20/litre.

5.3.3.3 Quantities Collected and Means of Transport

Milk was collected in 5-20 litre cans/jerry cans and then bulked mostly in 20 Litre cans for transport. Analysis of data shows that the lowest amount collected per trader was 34 litres and the highest about 107 litres averaging at 75 litres. On average, the milk collected was about 41%, 39% and 20% camel, goat and cow milk respectively as shown in table 73.

Trader	Camel	Goat	Cow	Total
1	11	12	11	34
2	42	29	29	100
3	22	23	17	62
4	26	12	10	42
5	33	43	10	76
6	40	50	17	107
7	43	21	13	76
8	33	43	10	86
Average	31	29	15	75
Composition %	41%	39%	20%	

Table 73: Average Milk Collection by Traders (Litres)

Transport of milk was done using donkey carts for areas near Garissa town (22% of traders) and by canters (78% of traders) for areas far from town. Donkey cart charges were Kshs.30 per 20 litre (Kshs.1.50/litre) while canter charges were Kshs.80 per 20 litre can.

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5.3.3.4 Marketing Milk in Garissa Town

Milk traders were charged a cess of Kshs.5 per marketing day. The main market channel was Garissa central market where they sell to street hawkers, direct consumers, hotels and to middlemen who sell to smaller markets in the residential areas. Milk was sold in litres to large consumers and in half-litre bottles to small consumers. The prices were as shown in table 74.

	Camel		Goat		Cow	
	Wet	Dry	Wet	Dry	Wet	Dry
Bulk sales	40	50	44	50	45	50
Small sales (.5 l)	32.50	45	33	46	37	41
Litre equivalent	65	90	66	92	74	82
Average (Shs./l)	52.50	70	55	71	59.5	66

Table 74: Milk prices in Garissa town (Shs/Litre)

It was noted that during the wet season, camel milk prices for both bulk and small sales average at Kshs.52.50/litre while in the dry season, they average at Kshs.70/litre. In the case of goat milk, the average price was Kshs.55/litre and Kshs.71/litre for the two seasons respectively. Cow milk prices averaged at Kshs.59.50/litre and Kshs.66/litre for the two seasons respectively. There was some small price variation between the three types of milk due to consumer preference. However, the price variation between the wet and dry seasons was significant averaging at Kshs.17.50/litre for camel milk, Kshs.16/litre of goat milk and Kshs.6.50/litre of cow milk.

5.3.3.5 Gross Margins in Pastoral Milk Marketing

The value chain is comparatively simple and is one stage chain based on collection – transport – and marketing operations. In calculating the margins, the average prices at source (see table 5.12) average collection of 80 litres and transport costs of Kshs.4/litre are used. At marketing, the average prices calculated in table 73 will be used. Traders' costs are estimated at Kshs.4/litre. The margins are shown in table 75 and figure 5.6

	Camel		Goats		Cows	
	Wet	Dry	Wet	Dry	Wet	Dry
Average Price	24	31	27	33	28	36
Traders costs	5	5	5	5	5	5
Transport costs	4	4	4	4	4	4
Landed cost	33	40	36	42	37	45
Bulk sales	40	50	44	50	45	50
Margin (shs.)	7	10	8	8	8	5
% Margin	21	25	22	19	22	10
Consumer sale	65	90	66	92	74	82
Margin (Shs.)	32	50	30	50	37	37
% Margin	97	125	83	119	100	82
Average sales	52.50	70	55	71	59.50	66
Margin (shs.)	19.50	30	19	29	22.50	26
% Margin	59	75	53	69	60	58

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Table 75: Margins in Milk Marketing (Shs/Litre)

Bulk sales (in litres) realized margins of 10-25% depending on the season, the dry season margin being slightly higher. Selling to consumers in half litre bottles realized higher margins of Kshs.30-50/litre and margins of 82%-125%. Traders would prefer this lucrative channel but considering the perishability of milk in the hot climate, both bulk sales and direct consumer sales are the likely scenario. Considering the average prices for both channels, the traders realize average margins of Kshs.20/litre in the wet season and Kshs.8/litre. Most milk was sold fresh and 30% of traders sold some sour milk.

Type of milk	Camel		Goat		Cattle	
	Wet	Dry	Wet	Dry	Wet	Dry
Price/Litre	24	31	27	32	28	30
Traders/ Transport costs	9	9	9	9	9	9
Bulk sales (Shs/lt)	40	50	44	50	45	50
Margin (Shs)	7	10	8	8	8	5
Margin (%) (10%)	(17.5%)	(20%)	(18%)	(16%)	(18%)	(18%)
Consumer Sales (Shs/lt)	65	90	66	92	74	82
Margin (Shs)	32	50	30	50	37	37
Margin (%) (45%)	(49%)	(55%)	(45%)	(54%)	(50%)	(50%)
Average Sales(shs/l)	52.4	70	53	69	60	58
Margin (Shs)	19.5	30	19	29	23	26
Margin (%)	(37%)	(43%)	(36%)	(42%)	(38%)	(39%)

Figure 34: Value Chains for Pastoralist Milk Marketing (Garissa) Shs./Litre

Margins are calculated as a percentage of sales price.

Wet season average margins range from 36%-38% while dry season margins average range was from 39%-43%. However, in the dry season, there is a shortage of milk.

5.3.3.6 Problems and Suggested Interventions in Pastoralist Milk Marketing

Traders were asked to state their problems in milk marketing and suggest interventions to improve milk marketing. The problems and suggested interventions are ranked in table 76.

Problems Identified			Suggested Interventions		
Rank	No.	%	Rank	No.	%
Transport problems	6	75	Microfinance/credit	6	75
No cold storage	5	63	Improve roads	6	75
No market infrastructure	5	63	Capacity building for traders	6	75
Lack of capital	4	50	Improve market infrastructure	5	63
Price fluctuations	4	50	Market information	5	63
High transport costs	3	38	Build milk plant	3	38
No permanent sources	3	38	Build milk cooler	2	25
Excess milk during wet seasons	2	25			
Drought	2	25			
No book-keeping knowledge	1	13			

Table 76: Ranking of Problems and Interventions in Milk Marketing in Garissa

n = 8

It is noted that the highest ranked problem was the transport problem during the wet seasons (75% of respondents). Other major problems were lack of milk cooler in Garissa (63%), lack of permanent market infrastructure (63%), lack of capital and price fluctuations each at 50%. Three interventions were ranked highest by 75% of respondents. These included provision of micro-finance/credit, improvement of roads and capacity building for traders. Improving market infrastructure and providing market information were the next set of interventions (63%).

5.3.3.7 Milk Traders Understanding of the Role of KLMC

Of the nine (9) stakeholders interviewed, only those in groups (Halgan Youth Development Group, Pastoralist Women Group and Herden Hope Youth Empowerment Group) were aware of KLMC, its formation in 2000, individual membership fee of Kshs.500 and group membership fee of Kshs.1,000. The individual traders were not aware of KLMC or its objectives. The groups were generally aware of KLMC objectives:

- Advocacy for pastoralist communities
- Promotion of livestock and products markets
- Improving livelihood
- Promoting local and regional marketing
- Marketing information

On benefits received from KLMC, the following were identified:

- Office where traders can get information
 - Capacity building for members
 - Dissemination of livestock and products prices
-

The expected interventions for KLMC in the future were suggested as:

- Provision of microfinance for milk traders
- Advocacy for community rights
- Promote milk marketing and processing.

5.4 Pastoralist Milk Marketing in Mandera and Wajir

5.4.1 Role of Women in Milk Trade

In both towns, women are the dominant traders in milk. Apart from milk, they also participate in livestock trade, vegetable sales, second hand clothes sale, hides and skins, livestock by-products sales and merry-go-rounds. Milk marketing is comparatively well-organized in Mandera than Wajir as it has a better catchment area from the agro-pastoral area long Daua River in Ethiopia and agro-pastoral farming on both sides of the border across the Daua River. In the case of Wajir, it depends on collection from pastoralists in the interior of the district especially around Griftu, Lehele and Orhey. The case of Mandera is discussed below.

5.4.2 Milk Marketing in Mandera

5.4.2.1 Milk Sourcing

Milk, being the main marketing product by the group, is sourced by individual members from Ethiopian border (an agro-pastoral area) along River Dava. Peak production periods are in October to December during the long rains. The milk is transported and supplied daily to individual women sellers by agents and producers from the interior areas. Transportation is mainly by lorries and matatus who charge Kshs.3 per litre of milk. The milk is supplied fresh.

5.4.2.2 Mandera Milk Market

Built through ALRM funding, the market sits on Mandera-Wajir road and is comprised of ten (10) stalls. The market was built to enable milk producers around the town find a central milk selling point with hygienic environment.

Management and Ownership

Mandera milk market is owned and managed by Hola IYO HAWTIWATHAGA women group. This is a locally based women group, an umbrella group composed of eight individual women groups with 10 members each. The day to day management of the market is by a management committee comprising of 10 elected individuals from the subsidiary groups.

Main Group Activities

Individual members and groups mainly engage in:

- a) Milk marketing
 - b) Hides and skins trade
 - c) Vegetable sales
 - d) Livestock trading
 - e) Meat/offals selling
 - f) Foodstuff selling
-

Membership Criteria

Currently, the umbrella body managing the milk market has 80 individual members (10 members drawn from the eight individual groups) whose membership is pegged on payment of Kshs.100 registration fee and monthly subscription of the same per member.

5.4.2.3 Constraints in Milk Marketing at the Market

- Lack of refrigeration facilities. Milk being a perishable product goes bad quicker in the hotter arid areas.
- Lack of electricity. This has hampered any efforts to market the milk since business at the centre goes well beyond day time and receiving milk from the supplies starts before dawn.
- Inadequate funding from donors and members subscription. This has slowed down expansion and rehabilitation works.
- Drought effects on milk production largely reduce milk supply from outposts hence decline in business.
- Oversupply during long rain periods leads to low price and reduced profitability. This, coupled with the absence of modern storage facilities leads to milk spoilage and wastage.
- Poor infrastructure especially the roads together with the long distances to outer markets prevent any marketing to such towns as Nairobi.
- Inadequate hygiene and other quality control measures. This has resulted in some supplies adulterating milk and also supplying bad milk to the women sellers who later bear the losses as a result.
- Inadequate marketing of camel and goat milk to other communities especially non-somalis and non-nomadic pastoralists.

5.4.2.4 Requirements for Improvements in Milk Marketing

- More funding
- Capacity building on business management and record keeping
- Study tours to other areas to expose business women to new techniques and learn from other groups and communities.
- Equipment/facilities sourcing e.g. cooling cans/boxes lactometers and central refrigeration /cooling units.

5.4.2.5 Future Plans

- Source markets from major towns
- Provide credit facilities to members to expand their businesses
- Train members on value addition methods to milk and hides and skins
- Source group own transportation

5.4.2.6 Milk Marketing Value Chains

Milk is sourced from Herere, Kalaliyo, Dholo, Bowbow among other places. Brokers/collectors are used and paid at Kshs.1.0/litre. Mean purchase prices range

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from Kshs.23/litre to Kshs.29/litre. Transport is either by lorry or mini buses at the rate of Kshs.3/litre. At the Mandera market, milk is preserved by boiling and occasionally sold in sachets. The mean sale price is about Kshs.47/litre and the margins range from Kshs.9/litre to Kshs.12/litre or 18% to 25% of selling price as shown in table 77 and figure 35

Trader Name	Adey Noor Madey	Saldama Abey	Pardosa Aden	Sardia Mohammed	Nuria Gabun
Milk Source	Harere, Kalaliyo	Walahba, Suftu	Galilio, Faja	Dholo, Bowbow	Suftu, Omar Jihlo
Type&Amount (L)					
Camel	20	15	10	15	20
Goat	10	15	10	10	10
Cow	5	10	5	10	10
Purchase Unit	5L containers	3L containers	5L containers	5L containers	5L containers
Costs at Source					
Price/Litre					
Camel	23.3	30	30	25.3	30
Goat	26.6	33.3	33.3	30	35
Cow	20	20	20	20	20
Mean Price/L	23.3	27.7	27.7	25.1	28.3
Tranport Type	Lorry	Matatu	Matatu	Lorry, wheelbarrow	Lorry
Transport Cost/L	3	3	3	3.3	3
Broker/Collector Fee/L	1	1	1	1	1
Costs: Terminal Mkt					
Tranport Costs/L	2			1	
Workers costs/Day	120			100	
Preservation type	Boiling	Boiling	Boiling	Boiling	Boiling
Preservation Costs/L	1.75	1	0.83	1.16	1.33
Packaging costs/L	0.8	0.8	0.8	0.8	0.8
Food + Storage	100	50	50	50	50
Sub-Total	38.13	39.71	35.33	38.75	35.68
Revenue					
Selling Price/L					
Camel	50	53	50	53	50
Goat	53	53	50	53	53
Cow	40	40	40	40	40
Mean Price/L	47.6	48.6	46.6	48.6	47.6

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GROSS MARGIN/L	9.43	8.9	11.3	11.94	11.92
% MARK-UP	19.80%	18.30%	23.30%	25.60%	25.00%

Table 77: VALUE CHAIN ANALYSIS MILK – MANDERA

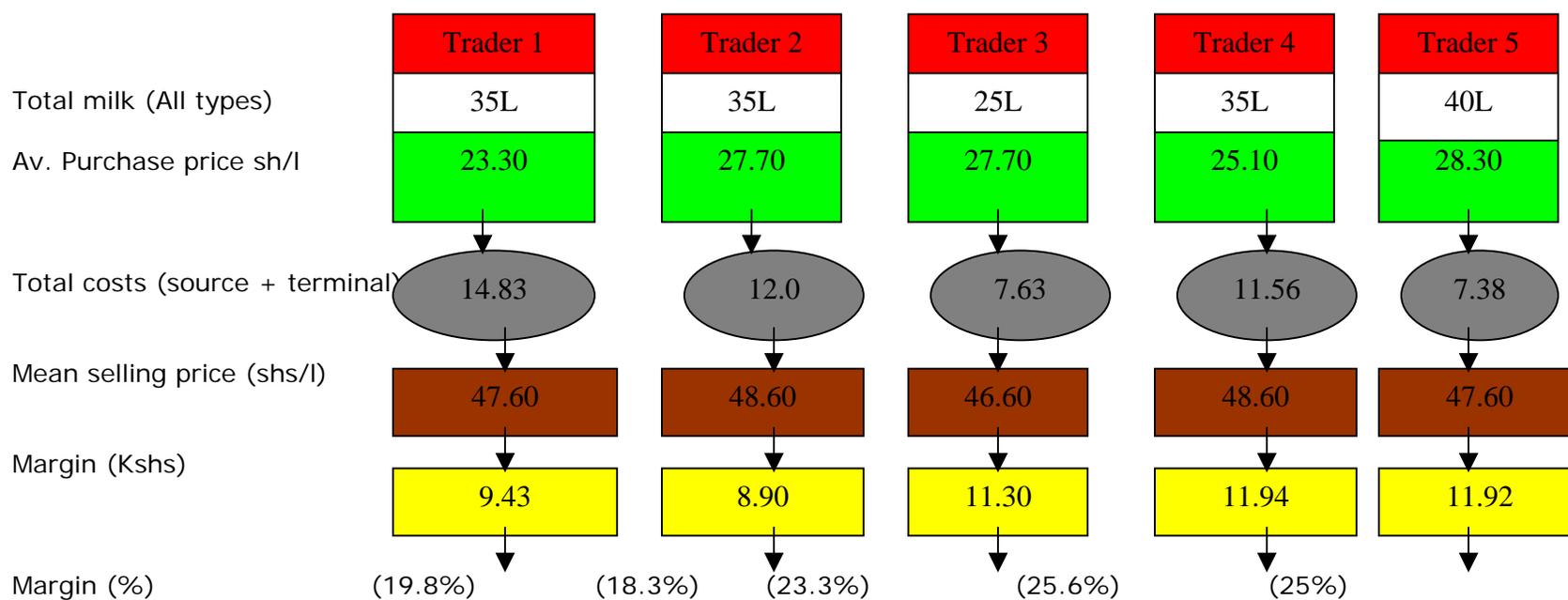


Figure 35: Manderla Milk Marketing Value Chains (Shs/Litre)

5.4.2.7 Milk Traders understanding of KLMC/DLMC Activities

The women based groups in Mandera are closely linked to ALRMP, MOLFD and DLMC/KLMC. The ALRMP built the milk market which is now operated by HOLA IYO HAWTIWATHAGA women's group as described in section 5.4.2.2. The activities membership, facilities, strengths and weaknesses of milk traders are given in table 78:

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GROUP NAME	HOLA IYO HANTIWATHAGA	KAL ALIYO	WALA HABA
CONTACT PERSON	ADEY NOOR MADEY	ABDIA MUSA	FATUMA DAHIR
ACTIVITIES	<ul style="list-style-type: none"> Milk marketing 	<ul style="list-style-type: none"> Milk marketing 	<ul style="list-style-type: none"> Milk marketing
	<ul style="list-style-type: none"> Hide/skin trader 	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Hide and skin trade
	<ul style="list-style-type: none"> Meat marketing 	<ul style="list-style-type: none"> Hides and skins trade 	<ul style="list-style-type: none"> Meat trading
	<ul style="list-style-type: none"> Livestock marketing 	<ul style="list-style-type: none"> Foodstuff selling 	<ul style="list-style-type: none"> Foodstuff trading
	<ul style="list-style-type: none"> Foodstuff selling 		
	<ul style="list-style-type: none"> Merry go-round 		
MEMBERSHIP BASE	80 (10 Member groups)	8 (Individuals)	8 (Individuals)
MEMBERSHIP FEE	<ul style="list-style-type: none"> 100 Once 	<ul style="list-style-type: none"> 100 once 	<ul style="list-style-type: none"> 100 once
	<ul style="list-style-type: none"> 100 monthly subscriptions 	<ul style="list-style-type: none"> Subscription to umbrella group 	<ul style="list-style-type: none"> Subscription to umbrella group
PARTNERS	<ul style="list-style-type: none"> ALRM 	<ul style="list-style-type: none"> ALRM 	<ul style="list-style-type: none"> ALRM
	<ul style="list-style-type: none"> MOALD 	<ul style="list-style-type: none"> MOALD 	<ul style="list-style-type: none"> MOALD
LINKAGE TO KLMC	Yes - DLMC	Yes - DLMC	Yes - DLMC
FACILITIES	<ul style="list-style-type: none"> 10 stalls one from each member group 	<ul style="list-style-type: none"> 1 stall through umbrella group 	<ul style="list-style-type: none"> 1 stall through umbrella group
	<ul style="list-style-type: none"> Plot 		
	<ul style="list-style-type: none"> Water tank 		
STRENGTHS	<ul style="list-style-type: none"> Wide membership base 	<ul style="list-style-type: none"> Linkage to umbrella group 	<ul style="list-style-type: none"> Linkage to umbrella group
	<ul style="list-style-type: none"> Bigger financial base 		
	<ul style="list-style-type: none"> Bigger voice 		
WEAKNESSES	<ul style="list-style-type: none"> Inadequate facilities 	<ul style="list-style-type: none"> Low finances 	<ul style="list-style-type: none"> Low membership
	<ul style="list-style-type: none"> Low training 	<ul style="list-style-type: none"> Low training 	<ul style="list-style-type: none"> Low finances
	<ul style="list-style-type: none"> Inadequate marketing 	<ul style="list-style-type: none"> Low membership 	<ul style="list-style-type: none"> Low training
	<ul style="list-style-type: none"> Inadequate fund, sourcing 		

Table 78: WOMEN-BASED LIVESTOCK AND PRODUCTS LINKED GROUPS – MANDERA

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5.4.3 Milk Marketing in Wajir

As stated earlier, Wajir's milk catchment area is mostly individual pastoralists and small rural markets at Griftu, Lehele, Wagberi, Orhey and Soko Mjinga. Griftu and Soko Mjinga are the main sources. Milk is collected in 3-5 litre containers and on average, a trader handles about 20 litres with camel milk accounting for 51%, goat milk for 33% and cattle milk for 16% of the total. Purchase prices range from Kshs.40/litre to Kshs.45/litre. Milk is transported by mini-buses, lorries and donkey carts. Transport costs were about Kshs.1.0/litre while the broker's charges were Kshs.5/litre.

At the terminal market, the milk is boiled and preserved. The main selling unit is a 300 ml cup. Camel milk was sold at between Kshs.50/l to Kshs.55/l; goat milk at Kshs.60-65/litre while cow milk was sold at Kshs.50/litre. The meat selling price for the three types ranged from Kshs.60/l to Kshs.65/litre and traders realized a margin of Kshs.5-12/litre or a percentage margin of 8% to 18% of sales price. Compared to Mandera, the margins are lower than Mandera's margins. This was mainly due to lower purchase price in Ethiopia's agro-pastoral areas. The value chain is as shown in table 79 and figure 36:

Trader Name	Khadija Maow	Seina M. Aden	Amina H. Hassan	Balduna Abey	Habiba Ali
Milk Source	Griftu, Lehele	Soko Mjinga, Wagberi	Orhey, Griftu	Lehele, Orhey	Griftu, Soko Mjinga, Lehele
Type and Amount (L)					
Camel (Fresh)	10	5	10	10	20
Goat (Fresh)	5	5	5	10	10
Cow (Fresh)	3	3	3	5	3
Purchase Unit	3L, 5L containers	3&5L containers	3L, 5L containers	5L containers	3L, 5L containers
Costs at Source					
Price/Litre					
Camel	40	45	40	40	40
Goat	45	50	50	50	50
Cow	40	40	40	45	45
Mean Price/Litre	41.6	45	43.3	45	45
Transport Type	Matatu, Donkey carts	Matatu, Donkey	Matatu, Lorry	Matatu, Lorry, Donkey	Matatu, Donkey
Transport Cost/Litre	1	1	2	1	1
Broker/Collector Fee/L	5	5	5	5	5
Costs at Terminal Mkt					
Transport Cost/Lt	1	1	1	1	1
Workers Costs/Lt	5				
Preservation Type	Boiling,	Boiling	Boiling	Boiling	Boiling

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	Cooling				
Preservation Cost/L	1.8	0.7	0.5	0.5	0.8
Packaging Cost/L	0.8	0.8	0.8	0.8	0.8
Selling Unit	Cup (300 ml)	Cup	Cup	Cup	Cup
Sub-Total					
Price/Litre					
Camel Milk	50	50	50	55	53
Goat milk	60	65	60	65	65
Cow milk	50	50	50	50	50
MEAN PRICE/LITRE	60	65	60	66.6	60
GROSS MARGIN/LT	4.8	1.5	7.4	7.3	6.7
% MARK-UP	8%	17.60%	12.30%	12%	11%

Table 79: VALUE CHAIN ANALYSIS (MILK) - WAJIR

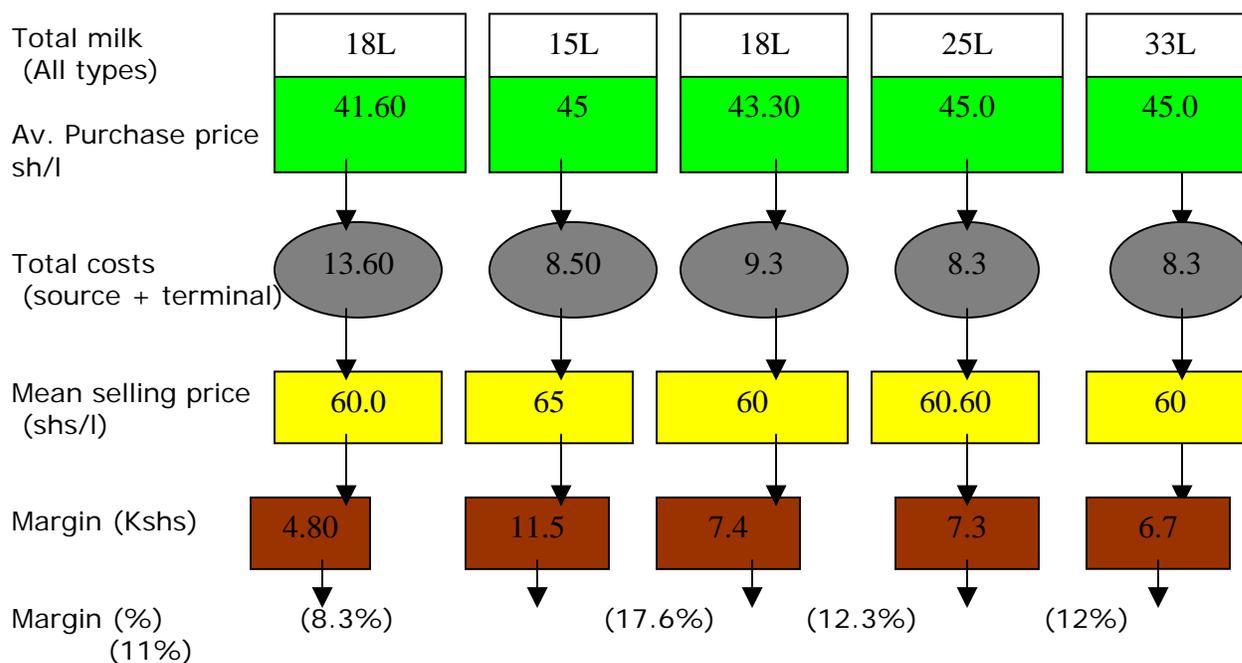


Figure 36: Wajir Milk Marketing Value Chains (Shs/Litre)

5.4.4 Milk Traders Interactions with KLMC/DLMC

Wajir milk trader's interactions with organizations, their activities, strengths and weaknesses are shown in table 80. It is noted that the major requirements are trading facilities, credit and inadequate capacity building

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GROUP NAME	KULMIYE	ALI MAOW	PARWAGO	HODHAN	GODADE	JOGOO
CONTACT PERSON	KHADIJA MAOW	HABIB ALI	KHADIJA MAOW	SEINA MAALIM ADEN	AMINA MOHAMED	HABIBA OSMAN
ACTIVITIES	<ul style="list-style-type: none"> Milk marketing 	<ul style="list-style-type: none"> Milk marketing 	<ul style="list-style-type: none"> Milk marketing 	<ul style="list-style-type: none"> Milk sale 	<ul style="list-style-type: none"> Milk sale 	<ul style="list-style-type: none"> Milk sale
	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Hide/skin sale 	<ul style="list-style-type: none"> Hides/skin trade 	<ul style="list-style-type: none"> Hide/skin sale 	<ul style="list-style-type: none"> Hide/skin sale 	<ul style="list-style-type: none"> Hide/skin trade
	<ul style="list-style-type: none"> Vegetable sales 	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Livestock trade 	<ul style="list-style-type: none"> Foodstuff sale
	<ul style="list-style-type: none"> Second hand clothes sales 	<ul style="list-style-type: none"> Food stuff sales e.g. Nyiri-nyiri 	<ul style="list-style-type: none"> Vegetable sale 	<ul style="list-style-type: none"> Vegetable sale 	<ul style="list-style-type: none"> Vegetable sale 	<ul style="list-style-type: none"> Cereals sale
	<ul style="list-style-type: none"> Hide/skin trade 	<ul style="list-style-type: none"> Livestock parts sale e.g. offals, heads 	<ul style="list-style-type: none"> Meat marketing 		<ul style="list-style-type: none"> HIV/Aids campaigns 	<ul style="list-style-type: none"> Cloth trading
	<ul style="list-style-type: none"> HIV/Aids campaigns 		<ul style="list-style-type: none"> HIV/Aids campaigns 			
MEMBERSHIP BASE	470 (47 women groups)	10 (individuals)	10 (individuals)	10 (individuals)	10 (individuals)	10 (individuals)
MEMBERSHIP FEE	<ul style="list-style-type: none"> 100 – once 	100 once	100 once	100 once	100 once	100 once
	<ul style="list-style-type: none"> 100 – monthly subscription 					
PARTNERS	<ul style="list-style-type: none"> OXFAM 	<ul style="list-style-type: none"> OXFAM 	<ul style="list-style-type: none"> OXFAM 	<ul style="list-style-type: none"> OXFAM 	<ul style="list-style-type: none"> ALDEF 	<ul style="list-style-type: none"> OXFAM
	<ul style="list-style-type: none"> ALDEF 	<ul style="list-style-type: none"> ALDEF 	<ul style="list-style-type: none"> ALDEF 	<ul style="list-style-type: none"> ALDEF 	<ul style="list-style-type: none"> DPA 	<ul style="list-style-type: none"> ALDEF
	<ul style="list-style-type: none"> NASCOP 	<ul style="list-style-type: none"> DPA 	<ul style="list-style-type: none"> NASCOP 	<ul style="list-style-type: none"> DPA 	<ul style="list-style-type: none"> NASCOP 	<ul style="list-style-type: none"> DPA
FACILITIES	<ul style="list-style-type: none"> Rented stalls 	<ul style="list-style-type: none"> Rented stalls 	<ul style="list-style-type: none"> Rented stalls 	<ul style="list-style-type: none"> Rented stalls 	<ul style="list-style-type: none"> Rented stalls 	<ul style="list-style-type: none"> Rented stalls
LINKAGE TO KLMC	<ul style="list-style-type: none"> Yes - DLMC 	<ul style="list-style-type: none"> Yes - DLMC 	<ul style="list-style-type: none"> Yes - DLMC 	<ul style="list-style-type: none"> Yes - DLMC 	<ul style="list-style-type: none"> Yes - DLMC 	<ul style="list-style-type: none"> Yes - DLMC
STRENGTHS	<ul style="list-style-type: none"> Trained on value addition 	<ul style="list-style-type: none"> Linkage to umbrella group 	<ul style="list-style-type: none"> Linkage to partners and umbrella group 	<ul style="list-style-type: none"> Link to umbrella group and partners 	<ul style="list-style-type: none"> Link to umbrella group and partners 	<ul style="list-style-type: none"> Linkage to partners and umbrella group
	<ul style="list-style-type: none"> Bigger membership 	<ul style="list-style-type: none"> Link to partners 	<ul style="list-style-type: none"> Trained on value addition 			
	<ul style="list-style-type: none"> Wide financial base 	<ul style="list-style-type: none"> Value addition training 				
	<ul style="list-style-type: none"> Bigger voice 					
	<ul style="list-style-type: none"> Linkage to partners 					
WEAKNESSES	<ul style="list-style-type: none"> Inadequate facilities 	<ul style="list-style-type: none"> Inadequate facilities 	<ul style="list-style-type: none"> Low finance base 	<ul style="list-style-type: none"> Inadequate facilities 	<ul style="list-style-type: none"> Inadequate facilities 	<ul style="list-style-type: none"> Low financial base
	<ul style="list-style-type: none"> Low training in business skills 	<ul style="list-style-type: none"> Low funds 	<ul style="list-style-type: none"> Inadequate business skills 	<ul style="list-style-type: none"> Low financial base 	<ul style="list-style-type: none"> Low financial base 	<ul style="list-style-type: none"> Inadequate business skills

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			<ul style="list-style-type: none">• Inadequate facilities	<ul style="list-style-type: none">• Inadequate business skills	<ul style="list-style-type: none">• Inadequate business skills	
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Table 80: WOMEN-BASED LIVESTOCK AND LIVESTOCK PRODUCTS LINKED GROUPS – WAJIR

6.0 POTENTIAL EXTERNAL MARKETS FOR LIVE ANIMALS AND MEAT PRODUCTS

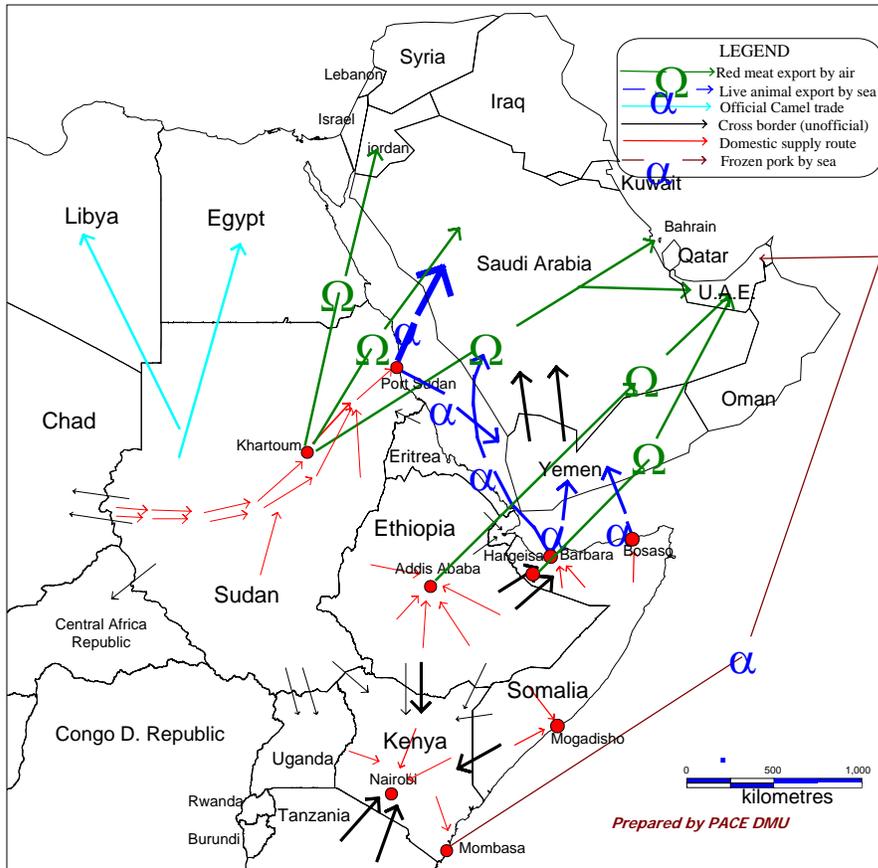
The livestock products traded in the international market include live animals and value-added meat products. Live animals are either traded for breeding and slaughter. In the case of Kenya, the exports are usually for exotic breeding stock to neighbouring countries and exports of live animals to Middle East and Mauritius. Meat products traded include beef and veal, boneless, meat extracts, sausages, canned beef, beef preparations, homogenized beef preparations, goat meat, mutton and lamb. The extent of entering the trade in meat and products depends on level of maintenance of disease free zones and export-certified slaughterhouses.

In terms of Kenya's potential to enter the live animals' exports depends on availability of surplus animals. This is critical as it is estimated that Kenya imports about 25-30% of its meat on-the-hoof from surrounding countries. External trade also depends on competition from surrounding countries, some of which have a higher livestock population than Kenya. In the case of meat and products, Kenya used to export considerable quantities in the past. However, with the breakdown in stringent disease free zone systems and collapse of Kenya Meat Commission, (recently re-opened) exports from Kenya are minimal and it has not been able even the small quota of 142MT for European Union. Competition by countries which have stringent control system like Australia, New Zealand, Brazil, Argentina and USA among others makes this a very competitive market.

6.1 External Trade in Live Animals in Eastern African Region

The Eastern African region has the highest number of tropical ruminant livestock units estimated at over 200 million TRLUs and accounting for over half of Africa's population. The countries with large populations include Ethiopia, Sudan, Tanzania, Kenya, Somalia and Uganda.

The livestock trade in the Eastern African region and its neighbours to the north (Libya and Egypt) as well as Middle East markets is a complex one. It involves both official and non-official cross-border trade, exports by sea of live animals and red meat export by air, as shown in map 4.



Map 4: Regional Livestock and Trade in Region and with Middle East
 Source: PACC

Starting from the south, it is noted that Kenya with its high demand for meat attracts un-official cross-border trade from Tanzania, Somalia, Sudan, Ethiopia and Uganda, estimated at over 25% of meat consumed. Recently, Kenya has exported camels to Middle East and cattle and shoats to Mauritius. Sudan attracts animals from Chad and is a major exporter of camels to Libya, Egypt and Middle East. Sudan also exports meat by air to Jordan, Saudi Arabia, Bahrain and UAE. Ethiopia exports meat to UAE. Somalia, despite its lawlessness exports a considerable number of live animals by sea through Mogadishu, Bosaso and Barbara ports. These are mostly to the Middle East.

6.1.1 Eastern Africa Livestock Populations and Exports

Data for livestock sector comparative analysis is scarce as many countries don't hold censuses on regular basis. FAO data (FAOSTAT 2005/06) is used for comparison. However, even this is based on estimates. Recent data does not include Somalia and the data used is for 2001/2002. The comparison of livestock populations in the six countries is shown in Table 2.

Analysis of the data shows that the region has a strong livestock resource base consisting of about 11mi camels, 118mi cattle and 190mi shoats with Ethiopia and Sudan as the dominant countries in the case of cattle and shoats populations. Somalia has the largest camel population. In East Africa, Tanzania has the largest

cattle population and Kenya has the largest shoats' population. Uganda's livestock base is comparatively small.

6.1.2 Livestock Exports from Eastern Africa

Trade in live animals between the Horn of Africa countries (Somalia, Eritrea, Djibouti, Sudan, Ethiopia and to some extent Kenya and Tanzania) and Middle East countries (Saudi Arabia, Iran, Iraq, Yemen, Oman, Kuwait, UAE, Jordan), North African countries (Egypt, Libya) and some extent the Indian Ocean island of Mauritius, has been going on for centuries and is the most important form of livestock exports. It involves cattle, sheep/goats and camels.

Data for exports is not easily available. For example, Kenya exported camels in 2003/04 but this is not recorded. However, some aggregate data for the region are presented to show the extent of trade in live animals as shown in table 81:

	2000	2001	2002	2003	2004
Camel – No (000)	86.561	4.61	20.644	50.753	36.643
Value (\$000)	22196	2,000	8,508	13,972	6,742
Unit value (\$)	256	434	412	275	184
Cattle – No. (000)	122.4	72.4	76.7	55.0	135.6
Value (\$000)	32706	19414	19,357	11,490	22,056
Unit value (\$)	267	268	252	209	163
Goats – No. (000)	1022.3	85.7	377.9	313.9	849.7
Value (\$000)	28,792	2,925	13,058	9,406	23,501
Unit value (\$)	28	34	36	30	28
Sheep – No. (000)	2587.90	612.0	3038.9	1735.1	1,193.6
Value (\$000)	110,443	19,866	167,752	100,235	86,491
Unit value (\$)	43	32	55	58	72

Table 81: Exports of Live Animals from Eastern Africa and Value (2000-2004)

It is noted that exports of live animals declined in 2001 due to the ban by Saudi Arabia because of Rift Valley Fever (RVF). Since then, they have been on increase although not to the 2000 levels. In 2004, the number of camels exported was 36,663 of which Sudan accounted for 97% of exports. Export prices for camels peaked in 2001 at US\$434/head but since then they have been on the decline. Cattle trade is dominated by Ethiopia, Sudan, Somalia and Djibouti. Exports have averaged at about 92,000 heads per year and prices peaked at US\$268/head in 2001 but declined to US\$163/head in 2004. Exports of sheep have declined from 2.2mi heads in 2000 to 1.2 mi heads in 2004. Exports are dominated by Sudan which in 2000 accounted for 23% but by 2004, it accounted for 91% of exports. Prices have been on the increase from US\$32/head in 2001 to US\$72/head in 2004.

Observations on the trend in trade showed that it was very susceptible to outbreaks of diseases like RVF which forces the importing countries to place bans on exports. This can be illustrated by the case of Sudan - the major exporter of camels and sheep. In the case of camels, exports dropped from 61,400 heads in 2000 to zero in 2001 while in the case of sheep, exports declined from 584,000 heads to zero during the same period. This implies the need for more emphasis on disease control and development of quarantine and disease free zones. Demand for animals from Eastern Africa is high because they are grazed naturally and considered 'organic' in some countries.

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Promotion of export trade requires a coordinated effort in the control of transboundary animal diseases (TADs) because of the porous borders. A disease outbreak in one country is interpreted as also affecting other countries due to livestock movement. The regional organizations like EAC, IGAD and COMESA should have projects on TADs control.

6.1.3 Kenya's Export of Live Animals

6.1.3.1 Export Performance

Kenya is a comparatively small exporter of live animals. This is because the country's demand for meat exceeds the supply and the prices of livestock and meat are higher than in the surrounding countries. Projections in the National Development Plan (GOK 2002) show that the country will be experiencing deficits in beef, mutton and camel meat and will only have a surplus in goat meat as shown in table 6.

Considering the average export prices realized between 2000-2004 of US\$232 and an exchange rate of Kshs.77 = 1US\$) the average export price would have been Kshs.17,910 which was equal to Nairobi market price for cattle. A comparison of prices in Somalia, Ethiopia, Sudan and Kenya is shown in table 82:

Country	Price per head (Kshs.)	Price difference (Kshs.)
Somalia	11,000 – 14,000	7,000 – 8,000
Ethiopia	12,000 – 19,000	6,000 – 3,000
Sudan	9,000 – 11,000	9,000 – 11,000
Kenya (Nairobi)	18,000 – 22,000	-

Table 82: Cattle Price Comparisons in Neighbouring Countries – 2004

The figures show that traders could realize a price differential of between Kshs.3,000-11,000/head by selling in Kenya. The export price in 2004 was US\$163/head or about Kshs.12,551/head implying traders in surrounding countries would realize a margin of Kshs.551-Kshs.3,551/head by exporting compared to margins in table 81.

In the period between 1996 to 2000, Kenya exported 750 heads of cattle but 645 heads were exported in 1996/1997 while between 2000 and 2004, exports were 556 heads with 463 heads exported in 2004. During the period 1996-2000, the country exported 1,214 goats with 735 heads exported in 1996/97 and 450 heads in 2000. From 2000, Kenya has exported 1,550 heads of which 1,500 were exported in 2004. During the period, Kenya only exported 60 live sheep in 2004 but since then it has exported over 10,000 cattle and goats to Mauritius through LTMS-K.

6.1.3.1 Kenya Cattle Export Value Chain

Since 2004, there has been renewed effort in exporting camels to Middle East and cattle and shoats to Mauritius. Between 2000 and 2004, Mauritius average annual imports were 12,000 heads of cattle, 5,000 heads of goats and about 1,300 sheep. Cattle for export are mostly from ranches at the coast. The ranch gate price was Kshs.22,750/350 kg animal (Kshs.65/kg live weight). Export movement permit was Kshs.1,000/consignment. Animals were held in export holding ground for two days at a cost of Kshs.10,000 per consignment. Herders are paid Kshs.20,000 for two

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days. At the holding ground, cattle are inspected at Kshs.100/head. Custom charges for documentation are at Kshs.1,000/consignment while clearing agents charge Kshs.150,000/consignment. Port handling charges were US\$2/head (Kshs.140/head) while feed for consumption is charged at Kshs.446/head. Using these figures and assuming a 500 heads consignment, the export value chain for cattle to Mauritius is as shown in table 84 and Figure 37:

Cost Item	Kshs./head
Farm gate price (350kg)	22,750
Movement permit (Kshs.1,000÷500)	2
Herders	40
Feed in holding ground	20
Vet inspection	100
Clearing agent	300
Customs documentation	2
Port handling charge	140
Feed during freight	446
Export price	23,800
Average Export price (2004) for 10 countries	39,284*
Margin (including freight)	15,484
Gross margin	39.4%

Table 83: Export Market Value Chain (500 heads)

*See Table 6.9

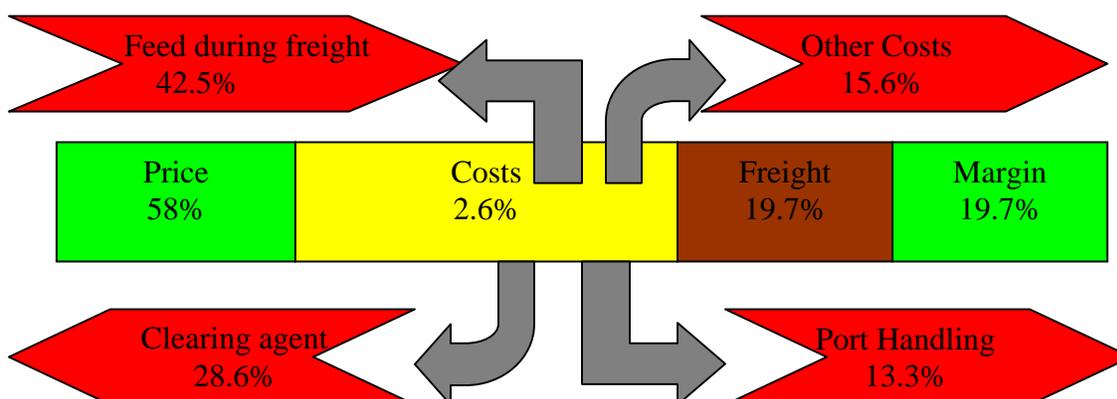


Figure 37: Estimates of an Export Value Chain

The value chain is based on the assumption that the difference between the export price and the average import price was composed of freight, insurance, port charges at terminal port and the importers margin. Freight and insurance were assumed at 50% of the difference. It is noted that the exporter realized 58% of import price, export costs accounted for 2.6%, freight for 19.7% and the importer's margin at 19.7% of import price.

6.2 Middle East, North Africa and Mauritius Markets

The most important importers of East African live animals are Libya and Egypt in North Africa, Middle East countries (Bahrain, Jordan, Iran, Oman, Qatar, UAE, Saudi Arabia and Yemen) and Mauritius. Egypt is the most important importer of camel and cattle while Oman, UAE and Yemen are the major importers of goats. Saudi Arabia is the most dominant in imports of sheep.

6.2.1 General Principles of the Arab States Import Requirements for Live Animals and Meat

The following conditions relate to cattle/beef. Conditions for the export of small stock and its meat follow the same principles with the nature of the diseases etc relating to the nature of the animals. (Agrisystems 2003)

- 1 The animals must come from a country/zone which is not under a sanitary ban and where FMD, Rinderpest, PPR, CBPP and RVF are notifiable.
 - 2 No case of RVF must have occurred in the country/zone for three months prior to shipment.
 - 3 The country/zone must be free from Rinderpest or routine preventative vaccination is carried out.
 - 4 FMD, Rinderpest and PPR must not have occurred within 10km of production/holding zone for a period of 3m (FMD) or three weeks (others).
 - 5 The animals must have been kept for at least one month before quarantine where specified livestock diseases have not occurred for a specified period e.g. FMD must not have occurred for 3 months before the one month period of holding.
 - 6 Animals must be kept in quarantine for 30 days prior to shipment. Animals must be dispatched directly to quarantine from holding grounds, examined before entry to quarantine for clinical signs of disease, the quarantine station and an area of 10km around it is disease-free.
 - 7 Exported animals must have laboratory tests with negative results for FMD and any other diseases requested by the importing country.
 - 8 The animals must be vaccinated against FMD at time of entry and 20 days after entry into quarantine. A specified vaccination programme for Rinderpest, PPR and RVF must be followed.
 - 9 Animals must be treated against external parasites at time of entry into quarantine and kept protected. Wounds must be treated against myiasis at the beginning and end of quarantine
 - 10 Animals must show no sign of contagious disease at the time of shipment. Animals are not to be destroyed under a national disease eradication programme
 - 11 Animals must not have been fed with ruminant meat and bone meal and were not treated with growth factors
 - 12 Meat must have been derived from animals slaughtered in an approved abattoir, designated for export and under regular veterinary supervision, fully eviscerated and deboned, chilled to $>2^{\circ}\text{C}$ for 24 hours and at least $\text{pH} < 6.0$, processed under hygienic conditions considered fit for human consumption, processed to ensure destruction of FMD and Rinderpest viruses.
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6.2.2 Imports and Prices of Camels in Importing Countries

Egypt is the major importer of camels with Saudi Arabia, Qatar, UAE and Oman as other significant importers. Between 2000 and 2004, Egypt's annual imports averaged at 65,373 camels. In 2004, it accounted for 56% of camel imports in Middle East as shown in table 84:

Country	2000	2001	2002	2003	2004	Average
Egypt	61,354	99,651	77,284	48,867	397,111	65,373
Bahrain	41	0	0	5	7	7
Libya	1,800	1,800	0	1,214	981	1,449
Oman	0	0	5,327	8,114	5,072	4,504
Qatar	417	10,331	4,568	541	8,281	4,828
S. Arabia	0	6,175	0	0	10,160	8,168
UAE	0	0	170	0	6,388	3,279
Average	63,612	117,957	87,349	58,741	70,597	
% Egypt	96%	84%	88%	83%	56%	

Table 84: Camel imports in North Africa and Middle East

It is noted that Egypt and Qatar were the only consistent importers. Egypt's share has declined from 96% of import in 2000 to 56% in 2004. In considering exports to Egypt, Kenya is disadvantaged as it would have to ship by sea while Sudan the major exporter treks camels across the common border.

Import prices varied by country depending on the mode of transport and consumer preference for type of camel as well as purpose (breeding, sport or slaughter). The import values and unit prices are given in table 85:

Country	2000	2001	2002	2003	2004	Average
Egypt						
Value (000)	12,186	26,861	20,617	10,625	7,745	
Unit (\$)	199	270	267	217	195	230
Libya						
Value (000)	1,620	1,620	0	449	643	
Unit (\$)	900	900	0	370	655	706
Oman						
Value (000)	0	0	3,768	5,867	8,422	
Unit (\$)	0	0	707	723	1,660	1,030
Qatar						
Value (000)	299	6,984	1,823	218	4,240	
Unit (\$)	717	676	399	403	512	541
S. Arabia						
Value (000)	0	2,628	0	0	3,226	
Unit (\$)	0	426	0	0	318	372
UAE						
Value (000)	0	0	43	0	3,942	
Unit (\$)	0	0	252	0	617	435
	605	568	406	426	659	

Table 85: Import Value (\$000) and Unit Prices (\$/head) of Camels

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There is a wide import price variation ranging from US\$195/head in Egypt to US\$1,660/head in Oman for 2004. Egypt's case was explainable in that most camels are trekked across the border from Sudan but the Oman case seems far above the normal. The price in Saudi Arabia, the second largest importer, seems closer to normal as the 2004 price would translate to Kshs.24,486/head which was about 22% above the Somali camel prices.

6.2.3 Cattle Imports and Prices

Among the countries considered, Egypt, Jordan, Yemen and Mauritius were the major importers. Imports were 415,827 heads in 2000 but declined to 164,409 by 2003 but picked up to 267,358 by 2004 as shown in table 86:

Cattle Imports - Qty (Head)	2000	2001	2002	2003	2004
Bahrain	1,967	4,682	8,146	6,143	5,982
Egypt	233,524	239,248	152,870	34,417	50,000
Iran, Islamic Rep of	0	0	0	119	575
Jordan	33,947	39,786	40,202	34,775	65,140
Libyan Arab Jamahiriya	13,002	1,975	3,000	9,668	3,289
Mauritius	12,211	10,789	12,233	12,107	12,600
Oman	318	0	2	1,210	453
Qatar	636	725	199	475	211
Saudi Arabia	336	13,608	38,869	13,581	159
United Arab Emirates	35,450	2,000	4,592	5,530	3,015
Yemen	84,436	1,112	482	46,384	125,934
TOTAL	415,827	313,925	260,595	164,409	267,358

Table 86: Cattle Imports in Middle East and Mauritius

Egypt accounted for 56% imports in 2000 but its share had declined to 19% by 2004. Cattle from Kenya would face serious competition from Sudanese exports in the Egyptian market. A similar situation also arises for Jordan where Sudan already exports meat. Mauritius imports an average of 12,000 heads per year and this figure has been constant. Kenya has entered this market in the last two years but it has faced competition from Ethiopia, Somalia and Sudan. Kenyan beef is considered 'organic' and Kenya should promote this concept to create a larger export share. Yemen is the other major importer with livestock moving forward to Saudi Arabia. Yemen did not have strict veterinary regulations and so attracted considerable imports for unofficial export to Saudi Arabia but with strict regulations in most of Middle East, this market might lose its attractiveness. However, in 2004, it accounted for 47% of total imports to the region.

Import values for the eleven countries indicated that the total value of cattle imports declined from US\$214.5mi in 2000 to a low of US\$66.4mi in 2003 but since then, it has started to rise as shown in table 87:

Cattle Imports - Value (000\$)	2000	2001	2002	2003	2004
Bahrain	1,828	3,447	5,470	3,920	4,043
Egypt	146,565	134,132	76,607	12,750	20,000
Iran, Islamic Rep of	0	0	0	54	145
Jordan	17,317	17,147	16,716	15,649	20,032
Libyan Arab Jamahiriya	9,517	430	1,300	2,647	926

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Mauritius	7,493	4,852	7,285	8,581	9,774
Oman	210	0	1	801	709
Qatar	428	922	123	337	138
Saudi Arabia	328	7,736	19,477	8,114	81
United Arab Emirates	15,930	1,900	3,405	4,738	2,426
Yemen	14,920	224	97	8,698	20,071
TOTAL	214,536	170,790	130,481	66,400	78,344

Table 87: Value of Cattle Imports to Middle East and Mauritius

The decline in value was mostly due to the decline in importation due to the ban on imports in most countries as a result of Rift Valley Fever (RVF).

Import prices varied from country to country with highest being Qatar at an average price of US\$785/head during 2000 to 2004 and lowest being Yemen at US\$185/head during the same period. As noted earlier, Yemen had no stringent rules on imports and was possibly getting poor quality animals for unofficial cross-border trade to Saudi Arabia. Average import prices have declined from US\$632/head in 2000 to US\$508/head in 2004 as shown in table88:

	2000	2001	2002	2003	2004	
Bahrain	929	736	671	638	676	730
Egypt	628	560	501	370	400	492
Jordan	510	510	416	450	308	439
Libyan Arab Jamahiriya	732	218	433	274	282	388
Mauritius	614	450	596	709	775	629
Qatar	673	1,271	618	709	654	785
Saudi Arabia	976	568	500	597	509	630
United Arab Emirates	449	950	742	857	805	761
Yemen	178	201	201	187	159	185
Average	632	607	520	532	508	
Kshs *	49,319	47,710	40,415	40,506	39,284	

Table 88: Import prices in some selected Middle East countries

*Kshs. Calculated at prevailing dollar rates

Kenya exports to Mauritius and prices have been stable averaging at US\$629/head. In 2004, Kenya exported 463 heads of cattle while the import price was US\$775/head equivalent to Kshs.59,942/head. The selling price of a well-finished animal was Kshs.22,750/head plus an additional Kshs.1,050 for export-related activities adding up to a total of Kshs.23,800/head. Assuming a freight/insurance charge of 50% of final import price this would add up to Kshs.18,071/head totaling to Kshs.41,871/head c.i.f Port Louis. This would have given the exporter a margin of Kshs.18,071/head or a margin of 30% landed costs.

6.2.4 Goats Imports and Prices

In 2004, the largest importers of goats were Bahrain, Oman, Saudi Arabia, UAE and Yemen. Mauritius only imported 5,448 goats. These major countries are analyzed below. The total imports are as given in table 89:

Goats Imports - Qty (Head)	2000	2001	2002	2003	2004
Bahrain	1,661	295,531	417,499	332,101	333,686

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Egypt	10,074	0	0	0	0
Jordan	656	1,181	68,291	124,803	90,175
Libyan Arab Jamahiriya	4,016	4,016	0	1,380	0
Mauritius	6,915	4,581	5,572	2,380	5,448
Oman	750,404	1,113,813	754,607	850,310	961,816
Qatar	172	1,615	988	7,761	13,057
Saudi Arabia	1,094,258	28,543	245,520	237,749	244,111
United Arab Emirates	0	0	186,108	407,386	815,152
Yemen	0	0	0	0	814,985
TOTAL	1,868,156	1,449,280	1,678,585	1,963,870	3,278,433

Table 89: Imports of Goats in Middle East and Mauritius

It is noted that goats' imports declined from 1,868,156 heads in 2000 with Saudi Arabia accounting for 59% to 1,449,280 in 2001 when Oman was the dominant importer accounting for 78% of imports. Since then, imports have been on the increase reaching 3,278,433 heads, a 75% increase over 2000 imports. Oman, UAE and Yemen dominated the imports accounting for 79% of imports.

The value of imports rose from US\$47.2 mi in 2000 to US\$123.5 mi in 2004 an increase of 161%. This was due to increased importation by Bahrain, UAE, Oman and Yemen as shown in table 90:

Goats Imports - Qty (Head)	2000	2001	2002	2003	2004
Bahrain	124	11,883	17,348	14,192	16,092
Egypt	653	0	0	0	0
Jordan	35	129	6,014	11,237	8,415
Libyan Arab Jamahiriya	1,385	1,385	0	94	0
Mauritius	391	230	387	327	731
Oman	24,800	30,588	27,699	30,617	26,260
Qatar	24	62	65	530	1,072
Saudi Arabia	19,801	1,148	19,069	19,187	24,011
United Arab Emirates	0	0	11,925	15,732	25,256
Yemen	0	0	0	0	21,707
TOTAL	47,212	45,425	52,658	91,916	123,544

Table 90: Value of Goats imports in Middle East and Mauritius

Import prices varied by country, the lowest being in Yemen at US\$27/head and highest in Mauritius at US\$134/head and averaging at US\$56/head across the countries in 2004. Average prices rose from US\$47/head in 2000 to a peak of US\$63/head in 2002 but declined to US\$56/head in 2004 as shown in table 91:

	2000	2001	2002	2003	2004	Average
Bahrain	74	40	42	43	48	49
Jordan	53	109	88	90	25	73
Mauritius	56	50	69	137	134	89
Oman	33	27	37	36	27	32
S. Arabia	18	40	78	81	98	63
UAE	0	0	64	39	31	45
Yemen	0	0	0	0	27	27

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	47	53	63	61	56	55
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Table 91: Import prices for goats in selected countries

Mauritius imports an average of about 5,000 heads per year and due to imports in small consignments freight is high resulting in high c.i.f. prices. Kenya can exploit this high price market despite competition from neighbouring countries. Prices are low in Oman and Yemen as a result of re-export to other countries in the region at a higher price.

6.2.5 Sheep Imports and Prices

Kenya has an estimated 10 million sheep compared with Ethiopia's 17 million and Sudan's 48mi and these competitors have been marketing live sheep for a long time to the Middle East. In 2004, the major importers were Saudi Arabia, Jordan, UAE and Oman. Saudi Arabia has dominated the imports in all years as shown in table 92:

Sheep Imports - Qty (Head)	2000	2001	2002	2003	2004
Bahrain	356,823	136,003	38,808	82,931	31,705
Egypt	317,639	147,542	68,195	119,018	0
Iran	3,880	0	0	0	0
Jordan	609,643	632,220	494,022	575,936	812,860
Libyan Arab Jamahiriya	0	247,894	5,320	10,340	1,426
Mauritius	2,200	138	1,910	300	1,865
Oman	499,377	460,803	488,592	328,612	332,985
Qatar	524,387	493,657	507,298	441,894	329,488
Saudi Arabia	4,170,944	2,389,253	5,342,806	4,333,486	2,379,159
United Arab Emirates	817,000	690,000	827,815	240,333	284,414
Yemen	166,069	46,510	610,945	669,867	32,647
TOTAL	7,467,962	5,244,020	8,385,711	6,802,807	4,206,220
% Saudi Arabia	56	46	64	63	57

Table 92: Sheep Imports in Middle East and Mauritius

It was noted that imports peaked at 8.4mi heads in 2002 when Saudi Arabia imported 5.3mi but have declined to 4.2mi heads in 2004 due to a drastic decline in Saudi Arabia imports. Mauritius, where Kenya has been trying to penetrate the market, is not a major market with imports fluctuating on a yearly basis.

The value of imports rose from US\$353.4 mi in 2000 to a peak of US\$606 mi in 2002 then declining to US\$350 mi in 2004 reflecting the decline in Saudi Arabia imports as shown in table 93:

Sheep Imports Value (000\$)	2000	2001	2002	2003	2004
Bahrain	20,788	10,116	4,434	5,552	3,395
Egypt	15,047	6,906	2,996	4,523	0
Jordan	27,741	27,718	20,869	24,744	32,365
Libyan Arab Jamahiriya	0	5,500	150	237	32
Mauritius	107	9	122	62	251

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Oman	19,073	20,707	16,007	16,399	21,175
Qatar	32,063	28,729	38,658	32,571	32,043
Saudi Arabia	214,765	143,741	458,581	351,162	241,469
United Arab Emirates	18,800	20,000	47,419	11,040	18,276
Yemen	5,035	1,374	16,797	18,120	940
TOTAL	353,419	273,791	606,033	464,410	349,946

Table 93: Value of Sheep Imports in Middle East and Mauritius (US \$ 000)

Import prices were calculated for Bahrain, Jordan, Oman, Qatar, Saudi Arabia and UAE. Mauritius, although a minor importer, is included as Kenya has shown interest in the market. The import prices are shown in table 94:

	2000	2001	2002	2003	2004	Average
Bahrain	58	74	114	67	107	84
Jordan	46	44	42	43	40	43
Oman	38	45	33	50	26	38
Qatar	61	58	76	74	97	73
S. Arabia	52	60	86	81	101	76
UAE	23	29	57	46	64	44
Mauritius	49	65	64	207	134	104
	47	54	67	81	81	66

Table 94: Sheep import prices in Middle East and Mauritius

Trend prices and cross-country prices average at US\$66/head but vary by year and country. Trend prices have risen from US\$47/head in 2000 to US\$81/head in 2004. The high prices are explained by extremely high prices in Bahrain, Saudi Arabia and Mauritius

Saudi Arabia prices are more representative because of the large imports handled while the prices in Mauritius especially in 2003/2004 are not representative because of small imports handled. Kenya can aim at penetrating the big markets to be able to enjoy economies of scale in large consignments but can still explore the Mauritius market for small consignments if freight charges are competitive.

6.2.6 Lesson Learnt in Analysis of Exports of Live Animals

On the **supply side**, various lessons can be identified:

- Kenya has not undertaken a livestock census since 1969 and population figures are just estimates
- Kenya imports about 25% of its meat on the hoof from bordering countries due to its high demand for meat
- Projections of livestock numbers and demand for meat show that Kenya will be deficient in cattle, sheep and camel meat.
- Kenya has been a very minor exporter of live animals due to high local demand.

These observations imply that the country has to put in place a comprehensive livestock development plan for ASAL areas if it has to participate actively and consistently in the export of live animals.

On the **demand side**, the lessons learnt include:

- The Middle East is a potential market for Kenya, but the country will face competition from long established exporters like Sudan, Ethiopia and Somalia.
-

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- Northern Africa importers like Libya and Egypt may not offer a large market opportunity as Kenya cannot compete effectively with Sudan and Ethiopia.
- Mauritius is a comparatively small market but because of its high prices it should be promoted
- Middle East countries have put in place stringent regulations on export of animals and the Kenyan Government should strengthen disease control, quarantine and disease free zones.
- Market information, especially prices in importing countries should be made available for effective negotiations in export trade.

6.3 Potential for Export of Meat to Middle East

The main requirement for meat exports to Middle East is **for animals to be slaughtered in an approved abattoir, under veterinary supervision, deboned and chilled to >2°C for 24 hours and at least pH <6.0 and processed to ensure destruction of FMD and Rinderpest viruses.** In the region, Sudan is exporting to Jordan, Saudi Arabia, UAE and Bahrain while Ethiopia exports to UAE. Other major exporters in Africa are South Africa, Botswana, Zimbabwe and Swaziland.

6.3.1 Meat Exports from Africa

6.3.1.1 Total Meat Exports and by Categories of Meat

Africa's production of all meats in 2005 was estimated at about 12 million MT (FAOSTAT 2006) with Egypt accounting for 12%, Nigeria for 9%, South Africa for 16%, Sudan for 6%, Ethiopia for 5%, Algeria 5%, Morocco 5% and Kenya for 4%. However, total meat exports have been estimated at US\$204 million. The value for major exporters is given in table 95:

Country	2002	2003	2004
South Africa	65,388	67,156	74,935
Botswana	41,306	42,901	46,655
Namibia	26,425	48,122	57,128
Sudan	19,890	23,043	3,484
Zimbabwe	13,618	11,158	7,960
Swaziland	4,289	5,733	4,099
Ethiopia	1,680	6,358	3,750
Kenya	1,380	3,433	5,177

Table 95: Value of exports of all types of meat (US\$000)

The value includes all categories of meat and in Kenya, South Africa and Zimbabwe; it includes a considerable amount of pork and products.

6.3.1.2: Export Value by Major Categories and Main Exporters

The major exporters are in the southern African region where meat processing industries are well developed and certified as of export standard. The exports by various categories of meat are shown in table 96:

Type of Meat	2001	2002	2003	2004
Beef and veal	12,704	10,649	13,590	22,159

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Beef and veal, Boneless	121,327	66,714	87,511	100,937
Beef dried, salted, smoked	494	183	448	610
Meat extracts	402	752	730	3,177
Sausages, beef and veal	2	13	35	23
Homogenized meat	88	131	536	1,209
Goat meat	518	2,029	3,906	3,896
Meat bovine fresh	134,031	77,363	101,101	123,092
Meat sheep fresh	18,465	27,262	38,748	8,353
Mutton and lamb	17,947	25,233	34,842	4,457

Table 96: Value of Exports by Various Categories (\$000)

This classification may include double counting. It is noted that the largest value is for bovine fresh meat and beef veal boneless. Goat meat only accounts for US\$4 mi while sheep and lamb account for about US\$12 mi. Table 97 shows the main countries exporting various categories of meat. In the case of beef and veal, South Africa and Namibia are dominant. They are also dominant in exports of beef, veal boneless together with Botswana. The three countries are also the major exporters of beef preparations while South Africa and Morocco are the major exporters of beef extracts.

Type of meat/main exporter	2001	2002	2003	2004
Beef and Veal				
Botswana				
Chad	800	800	800	800
Namibia	1,603	649	1,413	5,038
South Africa	6,503	6,808	9,200	9,484
Sudan	2,322	566	279	24
Beef, Veal Boneless				
Botswana	90,213	39,816	42,493	40,141
Namibia	24,881	16,583	33,509	47,763
South Africa	5,751	5,877	4,894	10,240
Beef Extracts				
Morocco	235	284	329	382
South Africa	92	344	290	2,752
Beef Preparations				
Namibia	1,638	1,372	2,097	2,097
South Africa	688	453	690	5,289
Botswana	1,573	1,103	24	868
Goat Meat				
Ethiopia	440	1,338	3,459	3,459
Sudan	73	685	416	416
Meat Bovine Fresh				
Botswana	90,828	39,816	42,496	45,108
Namibia	26,484	17,232	34,922	52,801
South Africa	12,254	12,685	140,984	19,724
Sudan	2,390	566	279	241
Swaziland	274	2,020	3,464	1,830
Meat Sheep Fresh				
Ethiopia	480	1,586	6,321	3,474
Namibia	5,254	5,548	7,856	755
South Africa	261	393	1,664	608
Sudan	12,213	19,313	22,724	3,203

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Mutton and Lamb				
Namibia	5,254	5,546	7,855	754
Sudan	12,140	18,628	22,308	2,787

Table 97: Value of Exports by Categories of Meat and Main Countries (US\$000)

Goat meat export is dominated by Ethiopia while Sudan also exports some. Export of meat bovine fresh is dominated by Botswana, Namibia, South Africa, Sudan and Swaziland. Sudan, South Africa, Namibia and Ethiopia are the major exporters of meat sheep fresh while Namibia and Sudan are the major exporters of mutton and lamb.

6.3.1.3 Kenya's Exports of Meat

During the 1960's and 1970's, Kenya, through the fully integrated Kenya Meat Commission (KMC) abattoir, used to export an average of 3,000MT of chilled beef and an annual 11,000MT of canned beef. Since the collapse of KMC (recently re-opened)- the only integrated plant in the country, exports virtually ceased except for pork and products. Some private slaughterhouses have been certified and can export meat but the volume is small. The recent exports are shown in table 98:

Category	2000	2001	2002	2003	2004
Fresh, chilled, frozen	164	1,498	258	1,446	2,445
Beef and veal	48	109	93	181	205
Beef, Veal, Boneless	42	83	124	255	118
Mutton and lamb	47	26	30	20	62
Goat meat	9	0	0	4	5
Pig Products					
Meat	0	1,242	0	898	1,642
Bacon/ham	172	303	255	813	1,149
Sausages	527	451	867	1,139	1,590
Chicken meat	11	34	11	30	275
Duck meat	0	0	0	0	11
Turkey meat	0	0	0	51	118

Table 98: Export Values of Meat Products from Kenya (US\$000)

It is noted that total exports were valued at US\$5.177mi (excluding fresh, chilled frozen which include all categories). Beef based categories of meat only accounted for 6.3% of value, pig products for 84.6%, shoat meat for 1.3% and poultry products for 7.8% of total value of export. With the re-opening of KMC, the exports of beef and shoat meat are expected to increase but this would require KMC to be export certified and have a holding ground/quarantine ground to meet international requirements.

6.3.2 Analysis of Middle East Meat Imports

Many of Middle East and North Africa countries are oil rich and incomes are relatively higher attracting meat imports from European Union, Australia, New Zealand, Africa, Brazil, among others. There is competition between exporters to this lucrative market. With the stringent regulations introduced, the developed countries hold an edge on exports due to their superior disease control. However, African meat is from rangelands and meets the condition that ***"animals must not have been fed with ruminant meat and bone meal and were not treated with growth factors"***.

6.3.2.1 Meat Production, Imports and Exports

Middle East countries have considerable livestock resources and produce meat and re-export some meat. In 2004, total beef production was 1.5mi MT. The major producers were Egypt (39% of total), Iran (22%), Lebanon (3%), Saudi Arabia (1.5%) and Turkey (24%) which produces 90% of production. The value of exports in 2004 was US\$111.3mi with the major exports being UAE (26% of total), Turkey (22%), Jordan (18%) and Saudi Arabia (14%) accounting for 80% of total exports.

Despite the areas own production and imports of live animals, the countries are large importers of meat valued at US\$2 bi. in 2004 as shown in table 98 and figure 38:

Total Meat Imports – Val (000\$)	2002	2003	2004
Bahrain	53,384	47,447	51,176
Egypt	203,525	153,263	183,415
Iran	15,781	60,712	106,332
Jordan	52,989	54,070	80,099
Kuwait	68,655	101,501	133,479
Lebanon	56,538	67,272	81,939
Libya	21,309	14,480	30,332
Oman	90,994	95,211	97,789
Palestine	9,768	14,380	14,535
Qatar	56,968	68,607	64,884
Saudi Arabia	548,353	675,332	714,698
Syrian Arab Republic	336	2,301	1,861
Turkey	74	172	391
United Arab Emirates	321,468	267,786	297,742
Yemen	74,751	101,007	94,853
Total Imports	1,574,893	1,723,541	2,048,267

Table 99: Value of Meat Imports in Middle East and North Africa (US\$000)

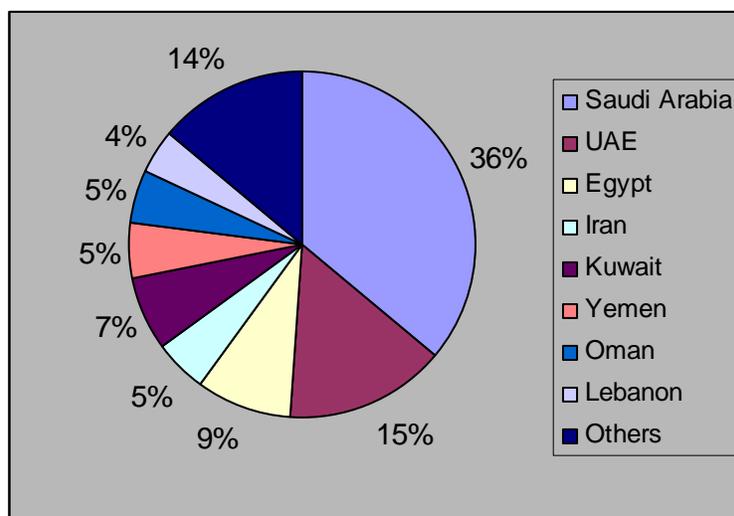


Figure 38: Value of Meat Imports by Major Middle East Countries

In 2004, the major importers included Saudi Arabia (36% of total), UAE (15%), Egypt (9%), Iran (5%), Kuwait (7%), Yemen (5%), Oman (5%) and Lebanon (4%). These countries imported 86% of total meat exports. Saudi Arabia, UAE and Kuwait the oil rich countries, accounted for 58% of imports.

6.3.2.2 Meat Imports by Categories of Meat

Meat imports by category of meat were analyzed for 2004 as shown in table 100 and figure 39:

Category of Meat	Value (US\$000)
Beef and Veal	45,691
Beef and Veal Boneless	521,049
Beef dried salt smoked	5,507
Meat extracts	366
Sausages of beef and veal	5,349
Beef preparations	21,571
Homogenized meat preparations	4,300
Goat meat	18,019
Meat Bovine Fresh	598,909
Meat sheep fresh	249,220
Mutton and lamb	231,181
All other (Camel, buffalo, others)	347,105
	2,048,267

Table 100: Meat Imports by Category of Meat (US\$000)

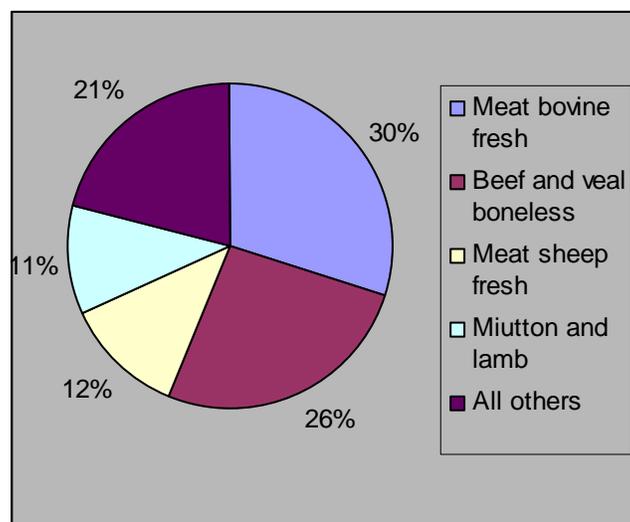


Figure 39: Meat Imports by Type

It is noted that meat bovine fresh (30%), beef and veal boneless (26%), meat sheep fresh (12%), mutton and lamb (11%) and all other categories account for 21% of all meat imports. Major importers of beef and veal were Kuwait, Oman, UAE, Saudi Arabia and Bahrain which accounted for 86% of imports. This category of beef has registered a decline in the four year period. Imports of beef and veal boneless have been on the increase and Egypt, Saudi Arabia, Iran, Lebanon and Yemen are major importers accounting for 88% of imports. Major exporters of beef dried and salted are Lebanon, Oman and Qatar which account for 88% of imports. However, this category registered decline in imports. Saudi Arabia accounts for 83% of imports of meat extracts but in 2004 imports were only 20% of 2000 imports. Imports of beef sausages have also been on the decline while imports of beef preparations have been on the increase.

Imports of goat meat were only US\$4.15 mi in 2000 but had increased to US\$18.0mi by 2004 with Libya, Saudi Arabia and UAE accounting for 88% of imports. The highest category of meat imports was meat bovine fresh which accounts for 30% of all imports. The largest importers are Egypt (30%), Saudi Arabia (22%) and Iran (15%) which account for 67% of imports. Meat sheep fresh is popular and accounts for 12% of total imports with Saudi Arabia and UAE accounting for 66% of imports. Imports of mutton and lamb have also been on the increase and Saudi Arabia and UAE account for 66% of imports.

6.3.2.3 African Meat Exports in Relation to Middle East Imports

The value of meat exports from Africa is relatively small compared to Middle East for the popular categories of meat. Comparing the figures in Table 6.16 and 6.20, the percentage of African meat exports to Middle East exports is as shown in table 101:

Category of Meat	All African Exports as % of Middle East Exports
Beef and Veal	48.5
Beef and Veal boneless	19.4
Beef dried and salted	11.0

Meat extracts	75.7
Sausages of beef and veal	4.3
Homogenized meat	28
Goat meat	21.6
Meat bovine fresh	20.6
Meat sheep fresh	3.4
Mutton and lamb	1.9

Table 101: Percentage of African Exports to Middle East

The percentages show that if all African meat exports were to Middle East, it would only have a market share of 2%-48% of imports. Only in the case of beef extracts does Africa export about 7 times more than the Middle East imports. The implication is that African countries and especially those on the eastern coast can aggressively address the Middle East market emphasizing the concept of '*rangeland-fed*' animals so as to compete with meat from EU, Australia, New Zealand and other countries.

6.4 POTENTIAL FOR EXPORT OF MEAT TO THE EUROPEAN UNION

The EU is a major meat producer, importer and exporter of meat. In 2004, EU imported meat valued at US\$30.5 billion and exported meat valued at US\$32.05 billion, implying considerable local production to meet the highest level of per capita meat consumption in the world. The countries apply stringent rules for export involving trade barriers, non-trade barriers and quota systems to protect the local beef industries. This is however being relaxed through the reform of Common Agriculture Policy (CAP) and requirements for open trade through the World Trade Organization (WTO).

6.4.1 European Union Imports and Trade Regulations

The EU has maintained beef prices at very high prices through protectionist measures based on non-tariff barriers (NTB) and tariff barriers (TB). However, these have been increasingly reformed through various EU protocols, various WTO negotiation rounds, negotiations with African Caribbean Countries (ACP) through LOME and Cotonou Agreements, reforms of the EU Common Agriculture Policy (CAP) and the currently on-going Economic Partnership Agreements (EPA) and Everything but-arms (EBA protocol for poorest countries).

6.4.1.1 Basic Regime and Trade Barriers

The CAP was aimed to implement policy instruments to protect EU farmers and maintain high prices through:

- Intervention prices which were floor prices to which if prices fell below, their beef was bought by intervention agencies and maintained as stocks
- Export subsidies which were given if world prices were below EU prices
- Import tariffs set to prevent imports being sold below EU prices
- Direct payments to cushion EU farmers against CAP reforms
- Supply controls not to produce certain commodities and paid for not produced

These policies were protectionist and are being gradually dismantled under WTO agreements and CAP reforms. The current system of CAP reform is to move from direct payment to aid for agricultural production due to reduction in intervention prices by bringing them to world price levels. This would encourage export.

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In order for EU to maintain high prices, it maintains high tariffs and specific taxes/MT. Under GATT Uruguay Round, the tariffs were reduced as shown in table 102:

Category	Tax	Base Rate (%)	1995 Level (%)	2000 Level	% Reduction
Live Animals	Ad valorem	18	15	10.2	36
	Specific Ecu/t	1454	1367	931	36
Beef	Ad valorem	20	18.8	12.8	36
	Specific Ecu/t	2763	2597	1768	36

Table 102: EU Tariff on Live Animals and Products

It is noted that there is tariff escalation increasing from live animals to processed products. Currently, the beef import tariff stands at 12.8% as ad valorem tax and ECU 1768/MT.

Trade regulations between EU and ACP started in 1975 under the LOME Convention (Lome I-IV) offering ACP countries preferential treatment, zero-rating most of ACP exports to EU. This was replaced by the Cotonou Agreement expiring in 2008 to be replaced by EPAs based on progressive and reciprocal removal of trade barriers being currently negotiated but to come into place after 2008.

Under the European Beef and Veal Protocol, ad valorem taxes were abolished for ACP countries and specific quotas were set for traditional suppliers as shown in table 103:

Country	MT
Botswana	18,916
Namibia	13,000
Zimbabwe	91,000
Madagascar	7,579
Swaziland	3,363
Kenya	142
Total	52,100

Table 103: Quota Allocation by EU for Beef

These quotas were set in 2000 for chilled and frozen de-boned beef/veal. They were based on the potential to supply. Kenya, despite its low quota of 142MT, has not been able to supply because of lack of supply and some non-trade barriers (NTBs) discussed below.

6.4.1.2 Non-Trade Barriers (NTBs)

The WTO has set the Sanitary and Phytosanitary measures called SPS agreement in which it recognizes the Office of International Epizootics (OIE) to set appropriate standards for animal health. The EU concern is for 'Class A' diseases which are transmissible and can spread rapidly. These include rabies, FMD, sheep and goat pox, anaplasmosis, theileriosis, African swine fever and new castle disease. Three other diseases are also included (rinderpest, CBPP and BSE). In the case of food safety, the Codex Alimentarius commission the standards jointly administered by WHO and FAO. These diseases are of particular importance to Kenya due to the porous borders creating the potential threat of transboundary animal diseases (TADs).

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In recent years, European importers have come up with other NTBs notably HACCP (Hazard Critical Control Points) and GMP (Good Manufacturing Practices) for slaughterhouse operations so that they can be export-rated. At production level, EUREPGAP (European Retailers Protocol on Good Agricultural Practices) has been introduced to monitor use of chemicals and ensure traceability of meat to origin. With most of Kenyan meat produced in rangelands under nomadic pastoralism, traceability may not be operational.

6.4.2 EU Production, Exports and Imports of Meat

EU countries produce about 7mi MT of beef and export about 0.6mi MT annually in addition to importing almost a million tonnes of beef annually. The value of imports was about US\$30.5bn.

6.4.2.1 EU Imports of Meat

All countries in EU import meat on top of their domestic production. Meat importation has been on the increase and the value of imports rose from US\$20.2 billion in 2002 to US\$30.5 bi in 2004 as shown in table 104:

Total Meat Imports (Val (000\$)	2002	2003	2004	% of 2004
Austria	460,887	568,157	695,817	2.28
Belgium	1,028,414	1,366,315	1,590,019	5.22
Cyprus	16,914	18,297	29,338	0.10
Czech Republic	96,732	134,717	291,561	0.96
Denmark	506,171	675,944	859,106	2.82
Estonia	38,784	41,024	41,957	0.14
Finland	82,796	119,811	157,005	0.52
France	2,558,994	3,072,993	3,720,527	12.21
Germany	3,532,672	4,277,434	4,885,467	16.04
Greece	717,538	872,090	1,015,389	3.33
Hungary	74,426	66,446	145,641	0.48
Ireland	349,965	455,815	562,599	1.85
Italy	3,003,483	3,666,339	4,335,995	14.23
Latvia	75,915	106,615	79,009	0.26
Lithuania	27,864	40,479	73,011	0.24

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Luxembourg	110,149	139,304	157,444	0.52
Malta	32,189	42,121	57,756	0.19
Netherlands	1,407,377	2,079,730	2,342,860	7.69
Poland	93,932	106,172	280,546	0.92
Portugal	454,739	590,572	695,651	2.28
Slovakia	57,617	64,477	128,257	0.42
Slovenia	57,857	60,161	87,064	0.29
Spain	715,260	968,195	1,102,624	3.62
Sweden	474,317	623,396	756,188	2.48
United Kingdom	4,222,437	5,323,874	6,372,233	20.92
Total US\$ billion	20,197,429	25,480,478	30,463,064	

Table 104: Value of EU Meat Imports 2002-2004

The major importers are Germany, Italy, UK, Netherlands, France, Belgium, Spain and Greece. These countries account for 83% of total value of imports in 2004 as shown in figure 40:

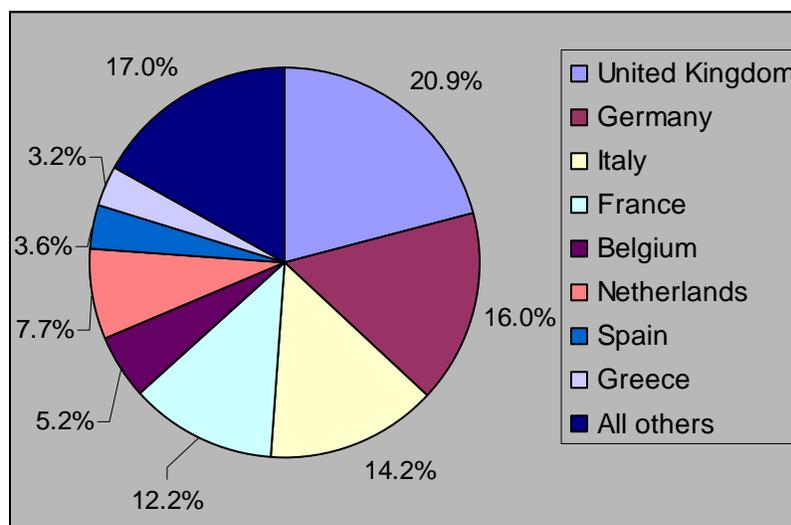


Figure 40: Value of EU Meat Imports 2004

In the past, Kenya used to supply 5% of UK's canned beef market and with the re-opening of KMC, this market segment can be investigated. As Kenya has a quota of 142MT of beef, it can explore other markets to supply its quota.

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6.4.2.2 EU Exports of Meat

In the recent past, EU exports of beef have been affected by outbreaks of BSE and FMD. However, EU beef exports have depended heavily on high levels of export refunds as per CAP agreements. With the reform of CAP and lowering of tariffs as per WTO agreements, the prices may be equivalent to world market prices and more exports could be realized. The export values for EU countries were as shown in table 105:

Total Meat Exports Val (000\$)	2002	2003	2004	% of 2004
Austria	565,214	684,993	821,867	2.56
Belgium	2,449,814	2,776,658	3,388,437	10.56
Cyprus	4,792	5,696	7,466	0.02
Czech Republic	76,668	67,440	132,203	0.41
Denmark	3,440,979	3,817,824	4,452,479	13.88
Estonia	26,417	35,678	33,230	0.10
Finland	72,648	102,991	123,388	0.38
France	2,933,024	3,546,713	3,840,934	11.97
Germany	2,780,758	3,539,299	4,388,452	13.68
Greece	14,260	22,671	30,201	0.09
Hungary	613,148	674,251	725,126	2.26
Ireland	1,588,262	2,007,186	2,365,669	7.37
Italy	1,111,334	1,336,209	1,710,451	5.33
Latvia	4,865	7,814	6,311	0.02
Lithuania	19,280	22,721	38,558	0.12
Luxembourg	31,723	32,816	37,658	0.12
Malta	171	163	735	0.00
Netherlands	3,472,977	4,650,192	5,288,360	16.48
Poland	358,124	611,692	940,113	2.93
Portugal				0.19

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	38,220	43,588	59,628	
Slovakia	11,706	17,346	45,157	0.14
Slovenia	65,528	78,990	91,864	0.29
Spain	1,283,175	1,755,871	2,206,599	6.88
Sweden	99,978	132,659	162,187	0.51
United Kingdom	723,991	953,481	1,186,506	3.70
Total US\$ billion	21,787,056	26,924,942	32,083,579	

Table 105: Value of EU Meat Exports

The major exporters are Denmark, Germany, Netherlands, France, Belgium, Ireland, Spain, Italy and UK which account for 95% of all exports. It is noted that Denmark is the major exporter but it is not among the major importer. The UK which is the main importer consumes most of the meat and only re-exports a relatively small percentage. The exports by major exporters are shown in figure

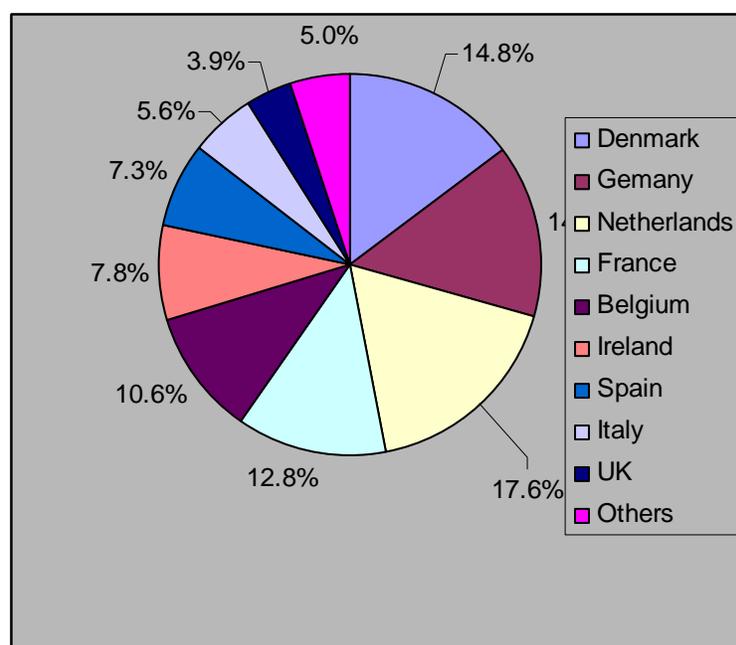


Figure 41: Export Percentage by Major Exporters (2004)

Increased meat exports from EU due to on-going reforms pose a threat to African exporters. Firstly, as EU meat prices fall to world price levels, they will encroach on other markets like the Middle East posing serious competition to African exporters. Secondly, the on-going EPA negotiations argue for reciprocity between EU and ACP countries. This would mean meat from EU can be exported duty free to ACP countries stifling any potential future exports.

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6.4.2.3 EU Meat Imports by Category of Meat

Meat is imported by various categories. Imports of cattle, goat and sheep meat and value-added products has risen from US\$10.3 billion in 2001 to double the amount of US\$21 billion in 2004 and averaged at US\$15.3 billion annually as shown in table 106:

Type of Meat	2001	2002	2003	2004	Average	% Average
Beef and Veal	1,428,002	1,872,339	2,517,296	2,973,795	2,197,858	14.24
Beef and Veal, Boneless	2,153,514	2,998,809	3,912,664	4,996,240	3,515,307	22.77
Beef dried, salted, smoked	25,527	34,963	46,786	75,922	45,800	0.30
Meat extracts	14,027	26,788	27,647	28,022	24,121	0.16
Sausages, beef & veal	0	5,096	5,538	0	2,659	0.02
Homogenized meat	44,702	42,425	53,773	77,381	54,570	0.35
Goat meat	18,334	20,408	24,572	26,578	22,473	0.15
Meat bovine fresh	3,582,461	4,872,485	6,431,177	7,970,035	5,714,040	37.01
Meat sheep fresh	1,362,276	1,499,823	1,824,139	2,101,748	1,696,997	10.99
Mutton and Lamb	1,343,942	1,479,415	1,799,567	2,075,170	1,674,524	10.85
Beef Preparations	374,289	426,173	508,528	650,617	489,902	3.17
TOTAL	10,347,074	13,278,724	17,151,687	20,975,508	15,438,248	

Table 106: Value of EU Meat Imports by Meat Categories (US\$000)

*The values are for cattle, goat and sheep meat and value-added products

The major import categories are meat bovine fresh (37%), beef and veal boneless (22.8%), beef and veal (14.24%) and lamb meat (21.85%) which account for 91% of all import value. Goat meat and other value-added beef products account for 9% of the value of imports as shown in figure 42:

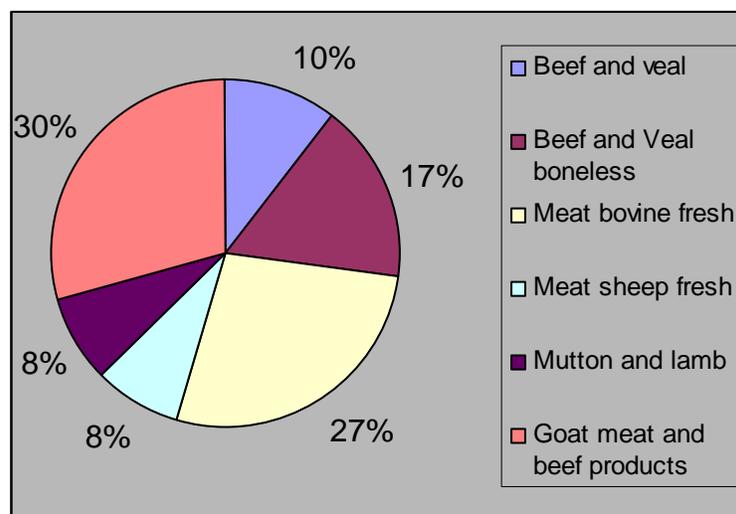


Figure 42: Values of EU Imports by Categories 2004

The major importers of beef and veal are Italy, Netherlands, Greece, France and UK accounting for 96% of imports. In the case of beef and veal boneless, the major importers are UK, Italy, France, Germany and Netherlands accounting for 96% of imports value. Imports of meat bovine fresh are dominated by Italy, UK, France, Netherlands and Germany which account for 99% of import values. France, Belgium, Germany and UK dominate the meat sheep fresh imports accounting for 84% of value of imports while in the case of imports of mutton and lamb, the dominant importers France, UK, Belgium and Germany account for 98% of imports.

6.5 Livestock and Meat Trade and Kenya’s Potential to Export to Middle East EU: A SWOT Analysis

Kenya has some comparative advantage in production of beef/shoat meat for exports. These include: available rangelands, infrastructure which can be rehabilitated, port handling facilities, favourable investment climate and an export market with a quota of 142MT in EU which can be increased.

In terms of a SWOT analysis, the following strengths, weaknesses, opportunities and threats can be cited:

A SWOT Analysis of Livestock and Meat Marketing Sub-sector

STRENGTHS	WEAKNESSES
<ul style="list-style-type: none"> • Only product available to poor pastoralist communities in ASALs (i.e. regular supply and lack of diversification opportunities) • Red meat consumption is relatively high as Kenya has strong red meat eating tradition (pigs and poultry low demand) • Market is demand driven, liberalised within private sector • Slaughter capacity is adequate 	<ul style="list-style-type: none"> • Slaughter and meat handling facilities poorly operated and unhygienic • Whole industry is price inefficient, due to large distances and associated risks (local taxes, insecurity, deaths) & middlemen, traders and brokers taking margins that lead to overpriced meat • Poor veterinary services/disease

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<p><i>for current domestic demand</i></p> <ul style="list-style-type: none"> • <i>Kenya accesses larger regional cattle supplies to balance supply</i> • <i>Back loading of cattle deliveries supports distribution of consumer goods to rural areas</i> • <i>Modern communications and mobile telephones facilitates better communications along marketing chain</i> • <i>Stock routes established north of quarantine line</i> • <i>Trained and experienced veterinarians</i> 	<p>control and loss of export markets, lack of transport for VSD staff and poor motivation</p> <ul style="list-style-type: none"> • Regional cattle supplies can depress local cattle prices due to price differential between Kenya and neighbouring countries • Lack of reliable data on livestock numbers, production and demand • Poor marketing infrastructure (holding grounds and at markets) • Restrictive practices in wholesale/retail butcher chain • Widespread debt problems throughout the marketing chains • Lack of communication between small players and policy makers and lack of strong pressure groups, Lack of MIS system for pastoralists • Ranch output declining due to ranch sub-divisions
OPPORTUNITIES	THREATS
<ul style="list-style-type: none"> • <i>Re-establish export trade of fresh and canned beef and expand production through improved disease control measures</i> • <i>Upgrade hygiene standards and operational efficiency throughout meat chain through training operators and management</i> • <i>Rationalise meat marketing chain to reduce unnecessary intermediary transactions, profits and meat prices and increase consumption</i> • <i>Develop improved data collection activities and data management</i> • <i>Strengthen stakeholder associations, especially pastoralists and slaughterers/meat wholesalers to reduce middlemen's' power</i> • <i>Rehabilitate marketing infrastructure (holding ground, water points)</i> • <i>Develop new national marketing policies and strategies</i> • <i>Improve quarantine stations and increase funds to VSD</i> 	<ul style="list-style-type: none"> • Further demand reduction due to lower purchasing power • Confrontation between vested stakeholder interests • Political interference e.g. KMC distorting local market • Dumping of cattle from neighbouring countries • Severe droughts deplete national cattle and shoat herd • Fluctuations in world prices • Disease control especially TDAs

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<ul style="list-style-type: none">• <i>Establish national task force/forum of all stakeholders</i>	
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Source: Agrisystems (2003), Biamah (2003), Gitu (2005)

7.0 SUMMARY, CONCLUSIONS AND OPPORTUNITIES IN RELATION TO NORTH EASTERN PROVINCE DEVELOPMENT PROGRAMME

Livestock Marketing value chains describe the full range of activities that are required to bring meat to the consumer from production by pastoralists, trekking/trucking by pastoralists/traders to the primary market, marketing and regulatory related costs at the terminal markets, trekking/trucking animals to slaughterhouses or for fattening, slaughterhouse related costs, distribution of meat to butcheries and selling prices to consumers. In the chain there are several stakeholders including pastoralists, assemblers/brokers, trekkers, transporters, municipal and country councils, traders, veterinary personnel, slaughterhouse operators (owners, veterinary inspection and grading personnel), meat transporters, butchers/meat retailers and finally the consumer. Each of these stakeholder aims at getting a profit at each or across segment(s) of the chain.

This summary covers only some aspects of various chains, of relevant to the NEPDP area. In the livestock marketing chain, the summary of livestock marketing operation in Garissa secondary market are given including trekking from interior to Garissa, trekking to ranches for fattening and trucking to terminal markets for slaughter. For the milk marketing chain, the summary covers the Mandera milk marketing with references to Mandera and Wajir markets. In the case of hides/skins, the summary covers the grassroots value-addition of Tegemeo group in Isiolo. Red meat marketing chains summarized include slaughterhouse operators, integrated stock traders/butchers/meat distributors and middlemen meat distributors. In the case of butcheries, summaries are made of four classes of butcheries. The summary of external markets is also given for salient features of the Middle East and EU markets.

7.1 Livestock Marketing Value Chains

The summaries are for North Eastern Province -the area covered by the NEPDP. Analyses for other areas are found in the main report and executive summary. Generally, all livestock marketing value chains have similar cost variables, with variations due to source, distance and mode of transport.

7.1.1 Trekking Livestock to Garissa Market

This includes trekking from Wajir, Somalia/Dinsoor market and Somali/Liboi. The costs are as summarized in table 107:

Trekking Route	Cattle	%	Goats	%	Camels	%
Wajir – Garissa						
A: Purchase Price (Kshs.)	10,200	86.8	900	69.2	17,250	75.8
B: Trekking/Marketing (Kshs)	872	7.4	372	28.6	1,050	4.6
C: Total Costs	11,072	94.2	1,272	97.8	18,300	80.4
D: Selling Price	11,750	100	1,300	100	22,750	100
D – G: Margin	678	5.8	28	2.2	4,450	19.6
Somalia – Garissa						
A: Purchase price	8,000	75.3				

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B: Trekking/Marketing	1,045	9.8				
C: Total Costs	9,045	85.1				
D: Selling Price	10,625	100				
D – C: Margin	1,580	14.9				
Liboi – Garissa						
A: Purchase price	9,625	77.8			19,500	87.6
B: Trekking/Marketing	596	4.8			1,117	5.0
C: Total Costs	10,221	82.6			20,617	92.7
D: Selling Price	12,375	100			22,250	100
D – C: Margin	2,154	17.4			1,633	7.3

Table 107: Summary of costs and margins in trekking livestock to Garissa (Kshs and % of costs/price)

It is noted that the pastoralists in Wajir realized 87%, 69% and 76% of the Garissa selling price for cattle, goats and camels respectively while the Somali pastoralist received 75% of the selling price for cattle. The Liboi/Somalia border pastoralist received 78% and 88% of the Garissa selling price for cattle and camels respectively.

Trekking and marketing costs for livestock originating from Wajir were 74%, 28.6% and 4.6% for cattle, goats and camels respectively while those for cattle originating from Somalia were 9.8%. In the case of cattle and camels originating from Somali/Liboi the costs were 4.8% and 5% respectively. The breakdown of costs is as given in table 108:

	Wajir to Garissa						Somalia to Garissa	
	Cattle	%	Goats	%	Camels	%	Cattle	%
Assembly	9	1.0	9	2.4	9	0.9	8	0.8
Militia	-	-	-	-	-	-	200	19.2
Trade costs	31	3.6	31	8.3	31	3.0	160	15.3
Broker	250	28.7	100	26.9	400	38	300	28.7
County costs	200	22.9	40	10.8	230	22	-	-
Municipal costs	160	18.3	50	13.4	200	19	160	15.3
Vet/Food	3	0.3	5	1.3	5	0.5	6	0.6
Loss	82	9.4	5	1.3	23	2.0	107	10.2
Trekking costs	117	13.4	112	30.1	132	12.6	64	6.1
Feed/Water	20	2.3	20	5.4	20	2.0	40	3.8
Total Costs	872	100	372	100	1050	100	1045	100

Table 108: Breakdown of Trekking and Marketing Costs (Kshs.)

It can be noted that brokers and municipal/council fees account for almost 70% of trading cattle from Wajir to Garissa while militia costs, trader costs and brokers account for 63% of costs for cattle originating from Somalia. Since this link in the chain affects pastoralists and local traders, KLMC should aim at negotiating with municipal/county councils to plough back some money for improvement of marketing infrastructure.

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7.1.2 Trekking Livestock for Fattening in Coast Ranches

This is a value addition activity. Livestock are trekked down Tana River to Coast ranches and fattened for three months. This operation only adds 15% to the purchase price but the trader realizes a margin of 15.2% of selling price as shown in table 109:

Activity	Cost (Kshs./head)	%
Purchase bull/castrate (200kg)	15,000	69.8
County council cess	100	0.5
Municipal council	160	0.7
Branding	5	0.02
Movement permit	100	0.5
CBPP Test	50	0.2
Herding in Garissa – 1 month, 6 herders @ Kshs.2,000/month	40	0.2
Vet costs	100	0.5
Trekking to Voi – 1 month (6 trekkers @ Kshs.600/animal + herding fees	600	2.3
Ranching – Kshs.160/month/3 months	480	2.2
Vet costs in the farm	150	0.7
Herders fees	60	0.3
Transport to slaughterhouse	700	3.5
Cost of marketing	150	0.7
Sub-Total	17,695	82.3
3% loss/mortality	531	2.5
Total Estimated Costs	18,226	84.8
Selling Price	21,500	100
Margin	3,274	15.2

Table 109: Analysis of Trekking and Fattening Operation

This chain is important as it can **incorporate pastoralists directly into value-addition**. This is the basis of the CARE-LIME Garissa project which has organized Pastoralist Production Companies based on water users associations of Alijungur, Shantaabak, Albaqra, Damaka and Gurufa. So far, the groups have marketed 3,172 heads of cattle earning Kshs.27.2 mi. PPCs trek animals to Garissa holding ground for mandatory CBPP vaccination and stay for 3 weeks before transport to Laikipia or Galana ranches for fattening for 2-3 months. CARE charges 5% of the final price to recover costs. The value-addition option is also being practiced by LTMS-K members in finishing for export.

7.1.3 Trucking Livestock for Slaughter in Nairobi

This is the normal option to transport cattle to Nairobi and transport costs account for a major component of costs as shown in Table 110:

Type of Animal	Cattle	%	Shoats	%
A: Purchase Price	16,333	883	1691	76.9
B: Broker	n.a		50	2.3

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C: Branding	4.0	0.02	3	0.1
D: Permit	4.0	0.02	1.4	0.06
E: Transport costs	1,114	6.0	75.0	3.4
F: Loaders	163	0.9	11	0.5
G: Trader costs	142	0.8	9	0.4
H: Off-loading	30	0.2	10	0.45
I: Security/boma	100	0.5	30	1.4
J: Auction fee/other	162	0.9	25	1.1
K: TOTAL COSTS	18,052	97.6	1905	86.6
L: Selling Price	18,500	100	2200	100
M: Net Margin	448	2.4	295	13.4

Table 110: Cost Components in Trucking Livestock to Nairobi

This table illustrates the impact of high transport costs which account for 6% and 65% of selling price and marketing costs respectively. The trader only realizes a margin of 2.4% of selling price for cattle. To mitigate against this low margin, the best option is to use a double-decker transporter (26 cattle and 70 shoats). **KLMC should investigate ways of helping traders with appropriate transport as most lorries used are for general goods and carry few animals making it uneconomical to truck animals.**

7.1.4 Opportunities in Livestock Marketing Chains

Although the above summaries have been done for North Eastern Province, similar opportunities exist in all livestock routes. These are identified as follows:

1. Advocacy by KLMC/DLMC and LTMS-K for county/municipal councils to plough some of the cess collected to the improvement of marketing infrastructure like markets and holding grounds
2. KLMC to organize pastoralists to form Pastoralists Production Companies (PPC) as done by CARE-LIME project in Garissa. These companies can pool their animals for fattening in ranches to realize higher margins. They can contract with buyers for delivery at identified times.
3. Transport is a major cost item in most places. The PPCs together with KLMC/DLMC can analyze opportunities in owning appropriate livestock transport

7.2 Pastoralist Milk Marketing Chain

Three areas were analyzed; Garissa, Mandera and Wajir. The Mandera milk market is summarized as it is more organized. A ten stalls milk market is operated by a women group and milk is collected from agro-pastoralist areas of Ethiopia and areas around Mandera. Milk procurement prices average at Kshs.26.42/litre (Kshs.23.3-28.3/litre). Brokers' costs average at Kshs.1/litre while transport costs average at Kshs.3.0/litre. Other costs include preservation by boiling (Kshs.1.20/litre), minimal packaging (Kshs.0.8/litre), food/storage (Kshs.2.20/litre) and other labour related costs (Kshs.3.0/litre) giving an average cost of Kshs.37.60/litre. Selling prices average at Kshs.47.80/litre (Kshs.46.6 – Kshs.48.8/l) as shown in table 111:

Cost/Price/Margin	Cost (Kshs./Litre)	%
Buying price	26.40	55.2

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Brokers fee	1.0	2.1
Transport	3.0	6.3
Preservation/Boiling	1.20	2.5
Package	0.80	1.7
Food/Storage	2.2	4.6
Other costs/labour	3.0	6.3
Total Costs	37.60	78.7
Selling Price	47.80	100
Margin	10.20	21.3

Table 111: Average cost and margin structure in milk marketing

It is noted that the traders realize net margins of 21% (19.8 – 25.6%) per litre. Higher costs arise at the marketing end due to lack of cold storage facilities. **KLMC/LTMS-K have the opportunities to improve the market infrastructure and storage by advocating for improvement of market stalls and promoting appropriate cold storage facilities like charcoal and paraffin refrigerators.**

7.3 Hides and Skins Marketing Chains

The hides/skins marketing includes collection of raw hides and skins from households, slaughter slabs and slaughterhouses by hides/skins traders. These are then wet salted and sold to rural tanneries or the major tanneries. In Isiolo, a grass roots value-addition operation was studied to illustrate the opportunities. The operation deals with 215 hides/skins per month (10 cattle, 130 shoats and 75 camels). Prices for raw cattle was Kshs.379/piece, sheep Kshs.60/piece, goat skin Shs.90/piece and camel hide Shs.220/hide. The cost of operation was Kshs.12,100 from procurement to transport to tannery at Nanyuki as shown in table 112:

	Cattle	%	Sheep	%	Goat	%	Camel	%
Price/piece	379	48.6	60	51	90	61	220	40.7
Procurement/piece	1.20	0.2	1.20	0.4	1.20	0.5	1.20	0.2
Salt/piece	17.7	2.3	17.7	5.9	17.7	7.1	17.7	3.3
Rent for store	9.3	1.2	9.3	3.1	9.30	3.7	9.3	1.7
Security	1.9	1.2	9.3	3.1	9.3	3.7	9.3	3.7
Other processing costs	13.95	0.2	1.9	0.6	1.9	0.8	1.9	0.4
Transport to tannery	4.20	1.8	13.95	4.7	13.95	5.6	13.95	2.6
Trade costs	436.6	0.5	4.20	1.4	4.20	1.7	4.20	0.8
Total Costs	780	56	117.6	39	147.6	59	277.6	51.4
Selling Price	343.4	100	300	100	250	100	540	100
Net Margin		44	182.4	61	102.4	41	262.4	49

Table 112: Hides and Skins Value Chain (Kshs.)

From these figures, it is noted that rural groups (men or women) can undertake this operation and realize net margins of 44% and 49% for cattle and camel hides respectively and 61% and 41% respectively for sheep and goat skins. **KLMC should**

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identify sources of micro-finance to fund such operations as start-up capital is comparatively low.

7.4 Red Meat Marketing Opportunities

The red meat marketing component of the livestock market chains is the most lucrative component and considerable economic rent is made. Pastoralists as a group/cooperative can enter this component and exploit two key opportunities. One is operating a slaughterhouse as is currently done by LTMS-K at Mombasa Export Slaughterhouse and the second is operating a chain of butcheries in consuming areas.

7.4.1 Pastoralists Operated Slaughterhouse

These can slaughter animals for members and other traders. Due to the capital investment requirement, the slaughterhouse can be operated by a Pastoralist Company or Cooperative. The typical costs and margins for slaughtering are as summarized in Table 113:

COSTS	KSHS/HEAD	%
Buying price (300 kg live weight)	20,000	80.5
Annual Licence	7	0.03
Vet licence	0.2	
Electricity	8.8	
Labour	9	1.4
Other slaughter costs	320	
Water	2.8	
Total Costs	20,348	81.9
REVENUE		
Meat – 150kg @ 150	22,500	
Liver	140	
Offals + feet	1,300	
Head	300	
Hide	610	
	24,850	100
Net Margin	4,502	18.1

Table 113: Average Slaughterhouse Operating Margin for Cattle

It is noted that the pastoralists can obtain 80.5% of revenue from a carcass and the pastoralist company/cooperative obtains a net margin of 18% of revenue. **Based on this, it is important that KLMC mobilizes pastoralists into a company/cooperative where they can buy shares to build finances for running slaughterhouses.**

7.4.2 Opportunities in Operating a Chain of Butcheries

Opportunities exist for a Pastoralist Company/Cooperative to operate a chain of butcheries in Nairobi and Mombasa to realize the high economic rents currently enjoyed by non-pastoralist butchers as illustrated in table 114:

Butchery	Beef Margin	%	Goat	%	Sheep Margin	%
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Category			Margin			
High income	240	100	117	65	211	117
Medium income	90	66	100	71	80	57
Low income	70	53	-	-	-	-
Extra-low	60	50	-	-	-	-

Table 114: Average gross margins in retailing meat in various butchery categories (Kshs/kg and % margin)

The gross margins for beef range from 50% of selling price in the extra low income butcheries to 100% in high class butcheries while gross margins for goats average at 68% in high and medium incomes and those for indigenous sheep at 57% in middle income areas while those for improved/exotic sheep are as high as 117% in high income butcheries. Butchery operations only require deep freezers/cold rooms and refrigerated display equipment as fixed capita while the rest is working capital for rent, utilities, labour and purchase of meat. **KLMC and LTMS K need to analyze this opportunity for pastoralist companies.**

7.5 Potential for Exports of Live Animals to Middle East

- The conditions for export of livestock to Middle East include: free from FMD, Rinderpest, CBPP and RVF, quarantined for at least 30 days before shipment, treated against external parasites and not fed at any time with ruminant meat and bone meal, among others.
- The East African region exports a considerable number of livestock to Near East/N. Africa and Middle East. In 2004, the region exported 36,643 camels valued at US\$6.7mi mostly to Egypt, 135,600 cattle valued at US\$22mi, 850,000 goats valued at US\$24mi and 1.2 mi sheep valued at US\$87mi. Most of the livestock are from Ethiopia, Sudan, Somalia and Djibouti.
- Kenya has been a comparatively minor exporter of livestock. Cattle exports between 1996 and 2000 were 750 heads and between 2000 and 2004 were 556 heads. Between 1996 and 2000, the country exported 1,214 goats and this has risen to 1,500 by 2004. Since December 2003, LTMS-K has exported 8,200 goats and 9,800 heads of cattle to Mauritius. LTMS-K has also started supplying recently opened KMC.
- Camel imports have been dominated by Egypt accounting for 60% of imports. Prices have varied from US\$195-1,660/head and overall Middle East imports were over US\$25mi with the E. African region only accounting for 28% of imports.
- Cattle imports to Middle East totaled at 267,358 heads dominated by Yemen (47%) which has replaced Egypt as the major importer. Prices have declined from US\$632/head in 2000 to US\$508/head in 2004 and the total value was US\$78mi with the East African region accounting for 28% of all imports.
- In 2004, Middle East imported 3.3mi goats with Bahrain, UAE, Oman, Saudi Arabia and Yemen accounting for 87% of imports. The imports were valued at US\$123.5mi of which the East African region accounted for 19% of Middle East imports.
- Middle East imported 4.2mi sheep in 2004 with major importers being Egypt (57%), Jordan (19%), Oman (8%), Qatar (8%) and UAE (7%). The import value was US\$353 with East African region accounting for 24.5% of imports.

7.6 Potential for Meat Exports to Middle East

- In the 1960s and 1970s, Kenya used to export an average of 3000MT of chilled beef and 11,000MT of canned beef and other meat products. Due to the collapse of KMC and the disease free zone system, exports ceased.
- In 2004, Kenya exported meat products valued at US\$5mi of which pork products accounted for 84.6% of exports, poultry products for 7.8%, beef for 6.3% and shoats for 1.3% of total exports. Kenya is such a very minor exporter of meat products.
- The Middle East is a major importer of meat and products and in 2004, imports were valued at over US\$2bi with major importers including Saudi Arabia (36%), UAE (15%), Egypt (9%), Kuwait (7%), Iran, Yemen and Oman (5% each) and Lebanon (4%).
- Of the total imports of US\$2bi, meat bovine fresh accounted for 36% of imports, beef and veal boneless for 26%, sheep meat fresh for 12%, mutton and lamb for 11% and all other categories of meat for 15% of all imports.
- Of all African meat exports to external markets, was exported to Middle East, it would only meet 48.5% of Middle East beef and veal demand, 19% of beef and veal boneless, 21.6% of goat meat, 3.4% of meat sheep fresh and 1.9% of mutton and lamb. This implies the high export potential in the region.
- The Middle East Conditions for imports that "***animals must not have been fed with ruminant meat and bone meals and not treated with growth factors***" favour livestock and meat produced from rangelands.

7.8 Potential for Meat Exports to EU

The EU (25 countries) is the largest importer and exporter of meat. In 2004, the EU imported all categories of meat valued at US\$30.5 bi and exported meat valued at US\$32bi. Salient features of the EU meat market are summarized as follows:

- In the past, EU has maintained high beef prices based on tariff and non-tariff barriers. This has been mostly through the interventions of the Common Agricultural Policy (CAP); floor prices export subsidies, import tariffs, direct payments and supply controls.
 - The EU has also set stringent sanitary and phytosanitary (SPS) standards in relation to diseases like FMD, sheep and goat pox, CBPP, BSE (mad cow disease) among others which have been a hindrance to many exporters.
 - The 2004 value of meat imports was US\$30.5bi of which the major importers were UK (21%), Germany (16%), Italy (14%), France (12%), Netherlands (8%), Belgium (5%), Spain (4%) and Greece (3%) which account for 83% of imports. Kenya used to supply 5% of UK's canned beef market and this market can be investigated.
 - The value of meat exports in 2004 was US\$30.2 billion with Netherlands accounting for 16.5%, Denmark for 13.9%, Germany for 13.7%, France for 12% and Belgium for 10.7%.
 - Imports of cattle, sheep and goat meat were valued at US\$15.4bi in 2004 with beef bovine fresh accounting for 37%, beef and veal boneless for 23%, beef and veal for 14.2%, meat sheep fresh for 11%, mutton and lamb for 11% and goat meat for less than 1%.
 - Under the Lome and Cotonou Agreements and the European Beef and Veal Protocol, some African countries have been allocated quotas as follows: Botswana 18,916MT, Namibia 13,000MT, Zimbabwe 9,100MT, Madagascar 7,579 MT, Swaziland 3,363MT and Kenya 142 MT. Kenya has not met its quota since 2000.
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LIST OF PEOPLE MET

1. USAID-Kenya
 - a) Allen Fleming – Head – ABEO
 - b) Makeda Tsegae – Coordinator – Emergency/NEPAD
2. AU-IBAR
 - a) Sam Muriuki – Coordinator – NEPDP
 - b) Joseph M. Mosabi
 - c) Nathaniel K. Mutugi
 - d) Fredrick Aloo
3. Kenya Livestock Marketing Council
 - a) Mohammed Abbas – CEO – KLMC
 - b) Sarun Ole Oloishona – Accountant
 - c) Palicha G. Wario – Marketing Officer
 - d) Mohammed M. Yusmu
4. MOLFD – Department of Veterinary Services
 - a) Dr. Karitu – Chief Veterinary Hygiene Officer
 - b) Dr. J. Azegele – Public Health Officer (Meat Inspection)
 - c) Dr. M. Mwinyihija – Head of Section – Hides and Skins Section
 - d) Mr. Malala – Hides and Skins Section
- 6: Garissa Traders
 - (a) Hussein Kilas – Cattle Trader
 - (b) Arab Siyat – Cattle Trader – 0722-213403
 - (c) Abdil Kadir – Cattle Trader – 0720-285984
 - (d) Alnoor Hussein – Cattle Trader
 - (e) Abdisalan Abdilahi – Cattle Trader – 0721-754913
 - (f) Abdile Wakku – Cattle Trader

County Council

- (a) Mrs. Sofia H. Sadik – County Treasure
- (b) Mr. Sadik H. Abdi – County Clerk

Municipal Council

- (a) Mr. Jilao I. M. – Council Clerk

Ministries

- (b) Rashid Hamin – District Livestock Production Officer – Garissa
- (c) Ahmed A. Arab – District Public Health Officer – Garissa
- (d) Mohamed Buul – Public Health Meat Inspector – Garissa
- (e) Mr. Karanja – A.G. Provincial Livestock Marketing Officer – Garissa
- (f) Mr. Kivuva – PDVS – Garissa

Stakeholders and other NGOs

KENYA LIVESTOCK SECTOR STUDY

- (a) Adan Haji Yussuf – Programme Manager – CARE – LIME Project
- (b) Dr. Keynan – Natural Resources Officer – ALRMP
- (c) Mr. Mohammed Werer – V. Chairman – Garissa Butchers & Slaughterhouse Association
- (d) Sheikh Abdulrahman
- (e) Ali Dahir Mohamud – Chairman – LMA
- (f) Muhamed M. Hussein – Change Agent
- (g) Dubai Ali Amey – Director - KLMC
- (h) Aden Ali – Farah – Chairman - DLMC
- (i) Omar A. Barid – Member - DLMC

- Milk Traders
 - D.H Abdullahi – Halgan Youth Development Group
 - Pastoralist Women Group
 - Halima Osman – Milk trader
 - Zeinab Ibrahim – Milk trader
 - Muslima Jibril – Milk trader
 - Amina Abdi Ali – Halgan Youth Development Group
 - Fatuma Mohamed – Milk trader
 - Isaac Mohamed – Milk trader
 - Abdi K. Hassan – Milk trader

7. Isiolo District

A: Government Officials

- a) Mr. Abbas – DLPO
- b) Dr. G. Kimathi – DVO
- c) Dr. Mrisi – Deputy DVO
- d) Mr. Gituma - AHO
- e) Dr. M. Mutungi – D/AVO
- f) Mr. J. J. Nthigah – DLO
- g) Mr. Gitari – DHSO
- h) Benjamin Ireri Baabu – SLHA/Meat Inspector
- i) Charity Murwithania – Meat Inspector
- j) Mr. Njaga – PDLPO

DLMC

- a. Dokata Abdi Kadir – Chairman DLMC
- b. Ibrahim Adan – DLMC Member

B: Livestock Traders

- a) Said Ali – Moyale – Isiolo – Nanyuki – Nairobi Trader
- b) R. Mohamed – Camel trekker – Marsabit – Nairobi
- c) Mohamed Ali Sanata – Mandera – Isiolo – Voi
- d) Haji Noor Aburo – Trekker – Moyale – Isiolo
- e) Mohamed Hussein – Trader – Wajir – Isiolo

C: County Council

- a) Abdulahi Ali Dhima – Revenue Officer
 - b) Mohammed Wako – Assistant Revenue Officer
-

KENYA LIVESTOCK SECTOR STUDY

c) Guyo Buke – Licensing Officer

D. Other Stakeholders

- a) Lordma Lekalkuli – ALRM
- b) Mr. Gikandi – Imani Butchery
- c) Mr. Mutuma – Safari Butchery/Butchery Association

D: Tegemeo Hides/Skins

8. Emali Market

- a) Paul Lesalul – Cattle trekker – Emali – Nairobi
- b) Paul Musyoki – Cattle/Shoats trader – Makindu – Emali – Nairobi
- c) Duncan L. Sinkeet – Cattle Finisher – Emali – Voi Ranch – Mariakani
- d) Joel Mugur – Cattle trekker – Emali – Mombasa

9. Bissel Market/Kajiado

: Traders

- a) Moriaso Kasero: Trader – Butcher – Bissel – Burma
- b) Moses Mbere: Cattle trekker – Bissel – Nairobi
- c) Moses Sekento: Cattle trader/fattener – Bissel – Own ranch
- d) Jeremiah Parmoat: Shoats trader: Bissel – Nairobi
- e) Kennedy Kipes: Shoats Trader: Bissel – Nairobi

10. Survey of Slaughterhouses around Nairobi

A: Government Officials and Slaughterhouse Operators

- (a) Nyongara Slaughterhouse
 - Dr. Gachoya
 - Kangari Muhu
 - (b) Nyonjoro – Manager
 - (c) Dandora Slaughterhouse
 - Robert Kivinda – Manager
 - (d) Bahati Slaughterhouse
 - Ngethe Mburu Thiani – Manager
 - (e) Hurlingham Group of Companies
 - Mr. Maina - Manager
 - (f) Kiserian
 - Manager
 - (g) Keekonyokie
 - Wilfred Ole Undugu - Manager
 - (h) Kayole
 - Mr. James Mwai – Trader/Manager
 - (i) Kiamaiko
 - Dr. Mwangangi
 - (j) Dr. Mutua – In-charge of hygiene – Nairobi Province
 - (k) Dr. Waweru – Kajiado DVO
-

KENYA LIVESTOCK SECTOR STUDY

- (l) Dr. Wangombe – Deputy DVO – Machakos
- (m) Abed Muvea – Mlolongo meat inspector
- (n) Mumu – Manager
- (o) Cooperative
 - Dr. Mambo

B: Traders Interviewed at Slaughterhouses

- (a) Mwangi Kinyanjui: Cattle trader – Voi – Dagoretti
- (b) John Twei: Cattle trader – Eldoret/Nakuru – Dagoretti
- (c) James Mwai: Cattle trader – Migori – Dandora
- (d) Kangari Muhu: Cattle trucker – Narok – Dagoretti
- (e) Abdi Noor: Cattle Trader – Kajiado/Chompole – Kitengela
- (f) Wilfred Ole Ondungu: Cattle trader – Kajiado – Keekonyokie
- (g) S. Ndano: Cattle/camel/shoats trader – Isiolo – Mlolongo
- (h) Guyo Shanda: Cattle trader – Kajiado – Mlolongo
- (i) Silvester Mwaura: Cattle trader – Rumuruti – Bahati – Limuru
- (j) Hannah Waithera: Cattle trader – Laikipia – Dagoretti
- (k) Silas Theuri: Cattle trader – Kuria – Dandora
- (l) Michael Njenga: Shoats trader – Kajiado – Kiamaiko
- (m) Abdi Kurrow: Shoats trader: Kajiado – Kiamaiko
- (n) Ole Mushati: Stock trader/meat wholesaler – Migori – Kiserian
- (o) Tatiri Ole Oila: Stock trader/butcher – Tanzania – Kiserian

10. Mombasa

A: Government Officials and Slaughterhouses

- (a)
- (b) Aden Daoullé – CEO LTMSK
- (c) Mariakani Slaughterhouse – Manager
- (d) Mombasa Export Slaughterhouse – Manager
- (e) Mariakani Ranch – Manager

B: North Eastern Province/Tana River Traders

- (a) Mr. Mbale – Cattle/Shoats trader – Garissa – Mariakani
- (b) Abdi Sheik – Cattle/Shoats trader – Garissa/Tana River – Mombasa
- (c) Swaleh Shobe – Cattle/Shoats trader – Lower Garissa/Ijara – Mombasa
- (d) Abdille Hassan – Cattle/shoats/camel trader – Garissa/Tana River - Mombasa

11. WAJIR

- a. Khadija Maow – Chairlady Kulmiye & Parwago Women’s Group
- b. Habiba Ali – Chairperson – ALIMAOW Women’s Group
- c. Seina Maalim Aden – Chairperson Hodhan Women’s Group
- d. Amina Mohamed – Chairlady Godade Women’s Group
- e. Habiba Osman – Chairlady Jogoo Women’s Group
- f. Abdi Ahmed – Cattle trader
- g. Salat Mohamed – Livestock trader
- h. Isaac Jimali – Livestock trader
- i. Abdi Ali Yussuf – Livestock trader
- j. Rashid Mohammed – Team Interpreter

KLMC/DLMC

KENYA LIVESTOCK SECTOR STUDY

- a) Kaltuma Abdullahi – DLMC
- b) Moktar Aden – DLMC

COUNTY COUNCIL

- a) Abas Noor – Revenue Officer
- b) Mohamed Aden – Market Inspector

DPA

- a) Nordin Abdi – Acting DPA Coordinator
- b) Mohamed Abdi – DPA Board Member
- c) Sala Ali – DPA Board Secretary

ALRM

- a) Zack Abdil – SLDO
- b) Ahmed Hassan – Communication Officer

12. MANDERA

Women Groups/Milk Traders

- a) Aden Noor Madey – Chairlady Hola Iyo Hanti wathaga
- b) Abdia Musa – Chairlady, Kal Aliyo Women's Group
- c) Fatuma Dahir – Wala Haba Women's Group
- d) Abdi Guyo – Team Interpreter

Livestock Traders

- a) Maalim Abdulahi
- b) Hussein Mursal
- c) Omar Mohamed
- d) Fatuma Abdi

DLMC/KLMC

- a) Abdile Sheikh Billow

Hides/Skins Traders

- a) Gaiye Aden – Fino Hide/Skins trader
- b) Hussein Mursal – Mandera Youth Hides and Skins Traders

ALRM

- a) Adan Yusuf Deis – SLDO

County Council

- b) Abdi Noor Ali – Revenue Clerk
 - c) Ahmed Jibril – Market Inspector
-

KENYA LIVESTOCK SECTOR STUDY

Annex Table 1: Margins in trekking livestock

Trekking Route	WAJIR-GARISSA			SOMALIA-GARISSA	SOMALI/LIBOI-GARISSA	
	Cattle	Goats	Camels	Cattle	Cattle	Camels
Type of Animal						
Number trekked	300	500	20	250	200	15
Mean Price	11,000			9,500	11,500	
- Bull	10,000			9,000	11,000	
- Castrate	9,500			8,500	10,000	
- Cow				5,000	6,000	
- Immature						
- Male goat		950				
- Female		850				
- Male camel			17,500			20,500
- Female camel			17,000			18,500
Mean Price/Lot	10,200			8,000	9,625	
- Cattle						
- Goats		900				
- Camels			17,250			19,500
Costs/Head						
Assembly	9	9	9	8	9	9
Militia				200		
Trader costs - 1	27	27	27	60	56	74
Vet (food)	5	5	5	6	4	6
Brokers	150	50	200	200	100	200
Permits	3	0.2	20		0.5	
Municipal - 1						
County - 1	200	40	230		160	160
Trekking costs	102	102	102	64	100	129
Feed/water	20	20	20	40	40	52
Municipal - 2	160	50	200	160		160
County - 2						

KENYA LIVESTOCK SECTOR STUDY

Broker	100	50	200	100	100	200
Trader costs - 2	14	14	14	100	30	30
Sub-Total	790	367	1,027	938	534	1,000
Loss	82	5	23	107	62	111
GRAND TOTAL	11,072	1,272	18,300	9,045	10,221	
Average Price/Lot	11,750	1,300	22,750	10,625	12,375	22,250
Less Costs	11,072	1,272	18,300	9,045	10,221	20,617
Margin	672	28	4,450	1,580	2,154	1,633
% Margin	5.7%	2.1%	19.6%	14.9%	17.4%	7.3%

KENYA LIVESTOCK SECTOR STUDY

Annex Table II: Trucking Livestock to Nairobi, Mombasa and Galana Ranch

TRUCKING ROUTE	GARISSA - NAIROBI		GARISSA - MOMBASA	
	CATTLE	SHOATS	CATTLE	Average for Itinerant trader
ANIM				
ANIMALS TRUCKED	26	70	26	25
A. COST ITEMS				
a1) Animals				
- Bulls	17,500		15,500	}
- Castrate	16,500		14,000	
- Cow	15,000		13,500	
- Immature				
- Ram		1,650		
- Castrate		1,450		
- Female		1,500		
- Male goat		1,950		
- Castrate		1,850		
- Female goat		1,750		
- Male camel				
- Female camel				
a2) Mean Price/Lot				
- Cattle	16,333		14,333	11,150
- Sheep		1,691		
- Goat				
- Camel				
a3) Second market costs/head (For all animals marketed)				
- Broker		3,600	2,600	100/head
- Trader costs	3,697	653	3,300	200
- Ram - Cattle		700	780	}
- Shoat			105	
				1,495

KENYA LIVESTOCK SECTOR STUDY

- Branding	105	210		
a4) Vet costs				includes security
Permit costs	100	100	100	
A5) Transport	29,750	5,250	25,000	200
Loaders	4,250	750	2,500	100
a6) Terminal Market Costs				
Off-loading	780	700	780	30
Security/Boma fee	2,600	2,100	2,600	100
Auction fee	4,215	1,750	4,215	160
Cost per Animal	1,750	224	1,614	2,285
a7) Total Costs	18,083	1,915	15,947	13,435
Cattle	18,500		17,333	18,000
Shoat		2,200		
A8) Margin	417	285	1,386	4,565
a9) % Margin	2%	13%	8%	25.4%

KENYA LIVESTOCK SECTOR STUDY

Annex Table III: Trekking Value Chain to Isiolo Market

TREKKING ROUTE	MOYALE - ISIOLO			SAMBURU - ISIOLO		WAJIR - ISIOLO	
	CATTLE	CAMEL	SHOATS	CATTLE	SHOATS	CATTLE	CAMEL
ANIMALS TREKKED	100	30	100	100	100	100	10
A. Cost Items							
a1: Animals							
- Bulls	16000			10000		13000	
- Castrate	15000			9500		12500	
- Cow	13000			9000		10500	
- Immature	5500						
- Ram			1400		1300		
- Castrate			1300		1100		
- Female			1200		1200		
- Male goat			1600		1400		
- Castrate			1500		1200		
- Female goat			1200		1200		
- Male camel		17000					17500
- Female camel		15500					16500
a2: Mean Price/Lot							
- Cattle	9800			9500		12000	
- Sheep			1300		1200		
- Goats			1433		1266		
- Camels		16250					17000
a3: Second Market Costs/Head							
- Cess (Auction + Export)	20000	6000	6000	20000	6000	20000	2000
- Broker	10000	6000	5000	10000	5000	10000	2000
- Trader costs	7786	10740	1342	3205	2794	4547	3752
- Ramp							
- Branding	500	150	300	500	300	500	50
a4: Vet costs, water & food	5164	7123	890	1522	578	9493	11506

KENYA LIVESTOCK SECTOR STUDY

- Permits	100	50	100	100	100	100	50
a5: Trekkers & Food	27410	37808	4726	17358	15254	6780	8219
- Security	5958	8219	1027	3618	5819	4628	10360
a6: Terminal market costs							
- Unloading							
- Security/Bonus fee							
- Auction fee	10000	3000	5000	10000	5000	10000	1000
Sub-Total	1066918	566590	161035	1012685	164145	1261420	207937
Average cost per animal	10669	18886	1610	10127	1641	12614	20794
a7: Revenue							
Mean Revenue/Lot							
- Cattle	16500			13000		14666	
- Shoats			1650		1691		
- Camels		21660					21500
a8: MARGIN	5831	2114	40	2873	50	2052	706
a9: % Margin	35.3%	9.8%	2.4%	22.1%	3%	14%	3.3%

KENYA LIVESTOCK SECTOR STUDY

Annex Table IV: Trucking Cattle and Trekking Camels from Isiolo to Terminal Markets

TREKKING ROUTE	MARSABIT - ISIOLO	MANDERA - ISIOLO	MOYALE - ISIOLO	
ANIMAL TYPE	Camels	Cattle	Cattle	Camels
ANIMALS TREKKED	60-70	200	150	50
A: COST ITEMS				
a1: ANIMALS				
- Bull		16,000	15,500	
- Castrate		14,000	14,500	
- Cow		13,500	13,500	
- Immature		6,500	5,500	
- Male Camel	17,000			19,000
- Female Camel	15,500			17,000
a2: MEAN PRICE/LOT				
- Cattle		12,500	12,500	
- Camel	16,250			18,000
a3: Second mkt costs/Head				
- Broker	13,000	20,000	30,000	10,000
- Trader costs	6,000	3,500	9,719	11,780
- Ramp				
- Branding	325	1,000	750	250
- Auction Fees	13,000	40,000	30,000	10,000

KENYA LIVESTOCK SECTOR STUDY

a4: Vet Costs, Water & Food	3,000	10,000	9,041		10,958
Permit	50	100	100		50
A5: Trekker + Food	40,000	98,000	49,726		60,273
Security/Clan fees	20,000		22,602		27,397
a6: Tertiary Market Costs					
- Loading					
- Security/Boma fees	19,500	7,000			
Holding Ground/Herders fee		10,500	6,328		7,641
Others	2,500	2,500			
Stage 1 Costs	116,875	192,600	158,266		138,349
B: STAGE 2: TRUCKING/TREKKING ROUTE	ISIOLO - NAIROBI	ISIOLO - VOI	ISIOLO NAIROBI	ISIOLO NANYUKI	ISIOLO- NAIROBI
b1: Loading fees		6,000	1,500	3,000	
Permits	50	100	100	225	50
B2: Transport		300,000	300,000	300,000	
Loader			4,000	3,000	
b3: Trekker + Food	35,000	2,500			18,000
b4: Terminal Market Costs					
- Unloading		4,000	1,500	3,000	
- Boma/Security Fee	32,500	20,000	5,000		10,000

KENYA LIVESTOCK SECTOR STUDY

- Auction Fees	6,500		5,000		5,000
- Trader costs	6,000	3,500	678	2,500	821
- Fattening Fees		72,000		48,000	
- Vet Costs + herders fee		20,000		18,000	
Transport to slaughter + costs		100,000			
Others					
			6,778	107,725	
Sub-Total	95,000	258,600	319,456	2,208,769	33,871
Cost per Animal	510	14,756	15,685	14,725	21,424
	MARSABIT - ISIOLO-	MANDERA - ISIOLO-	MOYALE - ISIOLO-NAIROBI /		
	NAIROBI	VOI	NANYUKI		
REVENUE					
- Bull		18,125	19,000		
- Castrate		18,125		17,500	
- Cow		18,125		17,500	
- Immature		18,125		13,750	
- Male camel	22,500				23,500
- Female camel	20,000				21,500

KENYA LIVESTOCK SECTOR STUDY

REVENUE/CATTLE LOT		3,625,000	2,540,625	
REVENUE/CAMEL LOT	1,381,250			1,125,000
REVENUE/ANIMAL	21,250	18,125	16,937	22,500
MARGIN/CATTLE		3,369	1,253	
MARGIN/CAMEL	1,740			1,076
% Margin	8.2%	18.6%	7.3%	5%

KENYA LIVESTOCK SECTOR STUDY

Annex Table V: Livestock Marketing from Emali to Nairobi, Mombasa and Voi Ranches

		CATTLE TREKKER	IMMATURES TRADE	CATTLE AND SHOATS TRADE		CATTLE TREKKER
		EMALI - NRB	EMALI - VOI	EMALI - NAIROBI		EMALI - MSA
1)	Number Traded	Cattle		Cattle	Shoats	Cattle
	- Cattle	100	20	25		100
	- Sheep				25	
	- Goats				30	
2)	Purchase Price					
	- Bull	19000		18000		16500
	- Castrate	17000		18000		15500
	- Cow	17000		14500		14000
	- Immature		6500			
	- Ram				1750	
	- Castrate				1450	
	- Female				1750	
	- Male Goat				2100	
	- Castrate				1850	
	- Female				1600	
3)	Mean Price/Lot	17667	6500	16667	S = 1650	15333
					G = 1850	
	Broker fees					
	- Cattle	100	100	100		100
	- Shoats				50	
	Traders costs -1	100	65	41	3	15
	Loading		30	30	3	30

KENYA LIVESTOCK SECTOR STUDY

	Branding	5	5	5	3	5
	County fee	40	40	40	20	40
	Permits	100	100	100	50	100
	Vet. Costs		100			
	Transport		850	918	7	
	Loader		20	20	5	
	Trekker costs	330				150
	Fattening fee		480			
	Herder fee		60			
	Transport to slaughter		120			
	Trader costs - 2	14	150	48	3	
	Boma fee/other costs	100	100	95	5	100
	Slaughter/distribution		1000			
4)	Sub-total of Costs	18456	9620	18014	S = 1799	15873
					G = 1999	
	Revenue					
	- Bull	22000		20000		19500
	- Castrate	19000		19500		17000
	- Cow	19000		16500		16000
	- Immature					
5)	Revenue/Cattle Lot	20000	18125	18667		17500
	Revenue					
	- Ram				2100	
	- Castrate				1850	
	- Female				1850	
6)	Revenue/sheep lot				1933	

KENYA LIVESTOCK SECTOR STUDY

	Revenue					
	- Male goat				2400	
	- Female				2050	
	- castrate				1750	
7	Revenue/Goat lot				2067	
	margin/ (%)					
	- Cattle	1544 (7.7%)	8505 (46.9%)	653 (3.5%)		1627 (9%)
	- Sheep				134 (6.9%)	
	- Goats				68 (3.3%)	

Annex Table VI: Margins in Trucking Shoats in Southern Route

TRUCKING ROUTE	BISIIL - NAIROBI	BISSIL – NAIROBI
NAME	KENNEDY KIPES	JEREMIAH PARMOAT
TYPE OF ANIMALS	SHEEP	GOATS
NUMBER TRUCKED	30	25
Mean Price		
Male Goat	1,550	1,600
Castrate	1,500	1,500
Female Goat	1,450	1,600
Ram	1,450	1,450
Castrate	1,350	1,400
Female Sheep	1,400	1,500
Mean Price/Lot		
Shoat	1,450	1,508
COSTS – PRIMARY MARKET		
Days	2	3
Assembly	-	-
Permits	50	50
Vet Costs	-	-
Branding @ 10	300	250
Loading @ 5	150	125
Brokers @ 50	1,500	1,250
Cess @ 15 + 20	1,050	875
Boma Fee @ 40	1,200	1,000
TRADER COSTS		
Accommodation	200	300
Food	400	600
Transport	4,000	4,000
Loader	-	-
Security	-	-
Others	100	200

KENYA LIVESTOCK SECTOR STUDY

COSTS – TERMINAL MARKET		
Days	3	2
Accommodation	450	400
Food	600	400
Unloading	300	125
Cess	-	1,000
Security	1,500	1,250
Others	200	-
SUB-TOTAL	12,000	11,825
Loss	-	-
Costs/Animal	400	473
REVENUE: MEAN PRICE		
Mean Price	1,950	2,050
MARGIN	50	69
% MARGIN	2.6	3.4%

KENYA LIVESTOCK SECTOR STUDY

Annex Table VII: Margins in Trucking Cattle/Meat – Bissil – Nairobi

TREKKING ROUTE	BISSIL-NRB	BISSIL – S.H-NRB	BISSIL – BISSIL FARM
NAME	MOSES MBERE	MORIASO KASERO	MOSES SEKENTO
TYPE OF ANIMALS	CATTLE	CATTLE	CATTLE
NUMBER TREKKED/TRUCKED	50	20	40
Mean price			
Bull	15,500	15,500	-
Castrate	15,000	14,000	-
Cow	14,750	12,000	-
Immature	-	-	6,500
Mean Price/Lot			
Cattle	15,083	13,833	6,500
COSTS – PRIMARY MARKET			
Days	5	3	4
Assembly	4,500	4,000	3,600
Permits	75	50	75
Vet Costs	-	-	-
Branding	1,000	400	800
Loading	-	-	-
Brokers	7,500	3,000	4,000
Cess @ 20 + @ 40	3,000	1,200	800 no export fee
Boma Fee @ 100	5,000	2,000	-
TRADER COSTS			
Accommodation	500	300	-
Food	1,000	600	400
Transport	-	-	-
Loader/Trekker	15,000 @300/head	300	300
Security		-	-
Others (Transport, Telephone)		100	100
COSTS – INTERMEDIATE MARKET			

KENYA LIVESTOCK SECTOR STUDY

Days	3	-	-
Food	900	-	-
Accommodation	600	-	-
Cess	-	-	-
Slaughter charges	16,000	8,000	-
Transport (meat)	-	16,000	-
Loading	-	1,400	-
Meat attendant	5,000	1,000	-
Boma Fee	2,500	-	-
Others	500	-	-
COSTS – TERTIARY MARKET			
Days	-	3	-
Food	-	600	-
Accommodation	-	900	-
Cess/Stall fee @ 70/carcass	-	1,400	-
Unloading	-	1,400	-
Meat attendant	-	1,000	-
Storage (1 day) @ 200/carcass	-	4,000	-
Herders Fee 2@ 3,000/month	-		54,000
Vet costs 1,500/month	-		13,500
Food and Water	-		-
SUB-TOTAL	62,175	47,050	77,575
Loss	-	-	-
Cost/Animal	1,244	2,353	1,939
REVENUE			

KENYA LIVESTOCK SECTOR STUDY

Mean Price			
Bull	18,125	18,125	-
Castrate	18,125	18,125	9,005-11,000
Cow	18,125	18,125	-
Immature	-	-	-
Mean Price/Lot			
Cattle	18,125	18,125	10,250
MARGIN	1,798	1,939	1,811
% MARGIN	10%	10.7%	17.7%

KENYA LIVESTOCK SECTOR STUDY

Annex Table VIII: Mandera Livestock Marketing Value Chains

TREKKING/ TRUCKING ROUTE	MANDERA - NRB	MANDERA - NAIROBI	MANDERA - GARISSA	SOMALI/ETHIOPIA- MANDERA
TRADER'S NAME	MAALIM ABDULAH	HUSSEIN MURSAL	OMAR MOHAMED	FATUMA ABDI
ANIMAL TYPE	CATTLE	CATTLE	CAMEL	GOATS
AMOUNT TREKKED/ TRUCKED	40	50	20	20
A1. Price				
Bull	10,000 - 12,000	14,000 - 15,000		
Castrate	10,000	13,000		
Female Cattle	11,000	14,000		
Immature				
Ram				
Castrate				
Female Sheep				
Male Goat				900 - 1,100
Castrate				1,000
Female Goat				900
Male Camel			13,000 - 15,000	
Female Camel			12,000	
A2. Mean Price/Lot				
Cattle	10,667	13,833		
Shoats				967
Camel			13,000	
B1. Costs: Primary Mkt				
Days	10	10	7	3
Assemblers	6,000	8,000	6,000	1,500
Broker	4,000	5,000	2,000	400
Cess	5,200	6,500	2,600	
Boma Fee		30,000		

KENYA LIVESTOCK SECTOR STUDY

Branding	400	5,000	200	100
Loading	1,200	1,500		
Food	2,000	1,000	1,400	300
Accommodation	1,000		1,000	300
Vet Costs				
Movement Permit	75	75	50	
Transport	80,000	100,000		
Loader	3,000	3,000		
Trekker			16,000	2,000
Others	300	200	7,000	500
B2 Costs: Terminal Mkt.				
Days	5	7	7	3
Cess	4,000	5,000	4,000	400
Food	1,000	2,100	1,400	600
Accommodation	1,000	1,400	1,400	300
Landing	1,200	1,500		
Security				
Boma Fee	4,000	5,000		
Others	300	400	2,000	
C1: SUB-TOTAL	521,139 (13,028)	807,340 (16,147)	305,050 (15,253)	2,632 (1,262)
C2: Mean Price/Lot				
Cattle	14,167	17,167		
Shoat				1,267
Camel			18,000	
GRAND TOTAL Revenue	566,664	858,330	360,000	25,332
MARGIN	1,139	1,020	2,747	88
% MARGIN	8%	6%	15.3%	6.9%

KENYA LIVESTOCK SECTOR STUDY

Annex Table IX: Wajir Livestock Marketing Value Chains

TREKKING ROUTE	WAJIR-GARISSA	WAJIR-ISIOLO	WAJIR-GARISSA	WAJIR-GARISSA
TRADER'S NAME	ABDI ALI YUSSUF	ISAAC JIMALI	SALAT MOHAMED	ABDI MOHAMED
ANIMAL TYPE	CATTLE	CAMEL	SHOATS	CATTLE
AMOUNT TREKKED	50	20	60	60
A. PRICE				
Bull	9,000 – 11,000	-	-	10,000
Castrate	9,000	-	-	9,000
Female Cattle	9,000	-	-	9,500
Immature	3,500	-	-	3,500
Ram			950-1,100	
Castrate	-	-	900	-
Female Sheep	-	-	900	-
Male Goat			1,000-1,200	
Castrate	-	-	1,000	-
Female Goat	-	-	900	-
Male Camel		15,000-16,000		
Female camel		13,000-14,000		
A1: MEAN PRICE/LOT				
Cattle	7,875	-	-	8,000
Shoat	-	-	970.8	-
Camel	-	14,500	-	
B1: COSTS: PRIMARY MKT				
Days	5	5	7	10
Assemblers	3,000	6,000	2,000	4,000
Broker	7,500	4,000	3,000	9,000
Cess	5,500	2,200	1,800	6,600
Boma Fees	- -	-	-	-
Branding	500	200	300	600
Loading	-	-	-	-

KENYA LIVESTOCK SECTOR STUDY

Food	1,000	1,000	1,050	3,000
Accommodation	1,000	500	700	1,500
Vet Costs	-	-	-	-
Movement Permit	75	50	100	100
Others	200	-	300	5,000
B2: COSTS: TERMINAL MKT				
Days	7	10	7	3
Trekker Costs	18,000	21,000	5,000	15,000
Cess	5,000	2,000	3,000	6,000
Food	1,400	2,000	1,400	600
Accommodation	1,400	2,000	1,400	450
Landing				
Security				
Boma Fees				
Others	500	200	100	200
SUB-TOTAL	438,825 (8,777)	331,150 (16,558)	78,398 (1,307)	532,000 (8,867)
C: MEAN PRICE/LOT				
Cattle	10,313	-	-	13,650
Shoat	-	-	1391.6	-
Camel	-	17,560	-	-
GRAND TOTAL (Revenue)	515,625	351,200	83,496	819,000
GROSS MARGIN	1,536	1,002	85	4,783
% MARK-UP	14.9%	5.7%	6.1%	35%

KENYA LIVESTOCK SECTOR STUDY

ANNEX TABLE X: MEAT TRANSPORT COSTS

SLAUGHTERHOUSE	ESTATES SUPPLIED	TRANSPORT COSTS/CARCASS		
		CATTLE	GOATS	SHEEP
DAGORETTI	Zimmerman	600	300	300
	Githurai	800	150	150
	Kahawa West	650	300	300
	Ngumba	600	250	250
	Garden Estate	600	250	250
	Kiserian	500	150	150
	Nkoroi	500	150	150
	Ongata Rongai	500	150	150
	Otiende	500	200	200
	Madaraka	600	150	150
	Nairobi West	500	150	150
	Westlands	600	400	400
	Langata	600	100	100
	City Centre	400	250	250
	Karen	500	250	250
	Hurlingham	600	300	300
	Huruma	200		
	Dandora	250		
	Uhuru	200		
	Buruburu	200		
Komarock	250			
Mathare	500			
	Mathare North	400		
	Zimmerman	400		
	Githurai	800	150	150
	Kahawa West	600	300	300
	Ngumba	600	250	250
	Garden Estate Rd	600		
	Huruma	250		

KENYA LIVESTOCK SECTOR STUDY

NJIRU	Kariobangi	100		
	Dandora	250		
	Buruburu	150		
	Komarock	150		
	Kayole	100		
	Uhuru	150		
	Kiserian	700		
KISERIAN	Kiserian	300	100	100
	Nkorol	500	150	150
	Ongata Rongai	500	150	150
	Otiende	500	200	-
	Madaraka	500	-	-
	Nairobi West	500	150	150
	Langata	600	250	250
	Karen	500	250	250
BURMA	Eastleigh	150	-	-
	Majengo	100	-	-
	Kariakor	80	-	-
	Ziwani	100	100	100
	Nkorol	500	150	150
	City Centre	240	120	120
	Zimmerman	400	-	-
	Ngumba	350	-	-
	Ngumba		100	100
	Huruma		100	100
	Dandora		100	100
	Uhuru		150	150
	Buruburu		150	150

KENYA LIVESTOCK SECTOR STUDY

KIAMAIKO	Komarock		100	100
	Kayole		150	150
	Eastleigh		100	
	Mathare		100	
	Kariakor		100	
	Westlands		400	400

KENYA LIVESTOCK SECTOR STUDY

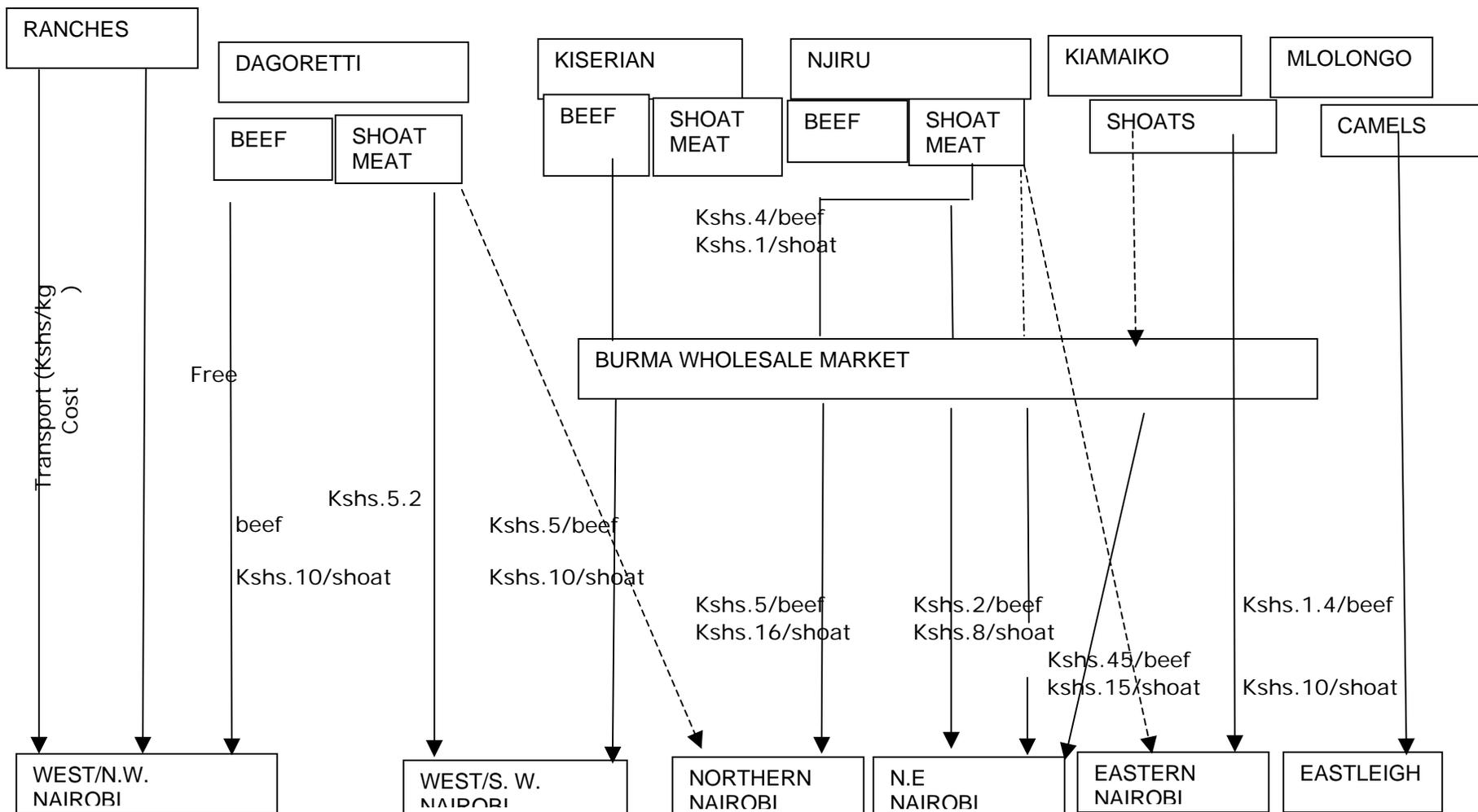
ANNEX TABLE XI: LIST OF BUTCHERIES VISITED

	BUTCHERY NAME	ESTATE		BUTCHERY NAME	ESTATE
1	STAREHE	KISERIAN	45	TAMUTAMU	KAREN
2	ELITE	KISERIAN	46	MUTHAIGA MEATS	MUTHAIGA
3	OLETETI	KISERIAN	47	VILLAGE MARKET	"
4	JOLLY	NKOROL	48	HAPPY	LAVINGTON
5	NKOROL	NKOROL	59	KEDDY	HURLINGHAM
6	CHOICE	ONGATA RONGAI	50	MIDWAY	"
7	MAKUTI	ONGATA RONGAI	51	CORNER	ZIMMERMAN
8	ACHIEVERS	"	52	JIKAZE	"
9	PENTAGON	"	53	GICHMAN	"
10	OLOITAI	"	54	120	GITHURAI
11	MAC-NUT	OTIENDE	55	LISBON	"
12	IMENTI	ONYONKA	56	CHOICES	"
13	TUMAINI	"	57	FAITH	KAHAWA WEST
14	THORN TREE	MADARAKA	58	KINANGOP	"
15	ZACKIM	"	69	MUKUYU	"
16	LINKS	NAIROBI WEST	60	SIDEWALK	NGUMBA
17	B5	KENYATTA MARKET	61	MAIN FRAME	"
18	B10	"	62	DISNEY	"
19	B2	"	63	QUICK CUT	GARDEN ESTATE ROAD
20	ROYAL	EASTLEIGH	64	WEST END	"
21	SHAMBA HILLS	"	65	HITECH	"
22	NEW CLASSIC	"	66	IREGI	HURUMA
23	FLORIDA	MATHARE NORTH	67	RAHA YANGU	"
24	GATARA	MATHARE SOUTH	68	GICHUKA	KARIOBANGI
25	MAGINA	MATHARE	69	EBENEZAR	"
26	FAMILIES	"	70	PETER'S	DANDORA
27	UP-DATE	MATHARE SOUTH	71	MWANGI NICE	"
28	RAIA	MAJENGO	72	ALTERNATIVE	UHURU
29	CORNER	"	73	UNITY	"
30	OLD TRAFFORD	"	74	TAVERN	"
31	NEW CALIFORNIA	KARIAKOR	75	GEORGE'S	BURUBURU

KENYA LIVESTOCK SECTOR STUDY

32	SILENT	..	76	EMIRATES	..
33	ZIWANI	ZIWANI	77	JOYLAND	KOMAROCK
34	HIGHWAY	..	78	VIVA	..
35	MEAT MASTERS	WESTLANDS	79	MICKEY	..
36	RANCHLAND	..	80	TUMAINI	KAYOLE
37	WESTLANDS	..	81	ANGELS	..
38	EBENEZA	LANGATA	82	TOPSTAR	..
39	SOUTHLANDS	..	83	ACAPULCO	BOMBOLULU
40	FAIRBURY	LANGATA	84	VIPINGO	LIKONI
41	YAMUGWE	CITY MARKET	85	SUNCITY	..
42	MEAT BAZAAR	..	86	MAGRAM	BONDENI
43	MAENDELEO	CITY CENTRE	87	MKOMANI	MKOMANI
44	MASAA	KAREN			

KENYA LIVESTOCK SECTOR STUDY



Westlands

- Langata
- Karen
- Muthaiga
- Lavington
- Hurlingham
- City Centre

- Otiende
- Onyonka
- Southland
- Madaraka
- Nairobi West
- South B/C

- Zimmerman
- Githurai
- Kahawa West
- Ngumba
- Garden Estate

- Ziwani
- Kariokor
- Majengo
- Mathare N/S
- Eastleigh

Huruma

- Kariobangi
- Dandora
- Uhuru
- Buruburu
- Komarock
- Kayole

