BEEF CATTLE MARKETING IN

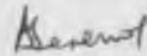# BARINGO DISTRICT, KENYA

BY:-

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A Thesis submitted in partial fulfilment for the degree of Master

of Science in Agricultural Economics

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1994.

DECLARATION

I declare that this is my original work and has not been submitted for a degree in any other university.

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This thesis has been submitted for examination with my approval a University Supervisor.

Date..26/7/96.. Name: PROF. ACKELLO - OGUTU

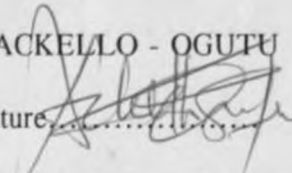Signature:...................

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ABSTRACT

The study aims at determining the factors that influence competition and pricing efficiency in the Baringo beef marketing system.

It starts by describing the marketing system in the district and then goes on to show the prevailing movement patterns of cattle within and out of the district.

The extent of pricing efficiency is then analyzed by looking at the returns to capital based on gross margins. The results of the analysis show that the major form of organized marketing of livestock in Baringo district is through auctions. It also shows that most of the auctions in the district have a relatively high buyer concentration and therefore low competition.

It was also observed that the major barrier to entry is the high capital requirement for aspiring cattle traders. Both horizontal and vertical integration was evident in the system as well as high returns to capital to both integrated and non-integrated traders.

There was evidence of low efficiency in the Baringo beef cattle markets. The aspects of inefficiency identified were the existence of high returns to capital in virtually all the channels except that of Mogotio group of auctions for cattle that are retail sold to Nakuru.

CHAPTER 1

INTRODUCTION

1.1   IMPORTANCE OF LIVESTOCK IN KENYA

The livestock sector plays an important role in the Kenyan economy and more so in the farming economy. Livestock are bred and cared for with the primary objective of generating products such as meat, milk, hides and skins and to meet socio-cultural objectives such as gifts, dowry and exchange. From their products, income to both the farmer and the country is generated, nutritional requirements accomplished; land put into proper use and employment objectives are achieved.

Kenya was estimated in 1989 to be carrying a livestock population of about 11.9 million cattle, approximately 25 percent of them being dairy cattle of all types. About 8.15 million sheep and 19.17 million goats (Kenya Govenment, 1989). The country's statistics on livestock are scanty but what is easily discernible is that increase in numbers of beef cattle has been very minimal due to the seasonal dependence of the livestock sector on rainfall or weather. Land available per animal unit is also declining due to settlement on grazing land and cultivation for food crops and also because of the fact that land is a fixed resource.

Table 1.1: <u>Livestock Numbers in Kenya 1989</u>

Type	Heads ('000)
Cattle (total)	11,883
Grade dairy	2,961
Beef cattle	8,922
Sheep and goats	19,171

*Source: Kenya Government, 1989.

GENERATION OF INCOME

Livestock and livestock products contributed approximately 26 percent of gross farm revenue in Kenya in 1990. Their value amounted to £K 291.4 million in 1990 in current prices. The livestock sector also contributes a remarkable proportion to the GDP whose percentage stood at 3.4 percent in 1990 (Kenya Government, 1990).

In the non-monetary economy, this sector supplies milk and meat for food and in some situations hides and skins for home use mainly as substitutes for blankets and in some cases as garments for initiated young people. It need not be emphasized here also that livestock play an important role in the Kenyan Society set-up as a form in which dowry is paid.

The contribution to the economy and to the country's valuable foreign exchange by livestock can be illustrated by the following figures on total production, local sales and export value.

Table 1.2: <u>Recorded marketed total agricultural production, Livestock and Products,</u>
<u>export value and percentage of livestock and products at current prices</u>
<u>1981-1990.</u>

Year	Total Agricultural Production (£,000)	Livestock & Products (£,000)	Export value (£,000)	Percent Livestock & Products
1981	386.88	80.23	1,242.00	21.27
1982	448.92	91.74	2,274.00	20.44
1983	555.49	94.25	2,182.40	16.97
1984	788.78	97.59	4,014.90	12.37
1985	755.94	122.37	3,852.45	16.19
1986	938.32	159.90	1,589.30	17.03
1987	817.70	189.66	216.10	23.19
1988	945.74	239.26	186.90	25.30
1989	1,003.20	250.05	1,272.70	24.92
1990	1,104.07	291.42	5,583.10	26.40

Source: Economic survey, 1987 and 1991.

NUTRITION

Kenya's population is rapidly growing (See Table 1.3) and its attendant consequences include subdivision of large scale farms hence increasing the number of smallholders, human settlement of marginal land previously unoccupied and increased demand for food of both plant and animal origin.

Most societies, Kenya being no exception, prefer meat especially beef and lamb (FAO, 1984). When incomes rise as has been the case in the urban areas of Kenya, consumers' meat purchases usually increase quite sharply in proportion to their total food purchases. The result is that over the last twenty years, increasing population and rising personal incomes have caused the demand for meat to grow rapidly both in absolute terms and in relation to the demand for most other agricultural products as shown in the Table 1.3 below.

Table 1.3:   <u>Volume and price indices of sales of livestock to   marketing boards in</u>

<u>comparison to income per capit 1986-1990</u>

Year	Income products	Quantum indices per capita livestock and (Kg)	Price indices livestock and	Beef consumption per capita	K£	products
1986	245.1	92.7	134.8	8.9		
1987	261.2	105.1	150.2	9.1		
1988	289.1	126.1	157.4	8.7		
1989	322.7	127.2	181.0	8.5		
1990	359.9	135.6	197.6	8.6		

Source: Economic Survey, 1991.

Table 1.4:   <u>Total population agricultural population and Economically active population in Kenya.</u>

Year	Population		Economically active pop.		
	Total ('000)	Agricultural Pop. ('000)	Total ('000)	In Agric. ('000)	Percent in Agriculture
1970	11,290	9,577	4,950	4,119	84.8
1975	13,703	11,362	5,890	4,884	82.9
1980	16,766	13,582	7,072	5,729	81.0
1985	20,600	16,290	8,389	6,634	79.1
1986	21,483	16,898	8,691	6,835	78.7

1979-81 = 100

Source: Food and Agricultural Organization year book vol. 40, 1986.

The figures above show that whereas there has been a rapid increase in total population as well as the economically active population, the percentage that is in agriculture has continued to decline.

This decline is a natural consequence of development but it points out that a continually decreasing fraction needs to feed a continually increasing fraction engaged in the non-agricultural sector. This consequence has to be offset by an increase in efficiency with which resources are used.

LAND USE AND EMPLOYMENT

Available evidence (Kenya Government, 1989) indicates that the average number of cattle per capita in the high rainfall areas of Kenya is low compared to the drier areas. The importance of livestock increases with increasing dryness of the environment.

The arid and semi-arid lands of Kenya comprise more than four-fifths of the country's total land surface and carry over 25% of the total human population and slightly more than half of the livestock population. (Kenya Government, 1989). The majority of people living in these areas are pastoralists although semi-pastoral and farming communities exist as well. Some of these communities are recent immigrants from the more densely populated, high potential areas of the country.

Throughout the colonial period, the development of the ASAL areas was given low priority, a situation that persisted during the first three post-independence development plan periods. However, by the late 1970's, the government took a major evaluation of the potential contribution that ASAL areas could make to the national economy. From this evaluation,(Kenya Government, 1989) policy re-orientation gave recognition to the importance of these areas in national development and the need to accord them special attention considering that:-

1. they have substantial potential for development though at comparatively higher costs.

2. most of the poorer people live in these areas hence the need to improve their living conditions through increased productivity and creation of employment opportunities.

3. there is an increasing problem of soil erosion and environmental degradation, the threat of desertification,hunger and malnutrition.

1.2   THE BEEF INDUSTRY IN KENYA

Structure of beef cattle markets in Kenya.

In Kenya, beef animals are mainly produced from marginal areas which are considerably far from areas of major consumption. The major areas of consumption are the urban areas of Nairobi, Mombasa, Kisumu, Nakuru and Eldoret.

Before cattle are slaughtered to generate the final product (beef), it goes through various agents of marketing. These agents include traders, resellers, butchers, wholesale butchers and retailers. All these agents transform the products in their own different ways.   For example, a trader provides the spatial aspect, the butcher provides the processing aspect while the retailer provides the form aspect.

Marketing and trade are also important means of integrating the pastoral systems with the rest of the economy. Marketing involves the direction of the flow of goods and services from producers to consumers or users..Trade on the other hand involves the transfer of goods and services from areas where they are available to areas where they are not and is therefore biderectional as opposed to marketing which is unidirectional Marketing is part of trade and both could be described under the term commerce Through trade, consumer goods are purchased by pastoralists and through marketing o pastoral products, income is generated for pastoralists. Consumption and investmer patterns of pastoralists are likely to influence both marketing and trade. II there is n

demand for non-pastoral commodities by patoralists, there will be little need for sale of livestock. Consequently, external factors and trends such as increased non-pastoral populations, leading to appropriation of land, may soon trigger off undesirable social development among pastoralists such as migration to urban areas for wage employment.

Kenya's meat exports, consisting mainly of beef was seen to have markedly declined during the last ten years before the year 1976 (UNDP/FA0, 1976). At that time, it was argued that satisfying the growing internal demand for meat from cattle would increasingly depend upon increase in offtake and on improvement in average carcass weight (ibid).

Table 1.5: Characteristics of livestock markets:

Type of market	Main Sellers	Main buyers	Purpose of Purchase
1. Primary collection markets	Producers	Other producers	For stock replacement or fattening.
		Local butchers	Slaughter
		Traders	Collection for resale in larger regional markets.
2. Secondary distribution markets	Traders	Local butchers	Slaughter
		Traders	For resale in terminal markets.
3. Terminal markets	Traders	Local slaughter houses	Slaughter
		Traders	Export.

Table 1.5 summarizes differences in three types of livestock markets on the basis of type of sellers and buyers operating in the market and the purpose for which livestock are purchased.

Livestock can move through several channels until they are in the hands of the consumer. The model shown below serves to show how these channels are interrelated.

Figure 1.1: <u>**Livestock marketing system model**</u>
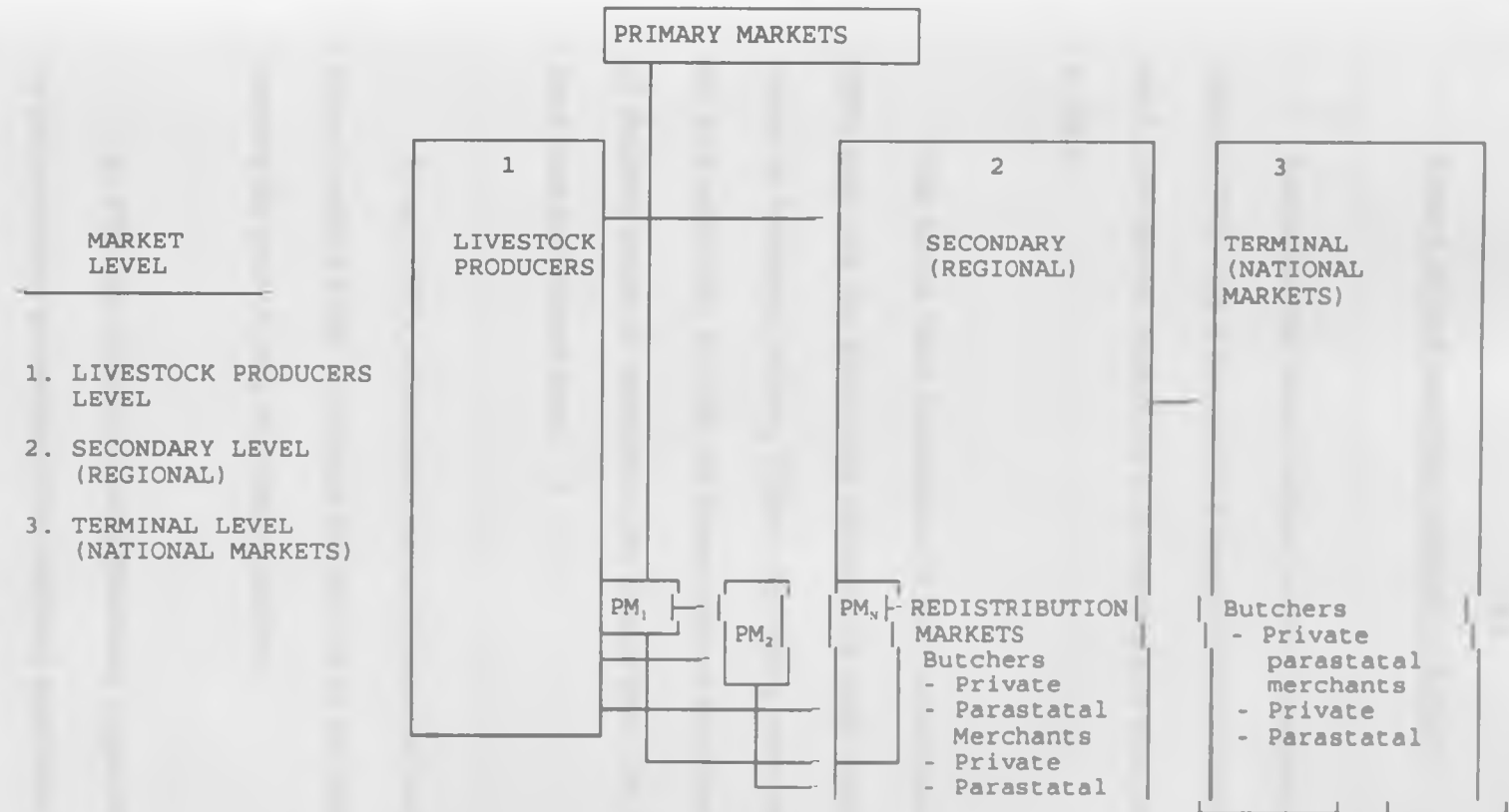
Source: Pastoral systems research in sub-Saharan Africa, 1983 (ILCA)

PM_1 - Primary market 1

PM_2 - Primary market 2

PM_N - Other primary markets

History of beef marketing istitutions in Kenya

Kenya has the oldest tradition in meat marketing in the East African region (Meyn, 1970). This is because the European settlers looked for outlets for their slaughter stock. Low internal demand led to the opening of a meat factory at Athi river by Liebigs in 1938.

The Kenya Meat Commission (KMC), which was established by ordinance in 1950, took over the factory and increased its scope considerably. Later on, slaughter houses in Mombasa, Nakuru, Eldoret and Ngong were established or taken over from the local authorities. In 1968, the Eldoret abattoir was closed down, bringing the number of slaughter houses in operation at the time to four. The Nakuru and Ngong abattoirs have since been closed down.

In the 1950's, a favourable market situation for beef, both inside Kenya and for export, enabled KMC to increase the pay out to the farmer and also to differentiate between the price of beef of different qualities.

In 1952, the African Livestock Marketing Organization (ALMO) was established by the government as a section of the veterinary department. Its function was to purchase cattle from the pastoral areas, in order to set a guaranteed floor price in the outlying districts and to obtain cattle for the Kenya Meat Commission. In 1964 ALMO was

replaced by the Livestock Marketing Division (LMD), which continued to have the same functions. With the re-organization of the Ministry of Agriculture, it became an independent division in the Ministry. The LMD has had increasing importance as a marketing channel for cattle from the North eastern province. Part of LMD's activity was the purchase and sale of immatures for further fattening. As of now, the LMD is under the Ministry of Livestock Development and only plays an advisory role .

Previous East African livestock surveys have shown that there are advantages of organized markets for cattle, particularly those selling by auction.

These advantages include:-

(1)   The seller is reasonably sure of securing the market price.

(2)   Running no financial risk of not being paid for his stock.

(3)   Market authorities could lay down and control quality standards.

(4)   Disease control measures could be more readily enforced.

(5)   The open selling at markets could contribute greatly to an improvement in market information.

In recognition of these advantages, auction markets have long been organized in the cattle producing areas throughout Kenya and are operated by the local authorities. In recent years, however, a large part of the total number of cattle sold in Kenya for slaughter does not now pass through them.   This could be attributed to a reduced

organization of the markets through the years and, hence a reduced confidence in their mode of operation.

Agencies involved in beef marketing in Kenya.

Currently, there are three main agencies concerned with livestock marketing in Kenya.

These are:

(1)   traders and butchers

(2)   the livestock marketing division (LMD) of the Ministry of Livestock Development.

(3)   the Kenya Meat Commission (KMC) and other

parastatals.

Traders and butchers play a significant role in terms of volumes of beef handled in Kenya as shown in the table below. However, KMC which has just been revived after a period of closure is the largest single market for slaughter cattle, slaughtering upto 600 head per day.

Table 1.6:   Percentage of slaughter cattle handled by parastatals, and Traders/Butchers

	I			II	III	IV
Year	Beef cattle, ('000)					
	Cows	Bulls and Bull calves	Total	Cattle and Calves purchased by Parastatals,	Percentage handled by Parastatals	Percentage handled by Traders and Butchers
1976	150.3	306.3	456.6	228.5	50	50
1977	138.2	302.1	440.3	158.1	36	64
1978	142.3	289.0	421.3	68.0	16	84
1979	139.8	272.0	411.8	67.7	16	84
1980	141.1	290.4	431.5	55.9	13	87
1981	124.3	299.8	424.1	61.2	14	86
1982	120.1	283.7	403.8	75.3	19	81
1983	122.9	255.8	378.2	83.5	22	78
1984	122.4	279.8	402.2	227.2	55	45

Source: Compiled from statistical abstract, 1985.

[1]   Beef cattle is used to mean cows, bulls and calves , and other cattle that
        were slaughtered for beef.

[2]   Means organizations that are government controlled e.g. Kenya Meat
        Commission.

The figures indicated above captures some of the years when Kenya Meat

Commision (KMC) was operational before its breaf closure from 1985 - 1988. K.M.C.

used to handle a significant portion of beef animals and is a parastatal.

In 1976, the percentage of slaughter cattle handled by parastatals was similar to that handled by traders and butchers. In the years that followed; from 1976 - 1980, there was a steady decline in the proportion handled by parastatals whereas that handled by trades and butchers increased.

From 1981 - 1984, the percentage handled by parastatals increased steadily once again in comparison to that handled by trades and butchers.

Very little information is known about traders and butchers as agents of livestock marketing but their role is evidently significant. As of now virtually all the meat supplies in all urban areas of Kenya is made available through the efforts of traders and butchers.

Recent developments in the beef marketing system in Kenya

Beef prices were decontrolled by the Kenya Government in 1987. This action was meant to allow the forces of supply and demand to operate and therefore encourage competition in the beef industry. Theoretically, a free market provides an environment in which resources can be allocated efficiently. This would mean that decontrol of the beef industry would enable the industry to operate more efficiently. This will however, be constrained by other factors such as transport, infrastracture, credit availability. This operational efficiency is depicted in the Figures shown below.

Figure 1.2: **Economic efficiency versus operational efficiency.**

Index of Economic efficiency

Economic
efficiency

Operational
efficiency

Scale of operation
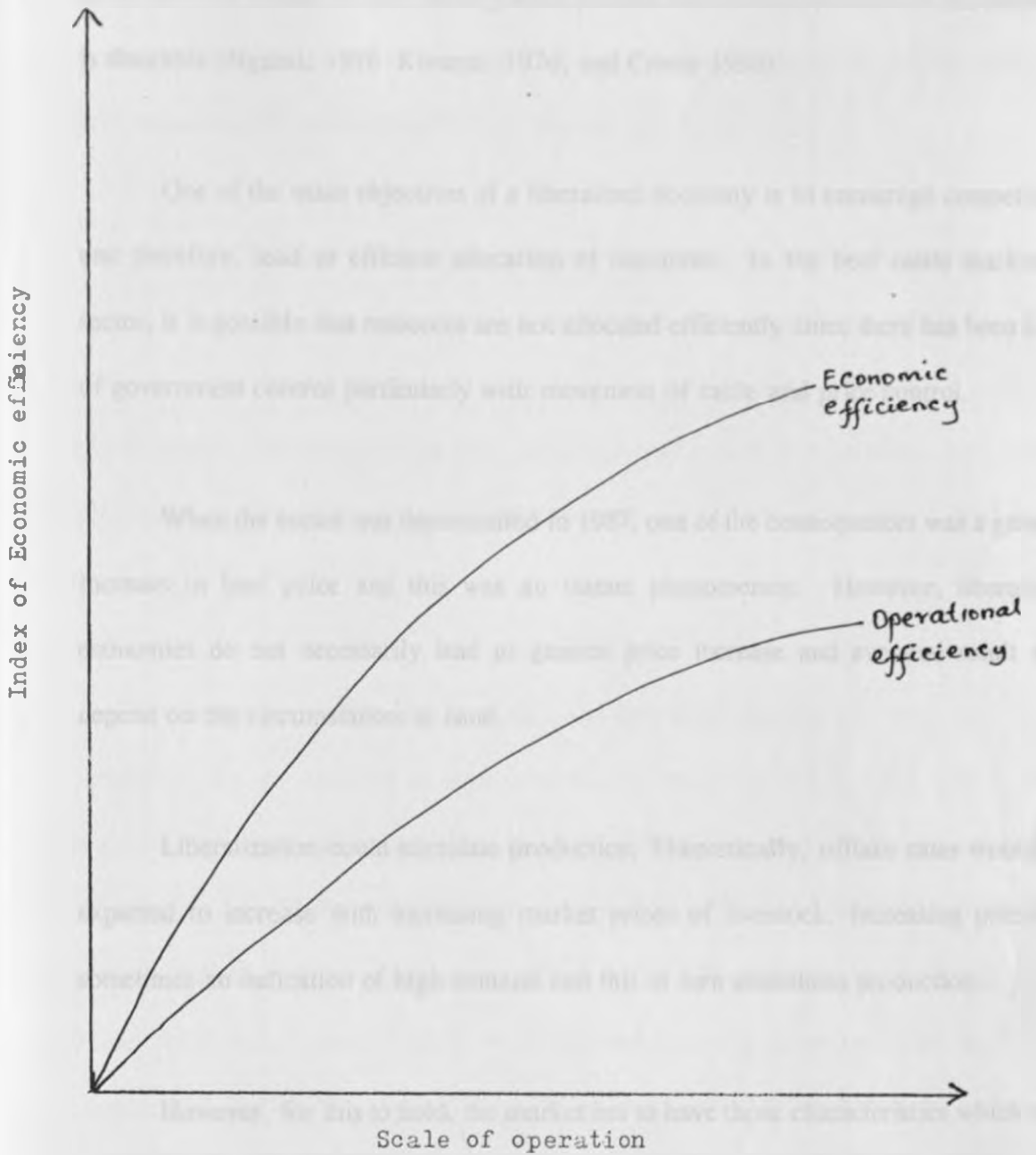
Source: Bressler and King, (1967).

Most previous studies on this industry have pointed out that liberalization of the industry is desirable (Ngumi, 1976 Kivunja, 1976, and Crotty 1980).

One of the main objectives of a liberalized economy is to encourage competition and therefore, lead to efficient allocation of resources. In the beef cattle marketing sector, it is possible that resources are not allocated efficiently since there has been a lot of government control particularly with movement of cattle and price control.

When the sector was decontrolled in 1987, one of the consequences was a general increase in beef price and this was an instant phenomenon. However, liberalized economies do not necessarily lead to general price increase and eventual result will depend on the circumstances at hand.

Liberalization could stimulate production. Theoretically, offtake rates would be expected to increase with increasing market prices of livestock. Increasing prices is sometimes an indication of high demand and this in turn stimulates production.

However, for this to hold, the market has to have those characteristics which will encourage competition and therefore, an increase in market prices is not necessarily an indication of increased demand nor does it lead to increased off-take rates.

In the event that constraining factors such as lack of market information, monopolistic tendecies and all the factors that lead to inefficiencies are greatly reduced, then increasing demands should lead to increasing off-take rates.

An increasing off-take rate is important for producers of livestock, particularly those that rely on it as its main source of income as is the case in Baringo District. This will ensure an expanding income base to cope up with increasing demands. It will also lead to other investments and therefore, lead to overall growth in such areas. Integration with other sectors of the economy and also other areas of the country will also be promoted.

Although available data is scanty and prevailing beef prices vary, there are indications that the response to price liberalization has been good. For example, real prices have generally gone up, gross marketed production in terms of volume and value has also gone up. These observations are summarized in Table 1.7 which shows that the number of cattle and calves sold for slaughter in 1987 increased by 22.7% compared to that of the previous year (-18.5%) while that of sheep and goats increased by 19.7% compared to -8.26% the previous year. In terms of value, Table 3.4, gross marketed production of cattle and calves for slaughter increased in 1987 by 23.3% compared to 19.8% the previous year, while that of sheep, goats and lambs for slaughter increased by 37.7% in 1987 compared to 46.4% the previous year. This responce could however, be due to other factors other than the liberalization of the sector.

The lower percentage increase in value of marketed small stock was probably due to a shift by most traders to the larger stock on account of their higher profits. This is, however, hard to document presently due to inadequate data.

Table 1.7: Purchases of livestock for slaughter by all licensed

Abattoirs 1980-1987

('000 Head)

	Year							
	1980	1981	1982	1983	1984	1985	1986	1987
Cattle & calves	67.7	55.9	310	384	614	524	427	524
(Growth %)		-17.4	454.6	23.9	60	-14.7	-18.5	22.7
Sheep & goats	10.1	6.2	108	293	405	327	300	359
(Growth %)		-38.6	1641.9	171.3	38.2	-19.3	-8.3	19.7
Pigs	34.1	28.3	53	64	87	65	77	60
(Growth %)		-17.0	87.3	20.75	35.9	-25.3	18.5	-22.8

Source: Statistical abstract, 1988.

Fig 1.3

Map 1.1

Location Of District

Legend:
- International Boundary
- Provincial Boundary
- District Boundary
- • Towns

1 TRANS NZOIA
2 ELGEYO MARAKWET
3 BUSIA
4 KAKAMEGA
5 UASIN GISHU
6 KISUMU
7 NYERI
8 KIRINYAGA
9 KIAMBU
10 NAIROBI
11 MOMBASA

Fig. 1.4

Map 1.2

BARINGO DISTRICT

ADMINISTRATIVE BOUNDARIES

Legend:
- ● —·—·— URBAN CENTRES
- ▲ —·—·— RURAL CENTRES
- —·—·— DISTRICT BOUNDARY
- ———— DIVISION BOUNDARY
- ———— LOCATION BOUNDARY
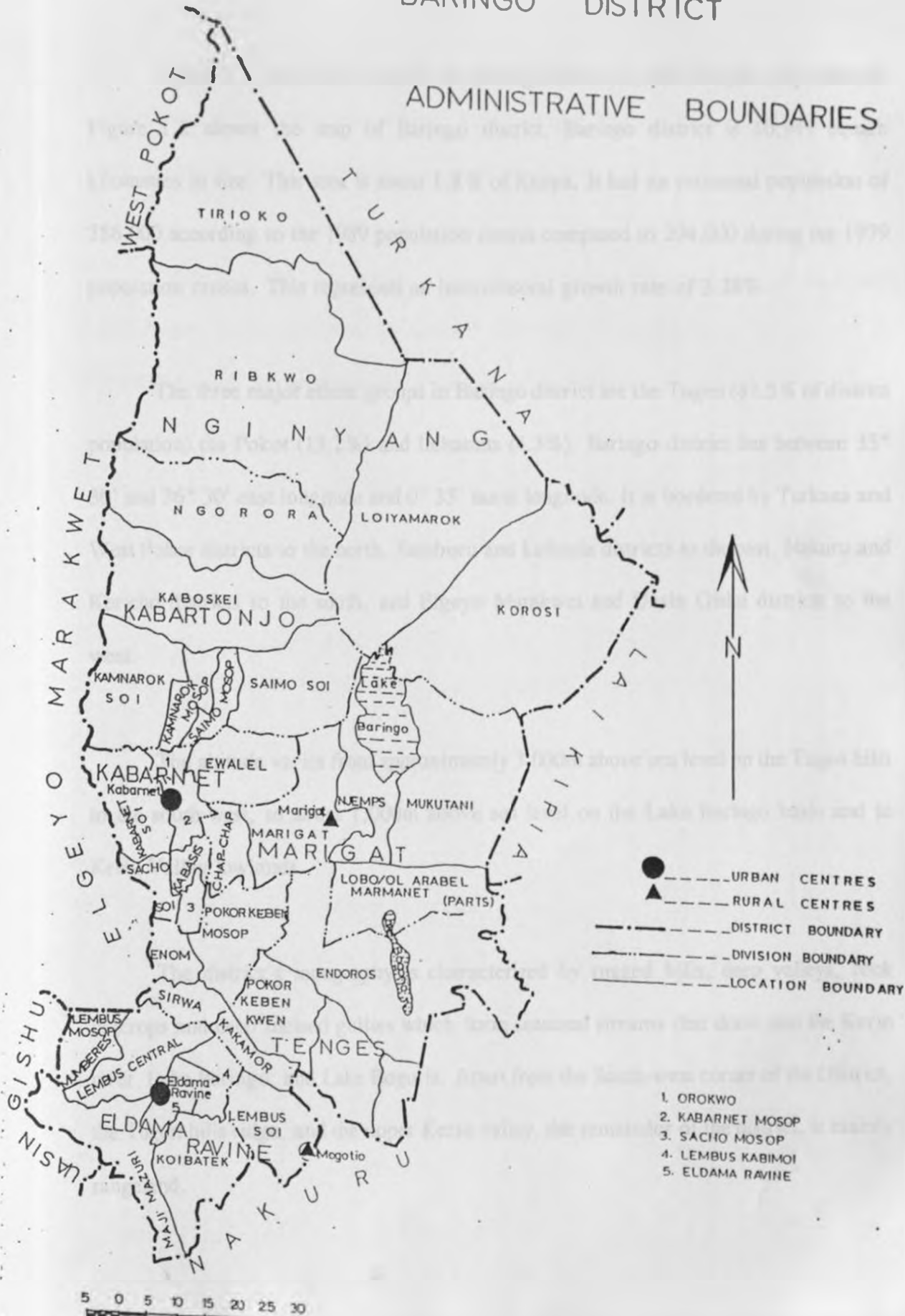
1. OROKWO
2. KABARNET MOSOP
3. SACHO MOSOP
4. LEMBUS KABIMOI
5. ELDAMA RAVINE

5 0 5 10 15 20 25 30

1.3   THE STUDY AREA

Figure 1.1 shows the location of Baringo district in the Kenyan map whereas Figure 1.2 shows the map of Baringo district. Baringo district is 10,949 square kilometres in size. This area is about 1.8% of Kenya. It had an estimated population of 286,000 according to the 1989 population census compared to 204,000 during the 1979 population census. This represents an intercensoral growth rate of 3.38%.

The three major ethnic groups in Baringo district are the Tugen (82.5% of district population) the Pokot (13.2%) and Ilchamus (4.3%). Baringo district lies between 35° 30' and 36° 30' east longitude and 0° 35' north longitude. It is bordered by Turkana and West Pokot districts to the north, Samburu and Laikipia districts to the east, Nakuru and Kericho districts to the south, and Elgeyo Marakwet and Uasin Gishu districts to the west.

The altitude varies from approximately 3,000m above sea level on the Tugen hills to the south-west, to about 1,000m above sea level on the Lake Baringo basin and in Kerio Valley lowlands.

The district's topography is characterized by rugged hills, deep valleys, rock outcrops and deep incised gullies which form seasonal streams that drain into the Kerio river, Lake Baringo, and Lake Bogoria. Apart from the South-west corner of the District, the Tugen hills ridge, and the upper Kerio valley, the remainder of the district, is mainly rangeland.

Climate and land use

Baringo district is an arid district save for the high catchment areas in the hills and highlands. Rainfall varies between 1000 mm to 1,500 mm in the highlands and 300 mm to 600mm in the north-eastern part of the district.

Typically, the rainy season is from March to September with a maximum in May and August and a minimum in January. The table presented below summarizes the average rainfall for several selected stations in the district.

Table 1.8: **Average annual rainfall in Baringo district**

Station	Total years Recorded	Rainfall (mm)
Kapedo (North)	10	377
Eldama Ravine (South)	61	1,119
Kabarnet (Central)	55	1,346
Kabartonjo	29	1,445
Tenges (South)	21	1,138
Perkerra Irrigation (Marigat)	20	652
Barwesa (Kerio Valley)	17	915
Nginyang'	26	584
Lake Baringo	10	693
Londiani (Makutano)	16	1,558

Source: Records of Meteorological Department, Ministry of Environment and Natural Resources

In terms of land use some areas in Baringo district are mainly used for crop farming. These areas include the top of Tugen hills and Eldama Ravine in addition to the Perkerra and Liboi irrigation schemes. Secondly, there are semi-pastoral zones where

relatively more people in the district practice dryland farming in addition to keeping livestock. The district also has the typical pastoral areas where more than 50% of the food and income is derived directly from livestock.

Table 1.9: Land use patterns. Baringo district

Description	Land use
45% - Too steep or too dry for Agriculture	Inner lowland and lower midland ranching zones. except on alluvial valley soils with ground water suitable for irrigation
35% - Semi-arid; very risky for Agriculture	Livestock sorghum and Livestock-millet; suited to both.
15% - Semi-arid; weak performance in agro-humid seasons	Maize-sunflower and marginal cotton on alluvial fans with ground water good for cotton on limited acreages. livestock kept.
1.5% (Tugen hills)	Coffee and dairy Zone. Marginal due to moisture. altitude and soils; gully erosion on eastern slopes. sheet erosion or western slopes.
2.5% (South-west corner)	Wheat/maize barley and dairy

Source: Farm Management Hand book Vol. IIB. Ministry of Agriculture

It can safely be said that the majority of the people in Baringo District depend mainly on livestock for their subsistence and income (see Table 1.10).

The major occupations in the agriculture/livestock sector are small-scale farming, pastoralism and the cooperatives that deal in farm products employing 87% of the district's labour force in 1988. It is because of this that the main thrust of government development programmes have been directed towards assisting livestock keepers. Such development programmes include the Baringo pilot semi-arid area project (BPSAAP) in Central Baringo and the sheep and goat development project in the Southern part of the district (Kimose).

The BPSAAP is expected to benefit livestock producers currently holding approximately 27% and 36% of the cattle and small ruminants of the entire district, respectively. Table 1.7 presents estimates of livestock population in Baringo district for the period 1987-1990. These figures show that within this period, there has been a remarkable increase in the number of dairy cattle with an increase of 93.6% while that of beef cattle increased by 46.7%. That of sheep and goats has been relatively stable.

Table 1.10: Labour force and employment estimates - Baringo district

	1988 (Est.)	1988 % of labour force	Target annual growth rate	1993 (No.)
Population	305,653		3.1%	355,674
Labour force	117,331	100	3.53%	139,546
Employment Estimates				
Non-Agricultural usage				
Public sector	8,800	7.5	1.5%	10,202
Private Formal sector	2,933	2.5	3.5%	3,483
Private informal sector/ small scale business	3,403	2.9	5%	4,393
Agricultural/livestock employment				
Cooperatives and Ranches	11,381	9.7	5.4%	14,804
Smallholders (crop- livestock farming) (27,608 households)	69,108	58.9	3.2%	80,984
Pastoralist (7,968 households)	19,946	17	3.5%	23,690
Other (famine relief, landless)	1,760	1.5	3%	2,040

Source: Central Bureau of Statistics and District Statistical   Survey

Table 1.11: Estimated livestock numbers in Baringo district: 1987-1990

Year	Dairy cattle	Beef cattle	Goats	Sheep	Donkeys	Camels
1987	47,000	150,000	650,000	216,000	4,000	4,000
1988	61,000	131,000	700,000	200,000	4,000	4,000
1989	81,709	202,000	700,400	220,000	4,300	5,800
1990	91,000	220,000	780,000	242,000	4,623	5,916

Source: Baringo district livestock marketing division annual report, 1989.

1.4   PROBLEM STATEMENT

Kenya's economy is mainly agriculturally based. Agriculture contributed 28.2% to the national GDP in the year 1990 (Kenya Government, 1990). The livestock sector on the other hand makes up a considerable portion of our national marketed produce. Its figure stood at 26% in the year 1990.

In Kenya, beef is marketed largely by individuals and less significantly by parastatals such as the Kenya Meat Commission (KMC). Beef cattle are mainly produced in pastoral districts of Kenya and channelled to abattoirs which are strategically located

close to major urban areas. It is worth noting that elaborate beef processing and grading in Kenya is not widespread partly due to lack of necessity to do so and partly due to non devotion of resources to such ventures.

Price decontrol which had been advocated by many authors such as Aldington and Wilson (1968), Kivunja (1976); Tewoldeberhan, (1976), was finally instituted in the Kenyan beef sector in February 1987. The objective was to provide incentives by letting market forces come into play and therefore determine prices that are favourable to all market participants.

Market forces provide an effective price-making mechanism if a marketing system is both competitive and efficient (Bressler and King, 1990). Baringo is largely a pastoral district and the major source of income is livestock. It is therefore important to the welfare of the farmers in the district that livestock prices are sufficiently high in order to boost their income and stimulate high offtake rates. In most African countries there is a severe paucity of time series data on livestock prices as well as on the performance and efficiency of the livestock marketing system.

In many intances, policy decisions on livestock marketing are taken in the absence of vital information on how they affect livestock producers, traders, slaughter houses, butchers and consumers.

In theory, profit maximization under perfect competition occurs where price equals the long run marginal cost. In contrast, the condition under monopoly and oligopoly are different. Under monopoly, profit maximization does not necessarily occur where price equals marginal cost but rather where the marginal cost equals the marginal revenue.

Under monopoly however, price is greater than the marginal cost thus consumers pay for the last unit an amount that exceeds the opportunity cost of producing it. At this point, the marginal revenue equals the cost of production. Monopolists are therefore, efficiently productive but allocatively inefficient.

Under oligopoly, a few firms are involved in production. These firms will therefore, face a downward sloping demand curve such as that of monopoly. In such situations, marginal revenue is less than price and oligopoly is therefore, also allocatively inefficient.

Under perfect competition, farm incomes would generally be expected to be greater because at the point where farm output is optimal, price of output would equal marginal cost.

Allocative efficiency.

Refers to the allocation of resources among the economy's various industries; it obtains when it is impossible to change that allocation in such a way as to make someone better off without making a way as to make someone else worse off (Lipsey, 1983).

The allocation of resources among commodities is efficient when, for each commodity, price equals marginal cost. This is the situation that prevails under perfect competition and is shown by the Figure 1.5 below

Fig. 1.5:   Relationship between price per unit and quantity of a commodity in a efficient market (competetive)

Price per unit

$S = MC$

p^*

D

O

q^*
Quantity
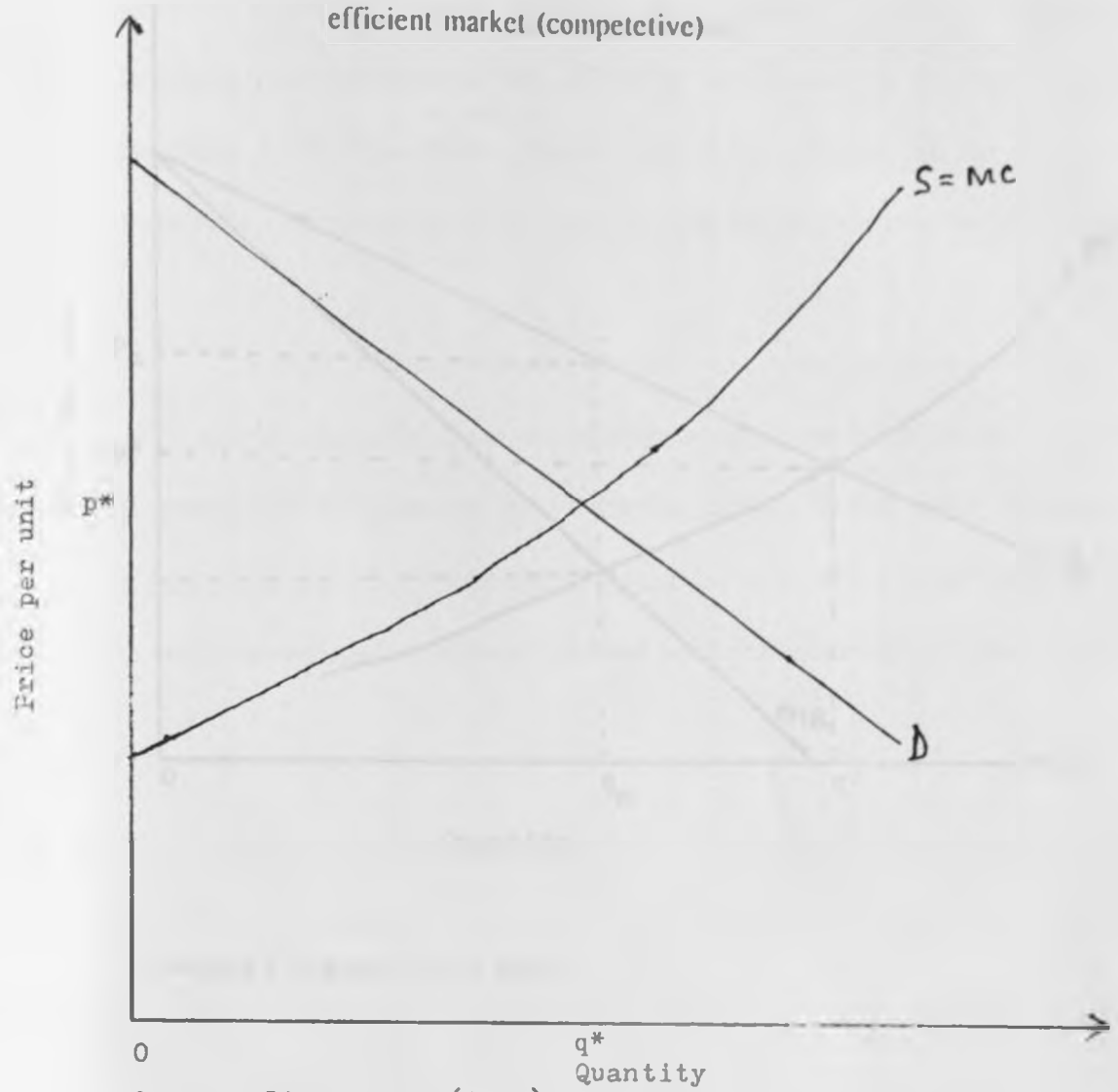
Source: Lipsey R.G (1983)

Fig. 1.6:   Relationship between price per unit and quantity of a commodity in monopolistic market (inefficient)
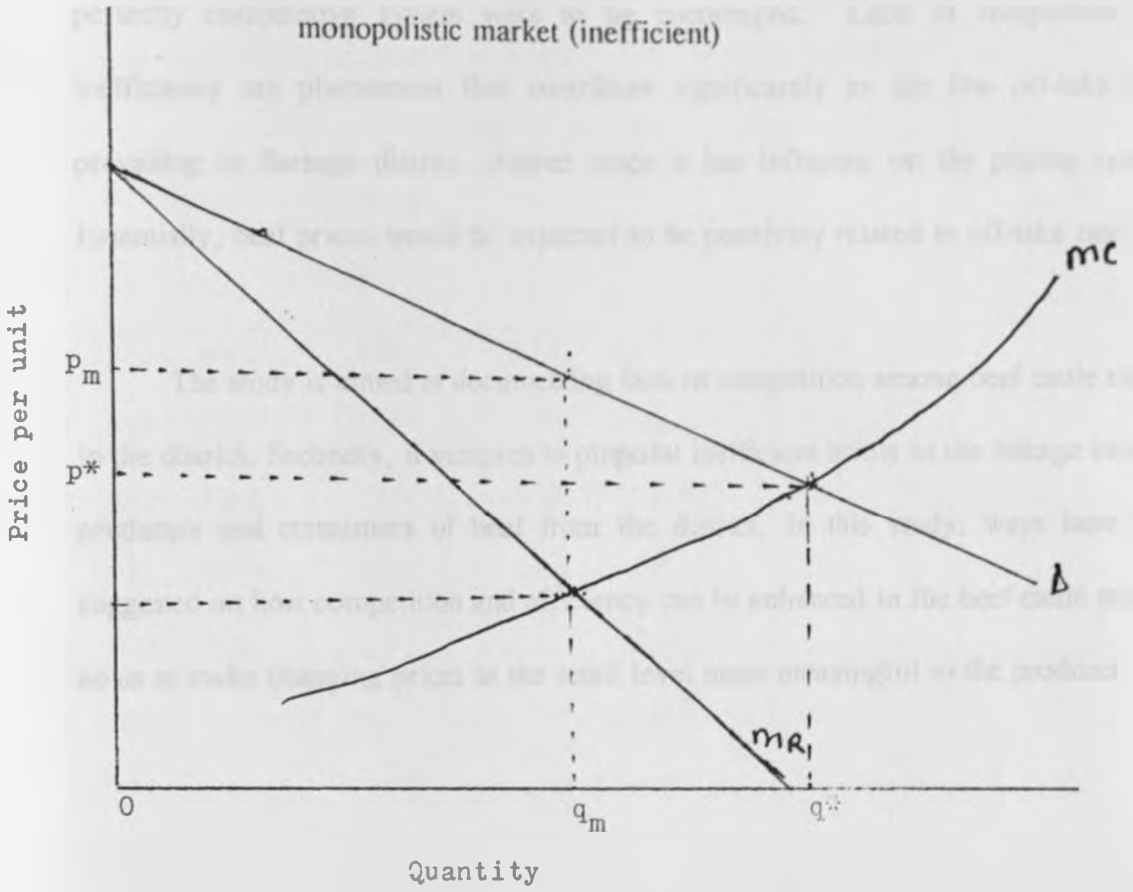
Source: Lipsey R.G (1983)

Income from livestock sales would be boosted if conditions that approached a perfectly competetive system were to be encouraged. Lack of competition and inefficiency are phenomena that contribute significantly to the low off-take rates prevailing in Baringo district district since it has influence on the pricing system. Essentially, beef prices would be expected to be positively related to off-take rates.

The study is aimed at documenting lack of competition among beef cattle traders in the district. Secondly, it ventures to pinpoint inefficient levels in the linkage between producers and consumers of beef from the district. In this study, ways have been suggested on how competition and efficiency can be enhanced in the beef cattle markets so as to make changing prices at the retail level more meaningful to the producer .

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Table 1.12:   Cattle numbers in Baringo District, its offtake rates And relation to beef

cattle numbers in kenya

Year	Beef cattle In kenya ('000)	Estimated Cattle Numbers In baringo ('000)	Perecent National Beef herd	No. of hides sold in Baringo	*offtake Rate (%)
1980	8600	159	1.85	23,576	14.8
1981	8330	175	2.10	16.104	9.2
1982	8760	121	1.30	16.425	13.5
1983	8676	130	1.40	16.284	12.5
1984	7682	-	-	242,333	-
1985	-	100	-	23,612	23.6
1986	-	-	-	23,612	-
1987	-	197	-	22,003	11.2
1988	-	192	-	35,615	18.5
1989	-	284	-	41.925	14.8
1990	-	311	-	39.975	12.9

Source: 1. Baringo district Agricultural Annual reports

1980-1983.

2. Baringo district livestock annual reports

1986-1990.

3. Baringo district hides and skins annual reports

(1981-1990).

In 1984, there was severe drought in Kenya. This fact can be attested to by the very low figure of cattle numbers in 1985. From then on, there was a tremendous increase in cattle numbers in the subsequent years following improved weather conditions.

Hides and skins do not necessarily correspond to the livestock numbers slaughtered but are used here as a proxy to work out off-take rates on relative terms.

1.5 OBJECTIVES OF THE STUDY AND HYPOTHESES

Objectives

Overall objective

To study the beef cattle marketing system in Baringo District, Kenya.

The specific objectives of the study are as follows:

1. To document the movement patterns of cattle within and out of Baringo district.

2. To establish the degree of competition among buyers in Baringo beef cattle markets.

3. To estimate pricing (Allocative) efficiency in Baringo beef marketing system.

4. To identify where and at which levels the efficiencies exist.

Hypotheses

1. That the Baringo beef marketing system is allocatively inefficient.

2. That the level of competition among buyers in Baringo beef cattle markets is low.

CHAPTER 2

LITERATURE REVIEW

2.1   THEORETICAL ASPECTS

Market structure refers to the organizational characteristics of a market, and for practical purposes to those characteristics which determine the relations of seller in the market to each, buyers in the market to each other, sellers to buyers, and sellers established in the market to potential new firms which might enter it.

In other words, market structure, for practical purposes, means those characteristics of the organization of a market that seem to exercise a strategic influence on the nature of competition and pricing within the market (Bain, 1968).

The most salient aspects or dimensions of market structure are; the degree of seller concentration-described by the number and the size distribution of sellers in the market, the degree of buyer concentration described by the number and the size distribution of buyers in the market, the degree of product differentiation as among the outputs of the various sellers in the market - that is, the extent to which their outputs (though similar) are viewed as non-identical by buyers and the condition of entry to the market-referring to the relative ease or difficulty with which new sellers may enter the market, as determined generally by the advantages which established seller have over potential entrants.

Seller concentration refers to whether the number of sellers in a market is one, few, or many (monopoly, oligopoly, atomism) and to the relative sizes of sellers with any given number. Theory and observation suggest that the character, intensity and effectiveness of competition among sellers will be significantly influenced by the degree of seller concentration.

Buyer concentration has a similar significance in determining the character of competition among buyers and the character of the relationship between buyers and sellers that condition ultimate market performance. Product differentiation refers, for example, to whether on one hand the products of competing sellers in a market are viewed as identical (homogeneous) by buyers, or on the other hand, differences in equality, design, packaging or reputation among the competing products lead various buyers to have various degree of preference for certain of these products as compared to others.

The extent to which competing products in a market are differentiated may clearly be expected to influence the competitive interrelationships of sellers in the market, their conduct, and their market performance.

The condition of entry, or height of barriers to new entry to a market, characterizes the extent to which established sellers have advantages over potential entrant sellers. It thus determines the relative force of potential competition as an influence or regulator on the conduct and performance of sellers already established in a market.

MARKET PERFORMANCE

At first glance, the concept of efficiency would seem to be relatively simple (Bressler & King 1970). If we know what inputs are used in a particular process and we know what output results, a simple ratio of output to input provides a measure of productivity. An increase in this ratio from one time period to another would clearly seem to be an improvement in the efficiency of the process.

Economic efficiency is equivalent to the inverse ratio of average cost (Bressler, 1967). The relationship between the index of economic efficiency and the index of average cost is illustrated in the figure below.

Figure 2.1

A Hypothetical example of the relation of economic efficiency to scale of operation and
to the usual concept of economies of scale.

Scale of operation (output per production period)
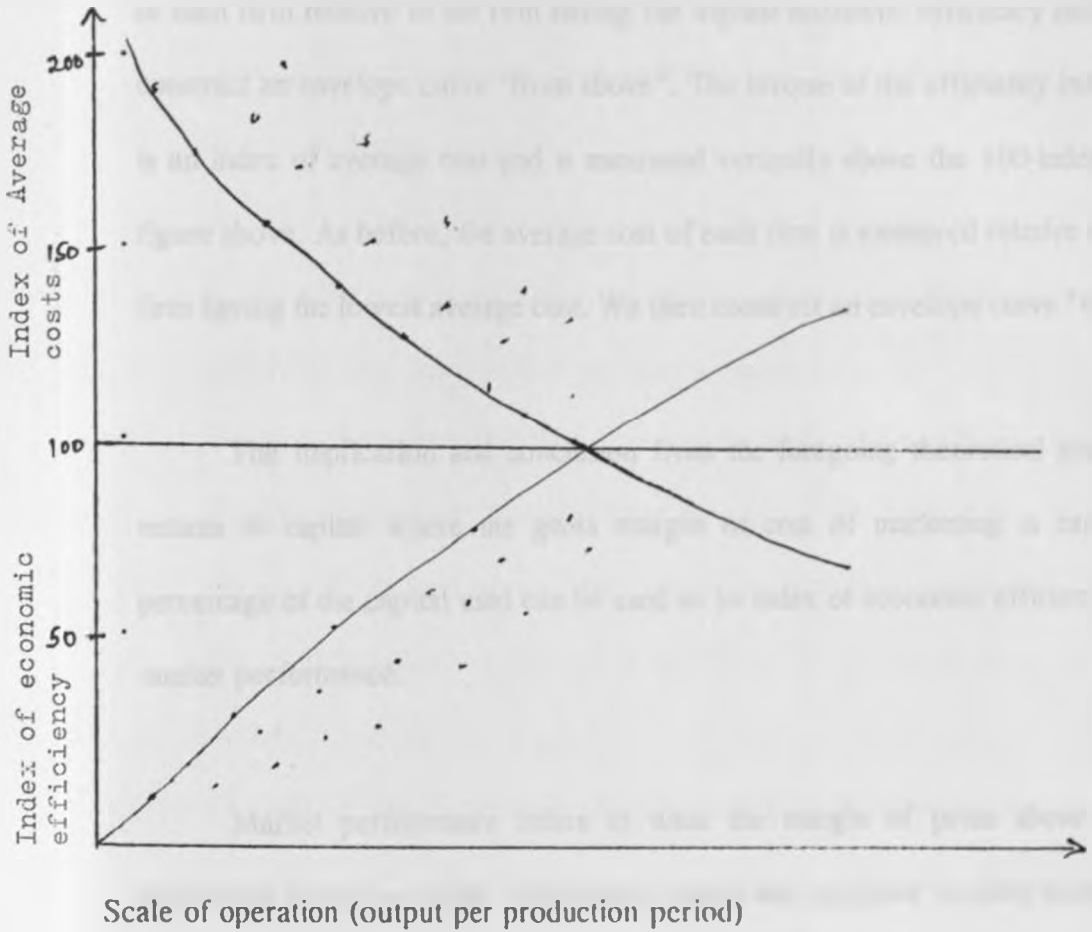
Source: Bressler and King, (1967).

The horizontal axis represents the scale of operation of the firm measured in terms of output per production period. Firm observations are arranged along this axis with the vertical distance below the 100-index line measure of the economic efficiency of each firm relative to the firm having the highest economic efficiency index. We then construct an envelope curve "from above". The inverse of the efficiency index of a firm is an index of average cost and is measured vertically above the 100-index line in the figure above. As before, the average cost of each firm is measured relative to that of the firm having the lowest average cost. We then construct an envelope curve "from below".

The implication and conclusion from the foregoing theoretical analysis is that returns to capital where the gross margin or cost of marketing is expressed as a percentage of the capital used can be used as an index of economic efficiency and hence market performance.

Market performance refers to what the margin of price above the cost of production turned out to be, and whether output was restricted in order to reap an excess profit, however the result was achieved (Bain, 1968).

Market performance thus refers for sellers to the character of their adjustments to effective demands for their outputs within the limits described above. From a normative standpoint, the question is how well the adjustments made contribute to an effective performance to the entire economy.

The principal aspects of dimensions of the market performance of an industry include:-

(a)   the relative technical efficiency of production so far as this is influenced by the scale or size of plants and firms (relative to the most efficient) and by the extent, if any, of excess capacity

(b)   the height of selling price relative to the long-run marginal cost of production and to the long run average cost of production (usually about the same as the long run marginal cost), and the resultant profit margin

(c)   the size of industry output relative to the largest attainable consistent with the equality of price and long-run marginal cost

(d)   the size of sales promotion costs relative to the cost of production

(e)   the character of the product or products, including design, level of quality and variety

(f)   the rate of progressiveness of the industry in developing both products and techniques of production, relative to rates which are attainable and also economical in view of the costs of progress.

2.2   RELEVANT EMPIRICAL STUDIES

Although there is a substantial amount of literature on livestock, specific studies relating to Kenya are relatively few. The various aspects that have been studied in the

livestock sector are on production and marketing. Those types of livestock that have been studied extensively along these lines are the small ruminants and cattle.

No work has, however, been done on competition and pricing in the area of beef cattle marketing and it is hoped that the results of this study will provide the necessary information on these issues. Particular emphasis is placed on the fact that this study has been narrowed down to a district level and having in mind that previous studies have been on larger scales.

Some studies that are related to this study were reviewed so as to give an overview of some of the relevant studies that have been done on beef cattle marketing

The study looks at the level of competition in beef cattle markets in Baringo district. In order to enhance competition in the long run, Aldington and Wilson |1968| advocated that in some areas, it was possible to increase the regularity of county council auctions to hold specialized slaughter stock sales |as opposed to a mixture of immatures and slaughter stock| at places convenient to local butchers and traders. This would benefit both the producer and the consumer. This arguement by the authors does not seem to have been given priority by our policy makers since there is no evidence of specialized slaughter stock sales auctions in Kenya hence the difficulty in enhancing competition in cattle markets. Regularity of auctions has, however, been improved significantly.

Theoretically, homogeneity in products is an essential prerequisite to competition and therefore the setting up of specialized slaughter stock sales would go a long way into achieving this.

The Kenya government as of now has already initiated steps towards a free market in the beef markets by decontrolling prices. In the light of this development, it is worth commending the authors for recognizing at the time that it was becoming incresingly necessary to structure the market organization in favour of a free market, so that the less desirable effects of its operation, for example the spread of disease were strictly limited.

The authors in emphasizing the need for cooperation and consultation between participants of the beef marketing sector, argued that unless imposed arrangements were carefully tailored to market requirements, one would at best expect only general disinterest from producers, traders and butchers and at the worst more deliberate avoidance.

They felt that although the local authorities were in the best position to increase the regularity and scope [in a geographical sense] of slaughter stock auctions, they considered that a much broader view had to be taken of the problem. They suggested that producers, butchers and traders should be consulted on market requirements, suitability of locations and watering and transport amenities.

In Baringo district, most producers sell their livestock when they want to settle financial committments such as paying school fees and buying food. The implication is that profit making is not a driving force to producing and selling more livestock. In the livestock markets, some large traders make use of agents to purchase livestock. This amounts to collusion which has the effect of depressing prices. The producers therefore tend to become price takers since they act on individual basis and have no "forum" for arguing for higher livestock prices.

In proposing a policy measure to increase the supply of beef, Kivunja [1976] suggested that producer prices should be increased, at least to their export parity level. He also advocated for the liberalization of the Kenya meat commission cattle and beef prices, by making them flexible and responsive to the conditions obtaining, in the cattle and beef markets at any recognizable period of time. The author therefore recognized the fact that buyers could take advantage of producers' plight to depress prices and hence the need to intervene but he ignored that profit making may sometimes not be a driving force to sell. In most pastoral areas, Baringo district included, marketing costs are proportionately high because of trekking over long distances and losses through death and theft. Producer prices therefore tend to be too low compared to consumer prices. Although not working on livestock, Ommeh [1984], observed that if consumers' final price is known to be high but the price to the producer is considered to be low, then one can determine if the consumer-producer price spread is unjustifiably too high by estimating the magnitude of the actual marketing cost. She argues that if marketing costs

could be significantly reduced in any way, it will be possible to pay the producers a higher price without affecting the final price to the consumers. This factor is the essence of improved marketing efficiency. She continues to argue that an effective method of minimizing the marketing cost in general and the transit losses would probably be to change the system of remuneration of those people who influence the cost associated with the marketing system. She also mentions that economic conditions in the major consuming countries would affect the product market, so that actions in the producing countries alone might not improve efficiency in the overall marketing system. The author concludes that joint efforts are needed to improve the marketing system.

However, the author fails to propose a formular that can be used so as to change the system of renumeration of those who influence the cost of marketing without hampering the competetive spirit. Such an action would require some policy changes and enforcement agents which to some extent might not augur well with the marketing middlemen.

Empirical studies on the beef retailing system in the Nairobi metropolitan area indicate that conditions for competition were largely lacking (Karugia, 1990). He reports that the results of his analysis also show that the system is inefficient both technically and allocatively. He continues to add that the results of relative technical efficiency comparisons indicate that low class butcheries were less technically efficient than the high class butcheries. Similarly, the results indicate that low-volume butcheries could increase

their technical efficiency by raising the level of their sales. The author argues that these indicators of competition that were investigated were found not to be restrictive to the development of a competetive beef retailing system. Retailer concentration was generally low and conducive to competition. Similarly, vertical and horizontal integration were not prominent enough to constitute a serious threat to the development of a competetive beef retailing system. The large number of retailers would be expected to ensure a competetive environment. However, there were some serious impediments to competition in the retailing system in the form of difficult market entry conditions and low market transparency.

In the investigation of market entry conditions, the author found that trading licences were relatively easy to obtain and thus could not significantly contribute to lack of competition. However, he found that lack of bisiness premises and high initial capital requirements appeared to be serious enough to restrict entry into the system. With regard to market transparency, market information sources could not be trusted to provide adequate and reliable information. Uniform grading standards for beef were also lacking and this greatly reduced market transparency. The author continues to argue that the effect of high entry barriers and low market transparency was that collusive behaviour among butchers was enhanced. Retailers were constantly in contact because they obtained their supplies from only one or few sources and that their butcheries were close were close to each other. He concludes that with such close contacts, butchers could informally fix consumer prices. Without proper information on wholesale prices and given their wide range, buthers appeared to be seeking high margins as a hedge againt price uncertainties.

Concerning efficiency, the author found that butcheries were operating at very high unit costs which resulted from the fact that most butchers bought already slaughtered animals as well as renting premises. He suggests that efficiency could be greatly improved if butcheries increased their volume of sales. But this suggestion appears out of tune with the author's observation later that, the effect of high trade margins is high consumer prices and price spread and that this is disadvantageous to both consumers and producers. Under such circumstances, consumers would logically have to pay high prices to obtain beef while producers on the other hand would receive comparatively low remuneration and would respond by reducing production assuming that they are price responsive. The implication is that incentives to step up production or sales volumes would have to be looked into before contemplating increased butchery sales. Perhaps the author should have suggested the introduction of an income averaging trust account or the establishment of a modified Agricultural stabilization board programme to guard against the problem of variability of price and income. Price and income are the major concerns of all the participants in the beef retailing system and it would serve them well to ensure consistency in both. The author should however be commended for documenting that the beef retailing system in Nairobi metropolitan area was seriously affected by conditions of difficult market entry and low market transparency which are serious impediments in the beef marketing system in general.

A significant number of cattle sold in the Baringo beef cattle markets end up in Nakuru town. The prevailing market conditions in Nairobi would be expected to match

that of Nakuru by virtue of its urban nature and population as well as nature of beef outlets. The town is also close to Nairobi. The results of the foregoing study are relevant for this particular study.

As for the Baringo beef cattle markets, low marketing costs would benefit the local producers if they come together as groups so as to have a greater bargaining power for better prices. As for now, virtually all producers operate individually and hence cannot benefit from any favourable change in the market process.

CHAPTER 3

METHODOLOGY

3.1   MODEL FORUMULATION

The model of analysis used is that of industrial organization (structure, conduct and performance). The usefulness of this model stems from the fact that we are able to employ tools and methods applicable in the normal business world. This model was also the most appropriate for the data that was collected. It employs theoretical tools of perfect competition which prevail when conditions of existence of perfect knowledge, homogeneity of products, unrestricted entry, many buyers and sellers, and economic rationality of market participants are satisfied.

The emphasis is placed on the analysis of the market structure and economic performance using indicators.

Market structure

This is defined as those characteristics of the organization of a market which seem to influence strategically the nature of competition and pricing within the market (Bain,1968).

Market structure lays emphasis on the environment in which firms operate and this is normally referred to as the economic environment surrounding firms in an industry.

These characteristics which influence the nature of competition and pricing within the market include; degree of seller concentration, degree of buyer concentration, degree product differentiation and conditions of entry into the market.

The lower the concentration ratios, the more we expect the market to be competitive.

Market performance

In this study only the pricing efficiency as a goal was analyzed due to its relevance to the intended study.

3.2.   METHOD OF ANALYSIS.

Competition

To analyze the degree of competition, the following variables were examined:-

Degree of buyer concentration

As outlined by Bain (1968), the questions normally posed concerning concentration are:-

(i)   whether the number of sellers in an industry is "small" or "large".

(ii)   whether the shares of the market controlled by some or all sellers are large enough so that an "oligopolistic interdependence" of their price, output and related policies in the market may be presumed to exist.

(iii)   if oligopolistic interdependence does exist, how strong   is it as determined by the sizes of the market shares of some or all sellers.

Table 3.1:   The Bain industry classification on the basis of sales shares of the first 4
              and 8 largest firms.

Type	% share of the 4 largest firms	% share of the 8 largest firms	No. of sellers	Description
I	> 90	> 90	Very few	Oligopoly
II	65-75	85-90	Few	Highly concentrated
III	50-65	70-85	< 100	High-moderate concentration
IV	35-50	45-70	Large	Low-moderate concentration
V	< 35	< 45	Very large	Moderate concentration with large competetive fringe.
VI	Very small	Very small each controlling < 1%	Very large	Atomistic industry

Source: Bain (1968)

The criterion used in this study is adopted from Bain's work, only that in this case, "buyers" is used in place of sellers so as to be able to use Bain's method of analysis.

To judge the degree of competition. Bain (1968) suggested the use of Table 4.3. The classification is based on the market shares of 4 and 8 largest firms as well as the total number of sellers in the market. For the purpose of this study, every cattle trader was considered as a single firm. The markets were considered to be the surveyed cattle auctions where both traders and producers transacted on cattle. The same procedure was used to analyze the three markets.

Horizontal and vertical integration
Horizontal integration

This is the bringing together under one management firms that are at the same level of the marketing channel. In other words it is the merging of firms of competitors

Integration can be justified if it results in an improvement in efficiency other than selfish motives such as market power. Greater efficiency can be achieved if firms integrate so as to exploit economies of scale and reduce their operating costs. Integration would be undesirable if it diminishes competative behaviour of market participants.

In the Baringo beef cattle markets, every individual actively involved in the market was considered as a firm. Horizontal integration was then said to exist when a group of buyers would purchase livestock in an auction as a joint venture. Those individuals that integrated horizontally were identified and effects of their integration on returns to capital was analyzed. This was done by finding out the variable costs that they incurred as a group and the revenue accrued. The difference then gave the gross margin which was used to calculate the returns to capital.

Vertical integration

This is the merging of firms or enterprises at preceding and succeeding levels of the marketing channel. The effects of vertical integration on efficiency and competition are similar to those of horizontal integration. Major motive for vertical integration is retention of higher profit margins. Vertical integration was analyzed in the Baringo cattle markets by identifying those individuals that bought animals, transported them, slaughtered them and then retail sold them. Their gross margins were then computed using the same procedure described in horizontal integration.

The limitations experienced were that most of those individuals that were horizontally integrated were also vertically integrated. Therefore the analysis has been grouped into integration without categorizing them into horizontal or vertical integration. The results therefore have the effects of both categories of integrations.

Barriers to entry

Bain (1968) describes the condition of entry as a structural characteristic of an industry which refers to the advantage which the sellers already established in the industry possess over potential additional sellers who may wish to enter it.

The condition of entry is a measure of the height of barriers to new competition in the industry or the fence which protects established sellers and which added sellers must surmount before they can enter into competition in the field. According to Schmidt (1979), barriers can result from limited know how, capital requirements and institutional restrictions.

The existence of barriers to entry in the Baringo beef cattle markets has been described in accordance with the observed practices at the market place

MARKET   performance and efficiency

Market performance and efficiency focus on the welfare of the citizens. The goals that are normally followed in this aspect are:

(1) efficiency with respect to resource use.

(2) full employment with respect to labour as a   special input

(3) progressiveness

(4) equity i.e. redistribution of national income.

In any marketing system we have producers and consumers at both ends and middlemen of marketing in between. Efficiency means that the market must operate such that each gains. Efficiency is therefore concerned with the optimal allocation of scarce resources and it therefore means that among the various possible ways in which resources can be put to use, there exists one that is optimal i.e. more efficient.

Among the various indicators of efficiency, we have profit rates which is profit expressed as a percentage of the total capital outlay. In the Baringo beef cattle markets, profit rates were calculated for the various channels in existence and that which is optimal was chosen.

The limitation in this method is that there are other indicators of efficiency which could have been pursued but were not feasible due to the modalities involved. There was also the difficulty of not being able to ascertain very clearly the capital that was invested by the various participants in the Baringo beef cattle marketing process.

The limiting line as to whether profit rates are abnormal or normal was also an area which are subject to debate. It therefore meant that a criterion had to be designed so as to categorize the various profit rates realized.

However, the method of determining profit rates is a useful approach since it compares various alternatives of achieving the same objective (transfer of products from consumer to producer) and is therefore a good basis for decision making.

3.3   TYPE OF DATA COLLECTED

(a)   Details of livestock transacted and described by sex and highest prices offered were recorded. The names of both the seller and buyer were also recorded so as to be used in analysis of stracture.

(b)   The pricing efficiency objective was analyzed using marketing costs data obtained from records of a sample of butchers at Kabarnet and bee wholesalers at Mogotio abattoir. This is in recognition that most of the cattle transacted in Baringo are destined for both Kabarnet and Nakur butcheries. Although Nakuru butcheries are supplied from variou abattoirs in Baringo district, Mogotio abattoir supplies a significa portion. Market prices from the livestock transactions data were also use

3.4   Sample population

The method of sampling used was target sampling. To meet the stated objective two sample populations were identified.

The first sample population consisted of the buyers and sellers participating in the livestock transactions in Baringo while the second population consisted of the livestock traded in Baringo district cattle auctions.

An effort was made to use the producer and trader questionnaires shown in the appendix but this was technically not feasible firstly because very few of both could be interviewed while transactions were going on and secondly because auctions were only scheduled once per month in every market. It was therefore decided by the author that in order to get as much information as possible within the little time that was available, it was more reasonable to use the questionnaires as a guideline and the table shown in Appendix 11.

Information was therefore recorded while transactions were going on and this involved recording the name of the seller, the name of the buyer, the price at which the animal was transacted, and the sex of the animal. A few producers and traders were also interviewed in order to elicit some information.

3.5   LIMITATIONS OF THE STUDY

The study was carried out to elicit information regarding beef cattle marketing process in Baringo district. The major limitation of the study was that the whole district could not be covered due to both time and financial constraints. Those regions of the

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district that were studied were therefore those which would, enable us elicit as much information as possible having in mind the prevailing constraints.

The type of data that was collected was also done in a short time that conclusions may be prone to error. Perhaps what would have been better would be to carry out a similar study for upto a period of one year in order for one to make conclusive comments.

The other limitation was that data collected using questionnaires were not sufficient since very few traders and sellers could be interviewed in a given market day.

A study of this nature, particularly that which deals with beef cattle marketing is inevitably limited by lack of adequate time series and secondary data to convincingly articulate the problems that exist. The study is therefore more of a case study.

RESULTS AND DISCUSSION

This chapter presents the results of the empirical analysis as well as the discussion. The chapter begins with a presentation and discussion of the beef marketing system pattern in Baringo district. Secondly, movement patterns of beef cattle within and out of the district is discussed. Lastly, the attention is focused on the structural aspects that determine the competitive behaviour of traders in the sampled cattle auctions in Baringo district over the period may to June 1991.

The degree of buyer concentration and differentiation is analyzed for every auction or market separately while level of integration and barriers to entry are given for the district as a unit.

4.1   BEEF MARKETING SYSTEM PATTERN IN BARINGO DISTRICT

In this section, we present the major beef marketing channels that exist in the district and the contribution by the various cattle auctions to the respective channels. The outcome is summarized in Figure 4.1. This is an oversimplification of the actual situation which is more complex than what is shown here. However, the figure serves to point out areas of importance in

the linkage between producers and consumers of beef.

Fig. 4.1 : Baringo beef cattle marketing system based on 1990 cattle sales
(Percentages are calculated as shown in Table 4.1)
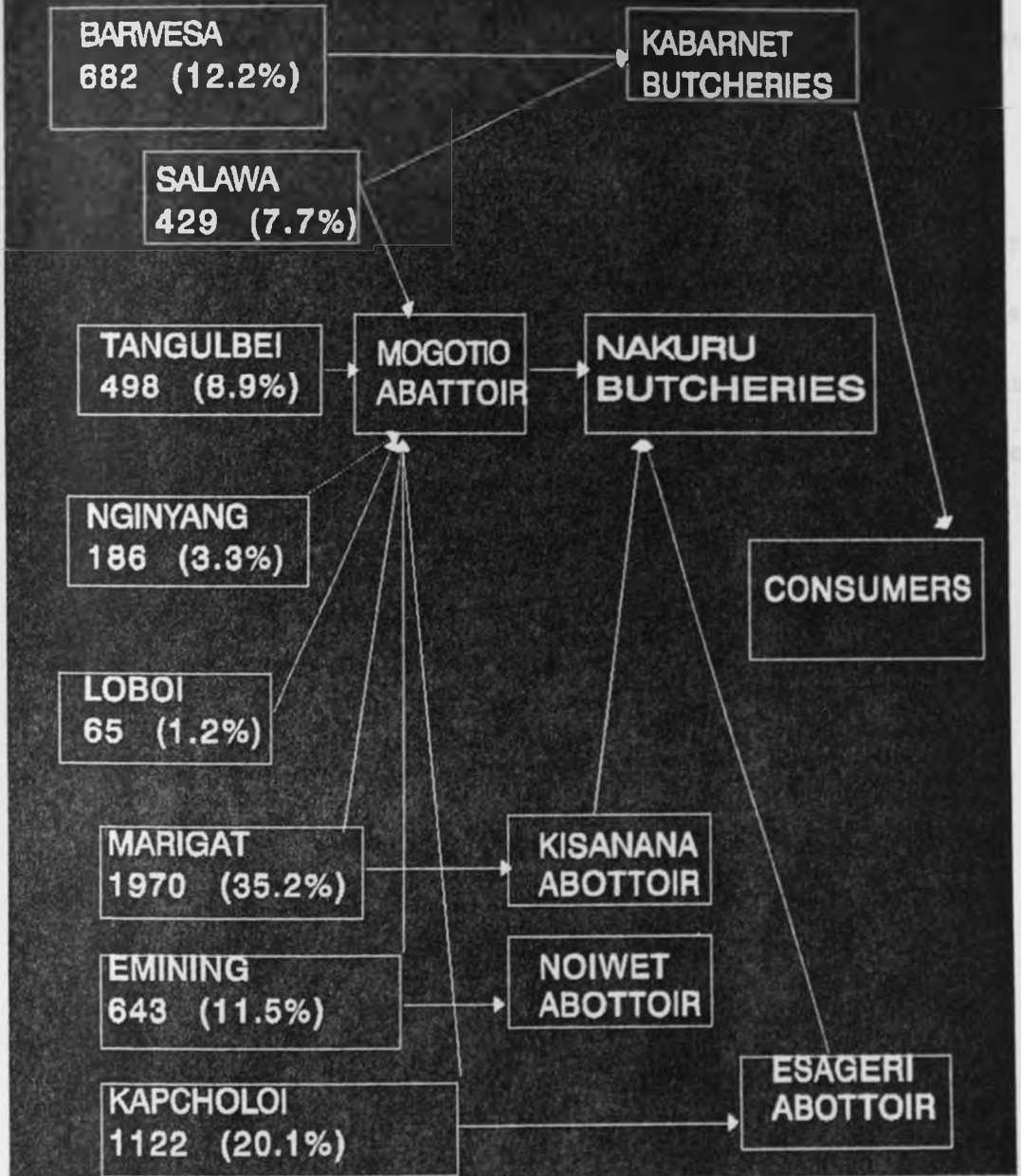
Source: Author's work

From the figure 4.1 and Table 4.3, it can be concluded that the major market for beef in Baringo district is Nakuru town which took 82 percent of total cattle movement in 1990/1991 as per Table 4.3. Other smaller towns like Kabarnet, Marigat and Mogotio contribute relatively less. It can also be judged that out of the four abattoirs in the district, Mogotio channels beef from many sources in comparison to Kisanana, Noiwet and Esageri but the figures were not readily available.

Table 4.1 shows that Marigat auction contributed the highest number of cattle sales in the year 1990. Its figure stood at 35.2 percent of the total sales. It is followed by Kapcholoi (20 percent), Barwesa (12 percent), Emining (12 percent), Tangulbei (9 percent), Salawa (8 percent), Nginyang' (3 percent) and lastly Loboi (1 percent).

Table 4.1:   Cattle Sales in Baringo District cattle auctions (August 1989- August,

1990)

Market	Number sold	Percent of total
Tangulbei	498	8.9
Marigat	1970	35.2
Emining	643	11.5
Nginyang'	186	3.3
Barwesa	682	12.2
Salawa	429	7.7
Kapcholoi	1122	20.1
Loboi	65	1.2
Total	5595	100

Source: Ministry of Livestock development monthly reports, Baringo District

(August 1989 - August 1990

4.2 MOVEMENT PATTERNS OF BEEF CATTLE WITHIN AND OUT OF BARINGO DISTRICT

Livestock movement within and out of the district is as complex as the channels discussed above. In some situations, livestock can be bought from one auction and resold in another or it can be sold in adjoining district or even sold to distant places such as Nairobi.

However, the most common movement is where livestock is trekked to the nearest abattoirs for resale as carcasses to Nakuru butcheries, institutions like Egerton University, the Lanet army barracks and to schools.

From Table 4.2 it is observed that 64 percent of cattle movement was destined for Mogotio abattoir which supplies the Nakuru markets. The remaining 36 percent was shared between the other destinations thus; Kisanana (14 percent), Kapedo (1 percent), Kabarnet (21 percent).

As for movements outside the district, Nakuru district took the largest share (82.2 percent) as shown in Table 4.3. The rest of the recorded districts took minor proportions of the cattle movement.

Cattle movement is particularly important to the government when interventions are necessary so as to control the spread of diseases or to improve the marketing system. It is also important in that some order is created into a would be chaotic cattle movement pattern.

It is worth mentioning that the results discussed may not present a true picture because it only represents those cattle movements that were licensed by the Ministry of Livestock Development. It is however an indication of proportions of livestock involved in the various movements within and out of the district.

Table 4.2: __Cattle movement within Baringo district (February 1991)__

Origin	Destination	Number Total	Percent of
Marigat	Kisanana	87	13.6
Marigat	Mogotio	107	16.7
Marigat	Kapedo	8	1.3
Barwesa	Kabarnet	135	21.1
Nginyang'	Mogotio	302	47.3
Total		639	100.0

Source: Compiled from Ministry of Livestock Development Monthly reports, Baringo District.

Table 4.3: <u>Cattle movement out of Baringo district</u>

(February 1990 - February 1991)

Destination	Number	Percent of Total
Nakuru	1129	82.2
Kiambu	20	1.3
Uasin Gishu	6	0.4
Nairobi	57	3.6
Kitale	68	4.3
Athi River	55	3.5
Rumuruti	50	3.2
Marsabit	15	0.9
Kisumu	10	0.6
Total	1580	100

Source: Compiled from Ministry of Livestock Development monthly reports, Baringo district.

4.3.   ANALYSIS OF MARKET STRUCTURE

MARIGAT CATTLE AUCTION

Degree of buyer concentration

There were 15 cattle traders at the Marigat cattle auction on the day that this sampling was done. The market shares controlled by the first 4 or 8 largest traders was found to be relatively high and had some oligopolistic tendencies. Table 4.4 shows the sale shares of the first 4 and 8 largest traders in the sample as well as the total number of traders in the cattle auction.

Results of the analysis show that the 4 largest traders handled 48 percent of the transactions while the 8 largest traders handled 72 percent of the transactions. According to Bain (1968), the purchase share in Marigat is classified as high to moderate concentration as provided in Table 3.1. Therefore, this is a monopsonistic market.

The only hinderance to conclusive results is that on the particular day that the auction in question was sampled, the number of cattle brought for sale were significantly higher than the number that traders could afford to buy. This prompted some of the producers to take back their cattle and some to sell at Kabarnet to the butchers. It was also evident that the number of traders who availed themselves were less than expected by both the auction organizers and producers. The animals also went for very low prices due to relatively high supply, for example, the average price stood at Kshs. 1038 per animal.

Table 4.4:   <u>Purchased shares of the first 4 and 8 largest cattle traders in Marigat</u>
             <u>auction</u>

Percent share of the 4 largest traders	Percent share of the 8 largest traders	Total numbers of traders	Description of the industry
48	72	15	High-moderate concentration

Source: Author's work, 1991

From the 1989 cattle sales figures (Table 4.5), Marigat cattle auction registered an average of 179 cattle sold per auction day which is scheduled once a month. The number that was sampled was 14 percent of the total average sales for 1989. The sales on this particular day was 43 head of cattle which comes to 24 percent of the average annual figure for 1989. The number sampled was 58 percent of the total sold on this day.

Table 4.5: <u>Average number of cattle handled per auction</u>

        <u>in Baringo district, 1989</u>

Livestock market	Number of head of cattle
Tangulbei	50
Loruk	80
Marigat	179
Emining	100
Barwesa	100
Salawa	80
Mokorwa	30
Kapcholoi	100
Nginyang'	100

Source: Ministry of Livestock annual report, Baringo district, 1990.

KAPCHOLOI CATTLE AUCTION

Degree of buyer concentration

There were 20 cattle traders in the Kapcholoi cattle auction on the day that this market was sampled. The market shares controlled by the first 4 or 8 largest traders was found to be moderate and had some atomistic tendencies. Table 4.6 shows the sales shares of the first 4 and 8 largest traders in the sample as well as the total number of traders in the cattle auction.

Table 4.6: Purchased shares of the first 4 and 8 largest

cattle traders in Kapcholoi cattle auction.

Percent share of the 4 largest traders	Percent share of the 8 largest traders	Total numbers of traders	Description of the industry
37.95	63.29	20	Low-moderate concentration

Source: Author's work, 1991.

Results of the analysis show that the 4 largest traders handled 38 percent of the transactions while the 8 largest traders handled 63 percent of the transactions. These results fall under the low to moderate concentration implying that there is a slight tendency towards atomicity.

BARWESA CATTLE AUCTION

Degree of buyer concentration

There were 27 cattle buyers in the Barwesa cattle auction on the day that this market was sampled. The market shares controlled by the first 4 or 8 largest buyers was found to be high to moderate concentration and had some oligopolistic tendencies.

Table 4.7 shows the sales shares of the first 4 and 8 largest traders in the sample as well as the total number of buyers in the cattle auction.

Table 4.7   <u>Purchased shares of the first 4 and 8 largest</u>   <u>cattle traders in Barwesa cattle auction</u>

Percent share of the 4 largest traders	Percent share of the 8 largest traders	Total Number of traders	Description of the industry
50	74	27	High-moderate concentration

Source: Author's work, 1991.

Results of the analysis show that the 4 largest traders handled 50 percent of the transactions while the 8 largest traders handled 74 percent of the transactions. These results are categorized under the high to moderate concentration according to Bain (1968).

Table 4.8:   Marketing costs and margins per head of cattle bought and   slaughtered at Mogotio area of auctions and retail sold at Nakuru butcheris by a group of individuals (1991).

Cost to livestock buyer (wholesale)   Revenue at retail level

Cost Item	Shs.	Item	Kshs.
1. Mean purchase price	1443.48	Sale of meat	2900.10
2. Taxes, cess	40.00	Sale of heart, lungs,	
3. Transportation to abbatoir			
(live)	120.00	Liver and kidneys	122.50
4. Flaying and abattoir fees	44.00	Sale of tripes	154.00
5. Meat inspection fee	20.00	Head and trotters	35.00
6. Meat transportation to Nakuru	140.00	Value of skin	160.00
Sub-total variable costs	1807.48	Total	3371.60
Costs			
7. Trading loss 3.5% of sub-total	63.26	Costs	1870.74
Costs		Gross margin	1500.86
Total variable costs	1870.74	Return to financial	80. percent
			Capita

Source: Author's work.

1.   Mean purchase price for all cattle at Kapcholoi is KSh. 1,443.48
2.   Mean carcass weight is 82.86Kg based on cattle slaughtered at Mogotic abattoir
3.   Trading loss of 3.5 percent was arrived at based on traders fast experienc on trading loss due to theft, death on transit and loss in value.

Table 4.9:   Marketing costs and margins per head of cattle bought at Barwesa group
              of auctions and slaughtered at Kabararnet town for retail by a group of
              individuals (1991).

Cost to livestock buyer(Butcher)		Revenue to butcher at Kabarnet butcheries	
Cost Item	Kshs.	Item	Kshs.
1. Mean purchase price	1038.13	Sale of meat[1]	3007.64
2. Taxes, cess	40.00	Sale of heart, lungs, liver	
3. Transportation to Kabarnet	240.00	and kidneys[2]	119.00
4. Food, drinks and lodging		Sale of tripes[3]	272.88
expenses for buyer and			
Assistants	200.00	Head and trotters	35.00
5. Flaying and abattoir changes	30.00	Value of skin	160.00
6. Meat inspection fees	20.00	Total	3594.52
7. Meat transportation to butchery	100.00	Total variable costs	
Sub-total variable costs	1668.13	to butcher	1726.50
8. Trading losses 3.5% if sub-		Butcher's gross margin	1868.02
total variable costs	58.38	Return to financial capital	108.20%
Total variable costs	1726.5		

Source: Author's work.

Notes

[1]   Using retail price at Kabarnet (Kshs. 34 per kg) and allowing for shrinkage of 1.9% carcass
       weight (2.5 kg per carcass) and average carcass weight of 88.46kg.

[2]   Average weight of heart, liver, kidneys = 3.5kg price at Kshs. 34 per kg.

[3]   Average weight of tripes = 15.16kg, price at Kshs. 18 per kg.

These two tables show the results of analyses taken in the two markets that were considered to have elements of both vertical and horizontal integration.

One of the consequences of integration is that it results in high returns to capital. In our two case studies, the returns to capital stood at 80 percent and 108 percent respectively. Studies done in Kajiado district have shown returns to financial capital of not more than 40 percent. These returns are relatively high compared to other markets taken into consideration and therefore it could be concluded that integration is an observable phenomenon in the Baringo beef cattle markets.

4.4   BARRIERS TO ENTRY

It was observed that the major restriction to entry in the Baringo beef cattle markets is that of capital requirements.

Incomes in the district are generally low and the income per capita was put at K£446.4 in 1982 (Kenya, 1988).In addition, distribution of income is highly skewed. The ways in which people earn their living in the district is directly related to the land potential zones and accessibility to income generating opportunities like land, location o

commerce and industry, the development of infrastructure, and provision of services (Education and medical care).

It was evidently clear that those traders who were well established in the beef marketing system in Baringo district dictated the operations of the system because of their better positions to out-compete potential rivals. This therefore means that new entrants into the market have to have high initial capital base or go into joint business with the established traders if they hope to survive. This arguement is supported by the results of the analysis on market concentration. For the Marigat cattle auction, out of the fifteen buyers that were present, six of them purchased 64 percent of the cattle on sale. For the Kapcholoi cattle auction, out of the twenty buyers that were present, six of them purchased 52 percent of the total cattle sold.

For the Barwesa cattle auction, out of the 27 buyers that were present, six of them purchased 65 percent of the total cattle sold. The control of a large proportion of the market by a few individuals is a phenomenon that is observable when barriers to entry exist and this is what was observed in Baringo as shown by the results above.

4.5 MARKET PERFORMANCE

This chapter presents the results on market performance as regards the various channels in the Baringo beef marketing system. As mentioned earlier, market performance has been analyzed on the basis of marketing costs. The attempt has also been to measure performance in terms of market efficiency or returns to capital. Performance has also been measured using prices at which transactions occured.

Costs.

These include direct costs of finding a "place" in which to transact business. They also include the cost to the participants, of gaining information about the market. For demanders, all prices are not perfectly known. Rather, they must invest some time in search procedures that permit them to learn market prices. They must also spend some effort in analysing the quality of the products they intend to buy. Similarly, suppliers face costs in making transactions. The most important of these is the need to find out something about demand for their products. Since production takes time, the absence of such information can lead to serious mistakes in the quality a firm chooses to produce. Firms must also consider the random nature of demand over a short period. This discussion illustrates that the competetive assumption os zero transaction costs is not likely to be fulfilled in the real world.

Table 4.10   Analysis of marketing costs and margins per head of cattle bought and slaughtered at Mogotio group of auctions sold at Nakuru town. (1991)

Cost to livestock buyer (Wholesaler)		Revenue to livestock buyer (Wholesale)		Revenue to nakuru retailer	
Cost item	Kshs.	Item	Khs	Item	Kshs
1. Mean purchase price[1]	1443.48	Wholesale value of carcass at Nakuru[2]	2320.00	Sale of meat[4]	2900.10
2. Taxes, cess	40.00				
3. Transportation costs to Abattoir (live)	120.00	Sale of lungs, heart, liver kidneys[3], tripes, head,trotters	200.00	Sale of heart, lungs liver[5] and kidneys	122.50
4. Flaying and abattoir fees	44.00	Value of skin	160.00	Sale of tripes[6]	154.00
5. Meat inspection fee	20.00	Total	2680.00	Total	3211.60
6. Meat transportation to Nakuru	140.00	Wholesalers cost	1870.74	Cost at wholesale[7]	2520.00
Sub-total	1807.48	Wholesalers gross margin	809.26 margin	Retailer's profit	691.60
7. Trading loss 3.5% of Sub-total costs[3]	63.26	Return to capital	43.26%	Return to capital	27.44%
Total costs	1870.74				

Source : Author's work.

Notes: [1] Mean purchase prices for all cattle at Kapcholoi market (N = 69)
[2] Traders weighed their carcasses four kilogrammes less per carcass to take care of weight losses during transit. Mean carcass weight was 82.86kg.
[3] Wholesale value at Nakuru was Ksh. 28 per kg. meat. Ksh. 200 for lungs, heart, liver, kidneys, tripes, head, trotters from one animal.
[4] Using retail price at Nakuru (Ksh 35 per kg) and allowing for shrinkage of 1.7% carcass weight (2 kg per carcass)
[5] Average weight of heart, liver, kidneys = 3.5kg; price = Kshs 35 per kg.
[6] Average weight of tripes was 14kg and its price was Kshs. 11 per kg.
[7] Excludes revenue from hide.

Table 4.11: <u>Analysis of marketing costs and margins per head of cattle bought from Marigat group of auctions and slaughtered at Mogotio Abattoir, sold to Nakuru butcheries (1991)</u>

Cost to livestock buyer (wholesaler)		Revenue to livestock buyer (wholesaler)	
Cost item	Kshs	Item	Kshs
1. Mean purchase price	1153.95	Wholesale value of carcass	
2 Taxes, cess	40.00	at Nakuru	2320.00
3. Transportation to abattoir (live)	150.00	Sale of lungs, heart, liver,	
		kidneys, tripes, head, trotters	200.00
4. Food, drinks and lodging expenses		Value of skin	160.00
for buyer and assistants[1]	100.00	Total	2680.00
5. Flaying and abattoir fees	40.00	Wholesalers gross margin	978.51
6. Meat inspection fee	20.00	Return to capital	57.51%
7. Meat transportation to Nakuru	140.00		
Sub-total	1643.95		
8. Trading loss 3.5% of sub-total			
costs	57.54		
Total costs	1701.49		

Source: Author's work.

Note:

[1] This is calculated from the information that these costs amount to about Kshs. 1000 for every 10 head of cattle. Therefore for one head of cattle = KShs. 100.

[2] ⋅ Mean purchase price is that of all cattle sold at Marigat cattle auction i.e. KSh. 1153.95

[3] Trading loss of 3.5 percent was arrived at based on traders past experience on trading loss due to theft,   death on transit and loss in value.

[4] Mean carcase weight is 82.86 Kg based on cattle slughtered at Mogotio abattoir.

It was not possible to discern the average weight of carcase based on their auction of origin hence the gross average carcase weight was used.

Table 4.12   Analysis of marketing costs and margins per head of cattle bought at Barwesa group of auctions and SLAUGHTERED at Mogotio abattoir, sold to nakuru butcheries (1991).

Cost to livestock buyer (wholesaler)		Revenue to livestock buyer (wholesale)	
Cost item	Kshs.	Item	Kshs.
1. Mean purchase price	1038.13	Wholesale value of carcass at Nakuru	2320.00
2. Taxes, cess	40.00		
3. Transportation to abattoir	200.00	Sale of lungs, heart, liver, kidneys, tripes, head, trotters	200.00
4. Food, drinks and lodging expenses for buyer and assistants	140.00	Value of skin	160.00
5. Flaying and abattoir fees	40.00	Total	2680.00
6. Meat Inspection fee	20.00		
7. Meat transportation to Nakuru	140.00	Wholesaler's profit margin	1005.24
Sub-total	1618.13	Return to capital	60.02%
8. Trading loss 3.5% of			
Sub-total costs	56.63		
Total costs	1674.76		

Source : Author's work.

[1] The mean purchase price is KSh. 1,038.13 i.e. that of all cattle sold at Barwesa cattle auction.

[2] Trading loss of 3.5 percent was arrived at based on traders past experience on trading loss due to theft, death on transit and loss in value.

[3] Mean carcase weight is 82.86 Kg based on cattle slaughtered at Mogotio abattoir.

Table 4.13   Analysis of marketing costs and margins per head of cattle bought and slaughtered at Mogotio area of auctions sold at Mogotio town butcheries

Cost to livestock buyer		Revenue to retailer at Mogotio butcheries	
Cost item	Kshs.	Item	Kshs
1. Mean purchase price	1443.48	Sale of meat[1]	2749.24
2. Taxes, cess	40.00	Sale of heart, lungs, liver and	
		kidneys[2]	119.00
3. Transportation to abattoir			
(live)	120.00		
4. Flaying and abattoir fees	44.00	Sale of tripes	154.00
5. Meat inspection fee	20.00	Head and trotters	35.00
6. Meat transportation to		Value of skin	160.00
Mogotio town	40.00		
Sub-total variable costs	1707.48	Total	3217.24
7. Trading loss 3.5% of		Total variable cost to butcher	1767.24
Sub-total variable costs	59.76	Butcher's profit margin	1450.00
Total variable costs	1767.24	Return to capital	82.05%

Notes:

[1] Using retail price at Mogotio (Kshs 34 per kg) and allowing for shrinkage of 1.7% carcass weight (2 kg per carcass)

[2] Average weight of heart, liver, kidneys = 3.5kg price = Kshs 34 per kg.

[3] Mean purchase price is KSh. 1443.48 i.e. that of all cattle bought at Kapcholoi cattle auction.

[4] Mean carcase weight is 82.86 Kg based on all cattle slaughtered at Mogotio abattoir.

[5] Trading loss of 3.5 percent was arrived at based on trader's past experience on trading loss due to theft, death on transit and loss in value.

Table 4.14:   Summary Table of all marketing channels in Baringo District, Kenya (1991).

Group of Auction	Abatoir	Distance to Abatoir (Km)	Transport cost to Abatoir per cow in Kshs.	Marketing cost in KShs./Kg/Km	Distance from Abatoir to Market (Km)	Transport cost from Abatoir to Market (KShs.)	Marketing margin (KShs.)	Returns Percentage	Returns in KShs./Kg/Km
Mogotio	Mogotio	20	120	0.32	50	140	809	43	0.46
Marigat	Mogotio	40	150	0.23	50	140	979	58	0.36
Barwesa	Mogotio	90	200	0.14	50	140	1,005	60	0.23
Mogotio	Mogotio	20	120	1.00	1	40	1,450	82	1.85
Barwesa	Kabarnet	35	240	0.55	1	100	1,868	108	1.10

Source: Author's work.

Various costs do prevent markets from adjusting promptly. Consequently, in the real world we should observe not only the systematic influence of supply and demand but also disequilibria caused by the existence of transaction costs. The significant components of beef marketing costs are transportation costs of both live animals and meat, taxes and cess, flaying and abattoir fees.

RETURNS TO CAPITAL.

In beef cattle marketing, traders and butchers invest significantly on financial capital so as to be able to purchase livestock and sell it in one form or another. They also incur marketing costs in the process of performing marketing services. In the context of this thesis, returns to capital is the difference between what a retailer or consumer pays and what a wholesaler or retailer gets respectively expressed as a percentage of invested capital. Since this difference is less the significant costs of marketing, it is an appropriate indicator of performance. A comparatively higher figure implies that the seller gets a disproportionately higher profits and hence an indication of low performance. The converse is also true.

From the results shown in Tables 4.8 to 4.13, it can be concluded that wholesalers in all the analyzed channels realize a very high return to capital. The results show that the return to capital for wholesalers who purchase their livestock around Mogotio area stands at 43 percent while that of the retailer at the Nakuru retail market

stands at 27 percent. This shows that a significantly high share of the marketing cost goes to the wholesaler as shown by the analysis in Table 4.8 - 4.13 and it is doubtful whether this is justified on the basis of risks involved and the operations conducted. The return to capital for wholesalers who purchase their livestock from Marigat group of auctions and then slaughter them at Mogotio for the Nakuru market stands at 58 percent which is higher than that in which the source is closer to the market. It is however hard to say whether the difference in return to capital is significant. It can only be concluded that the distance factor is taken into account or compensated for by lower market prices.

The return to capital for wholesalers who purchase their livestock at Berwesa group of auctions (Kerio valley) and market them at Nakuru stood at 60 percent which is higher than that for the Marigat market. This also serves to justify the difference in distances between the two markets. This is to say that the further a source of livestock is to the market, the lower the average marketing costs and hence higher returns to capital.

In the analysis of marketing costs and margins per head of cattle bought and slaughtered at Mogotio area of auctions and sold at Mogotio butcheries, the return to capital shoots up to 82 percent as compared to 43 percent for those sold on wholesale basis. This is a significantly high return to capital and it shows how integration of marketing functions can increase returns enormously. In this case, the purchase of livestock, slaughtering and retailing are all done by one person. In Table 4.9, the return to capital for cattle bought at Barwesa group of auctions and slaughtered at Kabarnet is exceptionally high. Its figure stands at 108 percent. This high return also shows how

vertical integration of marketing processes can serve to increase returns significantly. Even when fixed costs like rent, licences and wages are taken into account, this return would still be high and is an indicator of a problem in the marketing process. Either there is collusion among traders or there is no transparency in the marketing process. This implies that producers are paid less than they deserve and this is an indication of an existing problem.

In the analysis of marketing costs and margins per head of cattle bought and slaughtered at Mogotio area of auctions and retail sold at Nakuru by one person, the return to capital stood at 80 percent. This figure is much less than that for Kabarnet and Mogotio and the only reason or justification for the existence of such a channel is when one looks at the turnover rate. Although this is not documented here, those wholesalers who operated through this channel mentioned one of their advantages as that of high turnover rate. As per the results shown above, the most efficient channel is that of Mogotio group of auctions selling to Nakuru retail markets.

In Baringo beef cattle auctions, it was also noted that their locations were convenient enough for both products and consumers as well as the county council which is in charge of running them. However, they could even work better if the number of auctions were increased and the responsibility of running them decentralized so as to encourage private entrepreneurship in running these auctions other than the county council alone. This would make an increase in the number of auctions as well as their

regularity a feasible undertaking. There would be no rationale of having only one auction day per month for every designated auction.

The auctions should also have some by-laws which will guide both the buyers and the sellers and which should be strictly adhered to. In all the auctions visited, there was a significant presence of informal trading on livestock on a willing buyer willing seller basis and hence lack of transparency. This in itself affects the overall performance of the auctions.

The auctions should also operate more regularly just before the onset of draught to enable producers sell those livestock which they cannot sustain during periods of draught.

As it is now, auctions are scheduled uniformly throughout the year and in my opinion, this kind of arrangement is not responsive to the demands of the producers.

CHAPTER 5

SUMMARY: CONCLUSIONS AND RECOMMENDATIONS

5.1   SUMMARY

The livestock sector makes up a significant portion of the national marketed production. This figure was recorded at 26 percent of the national figure in the year 1990 (Table 1.2). Within the livestock sector, there are a range of products including dairy, beef, hides and skins just to mention a few.

In Kenya, beef animals are mainly raised in pastoral areas where this occupation is the best alternative way of utilizing land on account of its low potential, unreliable rainfall and low resource endowment for its inhabitants.

Many studies that have been done on the beef sector have emphasized that there is a large reservoir of cattle that are not marketed and this study has therefore not focused on production problems. This study has particularly focused on marketing of beef cattle in Baringo district since it is one of those districts where beef cattle are produced. In addition, marketed livestock from the district does not match with the potential output in terms of marketed stock.

The study has therefore attempted to identify areas where problems might be prevailing and therefore contributing to the low offtake rates. Results indicate that the major form of organized marketing of livestock in the district is through auctions. Those markets where cattle are sold on one buyer one seller basis were not substantial. It was also realized that most of the cattle ended up in Nakuru butcheries. For example Table 4.2 shows that upto 82 percent of the total lead of cattle ended up in Nakuru. There are four major channels through which beef cattle are channelled in the district from the various cattle auctions.

The characteristics of three auctions have been analyzed and the results show that in Marigat cattle auction, the 4 largest traders handled 48 percent of the transactions while the 8 largest traders handled 72 percent. That of Kapcholoi and Barwesa stood at 38 percent and for the 4 largest and 63 percent for the 8 largest; and 50 percent for the 4 largest and 74 percent for the 8 largest respectively. These results show that out of the three auctions, two of them recorded high to moderate concentration. Differentiation between male and female animals was found to be very high as evidenced by the significant differences of prices at which transactions occured.

It was also observed that there was evidence of both vertical and horizontal integration on account of exeptionally high returns to financial capital. These returns to capital ranged from 80 percent to 108 percent. Existing barriers to entry were attributed to high capital requirements which enables those established in the marketing system to

maintain relatively high returns to capital without any threat of new competitors. This arguement is supported by the high returns that were evidenced thus; 43 percent, 58 percent, 60 percent, 80 percent, 82 percent, and 108 percent for the respective channels under consideration. As for market performance, the results of the analysis show that market efficiency is low because of the relatively high returns to capital.

5.2   CONCLUSIONS

From the summary, it can be concluded that there was a strong evidence of low competition among buyers in the Baringo beef cattle markets. The elements of low competition that were identified are:-

(1)   The existence of high to moderate market concentration among the buyers

(2)   Evidence of barriers to entry as shown by relatively high returns to capital of 43.26%, 57.51%, 60.02%, 80.23%, 82.05% and 108.20% for the respective channels considered for the study.

There was also evidence of inefficiency in the Baringo beef cattle markets as shown by the existence of disproportionately high returns to capital in virtually all the channels except that of Mogotio group of auctions for cattle that are retail sold to Nakuru

Out of all the markets and channels studied, only those markets that are close to Mogotio were more competitive and more efficient as shown by high to moderate market concentration, and relatively lower return to capital of 43 percent. The least efficient and least competitive markets are those that were close to Kabarnet as shown by very high return to capital of 108.20 percent.

5.3   RECOMMENDATIONS

The results show that there is relatively low competition in the Baringo cattle auctions. It also shows that inefficiency especially in the wholesale market of beef is prevalent in the district. It is therefore recommended that in order to deal with the problem of low competition, and inefficiency, beef cattle markets should be specialized so that cattle brought for sale should be categorized in terms of sex, age and breed. This will improve on homogeneousity of the beef animals and therefore assist in solving the problem.   This can be achieved by creating an enabling environment for specialized interest groups comprising farmers, traders and professionals to take a more active role in beef cattle marketing. One such interest group is the Agricultural Society of Kenya (A.S.K.) which has only played an active role in the high potential areas. The A.S.K. has a management stracture in place which could effectively handle a beef cattle grading system in Baringo District. Other avenues which could be followed would be to have a board of trustees with a given mandate to ensure that a grading system is put into place and to ensure that it works. It can draw its members from farmers, traders, lawyers and Agricultural professionals.

Local councils can also play an active role towards ensuring a proper grading system as long as more professionalism is facilitated. They would even be in a better position to work with other suggested options since they have been responsible for running the auctions up to date. Regularity of auction days should also be improved so as to enable the proper information transfer and hence transparency in the marketing system.

Aspiring traders should also be encouraged to enter the beef cattle market by enabling them get capital on loan basis so as to improve on the competitiveness in the markets. If they could come together as an interest group then form co-operatives, then they could have a greater bargaining power both in terms of negotiating for credit facilities and favourable marketing terms.

To improve on the pricing system, the information system should be strengthened so that both producers and consumers are aware of the prevailing beef prices in various urban areas of the country. This can be done by publishing such prices in the local newspapers or broadcasting over the radios and televisions. This will enable producers to sell their cattle depending on the prevailing beef prices and for the consumers to decide on how much to consume. In other words it will enable both producers and consumers to behave in a rational economic sense.

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APPENDIX I:

QUESTIONNAIRE FOR BUYERS

Name of respondent.............................Market . . . .

Area of residence.............................District . . . .

Date . . . .

1.   How long have you been in this business?

     ....years . . . . months

2.   Where else do you buy cattle? . . . .

. . . .

3.   How many days in a week do you spend in cattle trade (including buying, reselling butchering

     etc)? . . . .

4.   What is the maximum/minimum number of cattle you bought at this market on one day during

     1990? . . . .

5.   How do you transport the cattle you have purchased today and what is the estimated cost?

     Mode of transport . . . .

     Own/hired . . . .

     Estimated cost per head . . . .

6.   How do you dispose of the livestock you buy?

Disposal	: Place	: Distance	: Frequency (Daily): weekly/monthly	No. of : Head
Resell	:	:	:	:
Retail butcher	:	:	:	:
Wholesale butcher	:	:	:	:
Contract supplier	:	:	:	:

i. live animals :   :   :   :
ii. Beef   :   :   :   :
_____:_____:_____:_____:_____

8.   What expenses do you incur in relation to marketing?

(a)   Transportation of self -1 return trip Kshs.......

(b)   Transportation of assistance - 1 return trip Kshs.

(c)   Food/drinks expenses - 1 return trip Kshs. . . . .

(d)   Lodging expenses - 1 return trip Kshs . . . .

(e)   Taxes/cess paid per head: Cattle Kshs . . . .

(f)   Watering charges/head Cattle Kshs. . . . .

(g) Other (specify)................Kshs. . . . .

9.   What investment have you made in connection with your livestock   trade?

Item	Year	Value(Kshs.)

a) Truck for live animals.....Type/make ....

b) Abattoir................... Location(s)......   ....

c) Butchery................... Location(s)......   ....

d) Holding yards............. Location(s)......   ....

e) Meat delivery raw......... Type/make........   ....

f) Others (specify)

10. (a) What losses do you often incur during trading

(deaths/thefts/injuries/disappearance/pricing etc.

....

(b) What is the average lost per week? ....

(c) What is the estimated value of loss? Kshs..............

11.   What other problems have you often faced in your trade   (capital/low   selling prices/high taxes/high losses, etc.)

	Problem	Present	Past
a)	_____	_____	_____
b)	_____	_____	_____
c)	_____	_____	_____
d)	_____	_____	_____

APPENDIX II:

QUESTIONNAIRE FOR PRODUCERS

Respondent's Name . . . .

Area . . . .

Date . . . .

1.   What are your main occupations besides keeping livestock?

      (a) Farmer . . . .

      (b) Employment . . . .

2.   From your herd and flock:

      When would you decide to sell a cow/steer/bull?

. . . .

. . . .

3.   Livestock sales in the last 12 months.

When sold Month/Year	Number	Place of sale Boma/market/waterpoint)

4.   How do you determine price to sell at?

      . . . .

      . . . .

      . . . .

5.   When you are not selling, how often do you visit the   markets?

    a) Regularly...............Why? ....

    b) Occasionally............Why? ....

    c) Never...................Why?..........................

6.   How are you paid?

    a) Always in cash in full:...............................

    b) Sometimes cash payment immediately, balance later.......

    c) Who gets credit if (b) is applicable?...................

    d) Have all your past debtors fuly paid up?................

7.   Do you have specific buyers (traders) you consider regular

    customers?..

    If yes, from where?.......................................

    Are they resellers/butchers/contract suppliers?............

    Others (specify)..

    How often do they visit seeking to buy from you?...........

8.   How do you transport your cattle to the market?

Mode of transport	Estimated cost (Kshs)/head
Trek	....
Truck	....
Railway	....

    Distance to place of site ....

9.   What are the main problems you face in selling cattle?

Problem	Present	Past
a)	_____	_____	_____
b)	_____	_____	_____

c) _____ _____ _____

d) _____ _____ _____

10. Current livestock holdings:

Cattle	Numbers
Classes	_____
Bulls	_____
Mature steers	_____
Immature steers	_____
Cows	_____
Heifers	_____
Calves (males, females)	_____

APPENDIX III.

<u>LIVESTOCK MARKETING FORM</u>

NAME..

MARKET................................MARKET NO...

DATE MARKET VISITED...........................

No	Type (Breed)	Age (Years/ Months	Estimated weight(Kg)	Actual Weight(Kg)	Price (KShs)	Remarks