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A GEOGRAPHICAL APPRAISAL OF KARAMOJA AS
A BEEF PRODUCTION AREA

by

Randall Baker

Department of Agriculture
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"The task is ... to persuade a pastoral people to accept a money economy and a settled way-of-life ... to destock and realise the eventual potential of ranching development ... the spread of incentives and the adoption of a modern, commercial economy" Karamoja District Plan, 1958 Rev., Government Printer, Entebbe p. 5.

"You see, my cows are like flowers, I like to sit and see them grow. When they are happy, I am happy and the more there are the happier I am" A. Matheniko, August 1966.

INTRODUCTION.

From Karamoja District annually, a total varying wildly between ten and forty thousand¹ head of low-grade slaughter cattle make the long trek to the railhead at Soroti for the consuming areas of Buganda, Busoga and Mbale. Out of a total cattle population of 603,871² this represents over a period 1960/65 inclusive, a crude average offtake of 3.2%, for an estimated 91.97%³ of the cattle passing through the county cattle auctions are exported from the District. Although 3.2% represents a very low percentage offtake in comparison with the 15% of more advanced pastoral economies, the total figure represents an average over the same six year period of just over 20% of the total trade cattle movement from the producing areas of Lango, Teso, Karamoja and Ankole to the south. In individual years such as 1965, this percentage can rise to over 40.⁴

Factors of supply governing this highly erratic (see tables 5 & 6) annual and in-year offtake are dependent on many unpredictable and powerful environmental and socio-economic constraints, incentives and habits. Karamoja is in no way an area scientifically producing a marketed surplus in recognition of its natural endowment as a pastoral rather than settled agricultural zone. Instead it is exploited on a very short time horizon at the mercy of often totally unrelated influences as a valuable source area which, in recent times is giving up its stock in the face of a rapidly declining natural environment.

This paper, which is essentially concerned with correlating and analysing patterns, intends to examine the various natural and human phenomena which conspire to retard the rational utilisation of Karamoja as a planned stock rearing area, and which continually subject the area

to massive shifts in environmental circumstance and find reflection in the erratic nature of all quantitative data regarding the cattle trade.

It is not intended to present a potted geography of Karamoja District at the outset and relate everything back to this, rather, the environmental and human data of the patterns considered will be studied in the body of the work as the problems arise so that they emerge as what they are: an integrated, if frequently disharmonious, whole. As a background however, the distribution of the main elements of the cattle trade will be briefly described at the outset as they present the principal infrastructure of the trade which this paper hopes to examine in its geographical context.

PATTERNS OF CATTLE AND MARKETS

Karamoja District contains an estimated 698,000⁵ head of cattle which represents 20%+ of the suggested figure of three and one half millions for the national herd⁶. These animals are increasing at a rate of 5%⁷ per annum against a national average of only 2.5% and considerable pressure on the natural environment is now evident. The stock is of a small stature though it has been described as "slightly larger and heavier boned than Teso animals for trade"⁸. However, on arrival at the Uganda Meat Packers abattoir in Kampala, an average liveweight of only 380 lbs. has been quoted^{* 9}. In the district under frequently rigorous environmental and social constraints, the animals have a very long average maturing time - though this varies from animal to animal very considerably depending on parental stock and the availability of milk - of some 5 to 6 years.

The distribution of cattle varies greatly within the year between the seasons (wet and dry) depending on the intensity of the dry season, but shows considerable spatial variations even during the relative stability of the wet season (April-September) which sometimes bears little relationship to the disposition of the natural phenomena of the environment.

In the dry season, the herders move with a percentage^{**} of their cattle in a transhumant yearly pattern to the wetter savanna perennials of the western Hyparrhenia plains (see map). Since the census (1963) of cattle was taken in the wet season it is impossible to map these dry season concentrations in detail. In general, the movement involves a broad south-westward trek of the Bokora/Matheniko groups to the

* This figure must take into account the considerable weight loss en route to Kampala which has been quoted at around 40-50 lbs. average per animal, (Fowler 1966) giving a more realistic Karamoja weight of 430 lbs - also U.M.P. buy the poorer animals and so an eventual weight of 480-500 lbs is more valid.

** "Some 50% stay behind on average" Animal Industry Development for Karamoja Planning Commission Memo. P.C. 1964.

seasonal swamps and grazing of the west along the Usuk boundary, whilst the people of Pian swing between the mountain massif of Kadam and Elgon. The higher mean annual rainfall and elevation of Dodoth places less burden on the people of this area to migrate, but the Jie are forced to wander away to the west towards the Acholi border and to the fringes of the southern Karamojong.

In the wet season, the movement is reversed and the gradually increasing concentration of an ever-increasing number of stock around a diminishing number of watering points is relieved and a movement back to the "manyatta" or settled-homestead area takes place. The 1963 census¹⁰ was taken in the relative stability of the wet season. This has been mapped at a sub-county level to an accuracy of 500 head and the map will be available at the seminar. The map clearly shows the very dense concentration of stock in the central steppe belt from north-west of Kaabong to the point 10 miles south of Nabilatuk where the concentration swings around the eastern slopes of the Kadam massif to form the very high density belt of Upe on the fringe of Karasuk territory.

The central zone of wet season concentration along the annual-grass steppe zone very broadly* is divided into concentration blocs with almost empty areas of good pasture breaking the continuity. These are the boundaries of the major tribal groupings and exist as cordons sanitaire or marcher strips reflecting real or potential inter-tribal hostility. The concentration zone is almost entirely surrounded in the wet season by a belt of very low density around the district boundary except in the Upe concentration and eastern Dodoth. In the east this represents the higher ground of the escarpment forming the boundary with Kenya, and in the west, a long marcher zone with Teso and Acholi, occupied only in times of environment pressures. Certain special areas of low density should be mentioned (see Table 1) such as Labwor where the stocking rate to available land (not available pasture) is 1:33 acres of the District average of 1:12.

* Vegetation areas refer to the Uganda Atlas Vegetation map. Simplified at the front of this paper.

Table 1

COUNTY STOCKING DENSITIES: KARAMOJA
WET SEASON CENSUS 1963: D.V.O. Moroto

County	Area/Sq. mls	Density per sq./m (cattle)	No. of acres per h/c.
DODOTH	2725	38	1:16
LABWOR	576	19	1:33
JIE	1796	72	1: 8
BOKORA	1940	66	1: 9.5
MATHENIKO	1393	25	1:25
PIAN	1640	55	1:11
UPE	2146	48	1:13
KARAMOJA	12216*	57	1:12

Sources: Cattle - 1963 Report on the Uganda Census of Agriculture, Vol.2
 Government Printer.

Area - Population Distribution in East Africa. Philip Porter,
 A. American Geographers, Washington, 1962.

* This figure is land area and includes forest reserves and the National
 Park at Kidepo. Corrected figures for Dodoth to exclude the park =
 2239 square miles; and to include the area under tsetse = 1939
 So full correction for Dodoth: =

1939 sq. miles available pasture
 54 cattle per square mile
 1:11 acres per head.

This reflects the more settled mixed* agricultural practices of the
 Labwor people who have most of Karamoja's 20,000 acres under cotton¹¹.
 Other areas which are of low density are those precluded to stock
 through topography or disease such as the conspicuous emptiness of
 the 300 square miles under tsetse fly (*G. morsitans*) in Dodoth county
 between the Narus/Lokulas watershed and the 39 mile tsetse barrier
 (see Tsetse Dept. Annual Report 1964 for map). The highlands of
 Kadam emerge well as terrain unsuited to cattle**. Cattle are pre-
 cluded by legislation from the area of Kidepo National Park, though

* Mixed in this sense must not be understood as meaning that the cattle
 are integrated in the farm economy. They are not.

** Kadam is also a Forest Reserve and closed to cattle.

the usual prohibitions applying to controlled hunting preserves are largely impossible to enforce in such other protected areas in Karamoja.

The distribution of stocking densities (Table 1) and the Number of Cattle per Head of Population (Table 2) clearly show that (at least in the wet season), the Jie, who are the fourth largest tribal unit and have more cattle than any other group (Table 3) have to stock them at 1:8 acres on a composition of . . . grasses which at very best should not be stocked at more than 1:10 at this stage.

Table 2

CATTLE PER HEAD OF POPULATION: KARAMOJA

<u>COUNTY</u>	<u>POPULATION¹(PERSONS)</u>	<u>NO. OF CATTLE PER PERSON</u>
DODOTH	32,206	3.2
JIE	23,254	5.6
LABWOR	10,280	1.08
BOKORA	36,176	3.6
MATHENIKO	19,792	1.7
PAIN	27,316	3.3
UPE	23,366	4.4

Sources: Cattle Census D.V.O. Moroto 1963 in Report of Census of Agriculture Vol. 2, Min. of Ag. & Coops., Entebbe.
P. Porter, Population Distribution in East Africa. Assoc. of American Geographers 1963.

The actual concentration is, in fact, worse, since the stocking figure of 1:8 has been evaluated on total land area of the county, whilst the figure for pasture is lower.* The Jie emerge per se as the prime pastoral people having 5.6 head of cattle for every person whilst the Upe with their massive concentration near Karasuk are a close second with 4.4 (T.2) and the semi-agricultural Labwor have only 1.08 per head of population.

* A Veterinary Department estimate (1965) quotes an area of available pasture in Karamoja as 77.1% of the land area. However, the initial land area was incorrect and so that percentage has not been used. Veterinary Department Annual Report 1964. Appendix.

Table 3

CENSUS OF CATTLE BY COUNTY: KARAMOJA
WET SEASON - 1963. VETERINARY DEPARTMENT MOROTO

DODOTH	104,893
LARWOR	11,145
JIE	129,694
PIAN	90,770
MATHENIKO	34,590
BOKORA	128,317
UPE	104,462
KARAMOJA	603,871
1966 estimate	700,000

Growth rate estimate - 5% per annum

Sources: Report on the Census of Agriculture, v.2, Govt. Printer
Entebbe 1963.

The Matheniko emerge with a surprisingly low 1.7 which may reflect their greater area of sorghum and lesser reliance on cattle numbers for subsistence¹². A comparison of tables 1, 2 and 3 reveals the main concentration zones by county (this is useful because counties tend to have real meaning in Karamoja by virtue of their tribal basis) and the pressures of the grazing in this marginal area. It is quite wrong to imagine that Jie can support cattle at present - or possibly in the future - at 1:8, but the high density is dependent on the fact that the transhumance places a greater pastoral hinterland within the tribal 'economy' than the settled "manyatta" homeland. The overall stocking rate to land area in Karamoja, of 1:12 is itself a reflection of the enormous pressure of stock on district grazing, but is relieved by the fact that a large area of Eastern Teso's seasonal swamps is part of the "greater Karamoja" of the pastoralist and should be considered among the natural resources of the Karamojong even though the legal and security aspects may be disagreeable.

The pattern of the twelve cattle markets in Karamoja District closely resembles the distribution of stock concentrations in the wet season. In many ways this is a geographically convenient administrative factor rather than a planned response to the economic geography of the cattle trade in the District. The principal markets with the highest (Table 4) average throughput are mostly situated in the county capitals such as Kaabong in Dodoth, Amudat in Upe, Kotido in Jie and Kangole in Bokora

Table 4

RELATIVE IMPORTANCE OF MARKETS: 4 YEAR INCLUSIVE AVERAGE
1960 - 1964

<u>COUNTY</u>	<u>MARKET</u>	<u>4/YEAR AVERAGE ANNUAL THROUGHPUT</u>
Dodoch	Kaabong	5,243 H/c.
Dodoch	Loyoro	1,962
Jie	Kotido	4,665
Matheniko	Naitakwai	1,031
Bokora	Kangole	2,444
Upe	Loro	772
Upe	Kacheliba	798
Upe	Amudat	1,038
Pian	Nabilatuk	2,817
Labwor	Nyakvai	346

Tabulated File, District Veterinary Office, Moroto. August 1966.

The county seats are themselves quite artificial creations of the Protectorate government, for the Karamojong and related peoples lived in family units and not in settled 'villages' or 'towns'. These administrative centres were located artificially at or near the mid point of the tribal concentrations about which the counties are based. This has resulted in the present situation whereby the cattle markets at these county centres are located in the middle of one of the main cattle clusters during the wet season when the tribes return to their 'homelands'. Thus has the siting of the cattle markets proved geographically sound even though the initial decision was not based on spatial analysis of the cattle trade.

The location of those markets falling outside the administrative centres also closely reflects the pattern of cattle distribution within the district. Where massive concentrations of cattle are centred such as Dodoch (Table 3) there are two markets, or as in the case of Upe (Table 3) markets follow the linear concentration configuration at Loro, Amudat and Kacheliba. During the wet season there is an adequate cover of markets and very few people can claim to be more than 10-15 miles from the nearest large market centres. In the dry season, however, with the shift to the west, the cover is less adequate especially as the western 15 mile border margin strip of Bokora and Pian have no markets and it is here that there are often 200,000¹³ head of cattle concentrated

in November-December/ May. . A special case is Chepsikuniya which, although in Karamoja and under the D.V.O.* Moroto, belongs to the Local Government of the Sebei District and is used for the sale of numbers of stolen cattle which have found their way into Karamoja and may not be returned (for reasons of Pleuro-pneumonia) into Sebei. Cattle sold at Chepsikuniya are put through the quarantines of Karamoja/Teso before being moved elsewhere.

Cattle are offered for sale at the regular cattle auctions on appointed days and buyers travel, or send agents, from the south of Uganda (Kampala, Jinja and Mbale monopolise the trade). Cattle being exported from the District, and 91.7% are ("graph 2") must pass through the auction ring, face veterinary inspection for which a fee is paid and then a permit for movement is issued. Without this permit the cattle may not leave the district, and this permit is issued only at the centres approved for auction sale and so the trade figures reflected in this system are far more reliable than in other districts where the practice of bush-buying to eliminate the market fees is common practice.

Once sold, the cattle are strictly isolated from the many endemic diseases prevalent in the Karamoja environment, and are walked along prescribed stock routes established by the Veterinary Department under guard stopping only overnight at security bomas which complete the isolation, until they reach the enormous quarantine area at Iriri (see map) over the Teso border in Usuk. The system involves long walks in the hot glare of the noonday sun under which the cattle rapidly loose condition until they reach the quarantine where they are frequently overstocked on the inadequate grazing where over 12,000¹⁴ head of cattle¹⁴ have been stocked on 34,000 acres¹⁵ for several weeks.

Table 5

MARKET	KARAMOJA: MARKET PURCHASES 1960/1963 inc.				
	1960	1961	1962	1963	1965
Kaabong	4,326	9,392	4,360	2,894	1,754
Loyoro	3,022	3,446	976	406	-
Kotido	3,769	8,275	4,740	1,879	4,396
Naitakwai	704	2,155	778	448	
Kangole	2,534	2,534	2,433	2,276	10,020
Loroo	564	1,637	711	176	
Kacheliba	271	920	1,048	956	2,957
Amudat	645	1,333	1,486	689	2,216
Nabilatuk	1,589	5,172	2,124	2,386	3,126
Nyakwai	138	637	528	81	1,067
Moruita	684	684	-	60	

Source: Veterinary District Files (markets) Moroto, August 1966.

* The Abbreviation D.V.O. - District Veterinary Officer will be used throughout this paper.

The frequent concentration is due to the completely unpredictable number and price of cattle offered and sold. Table 5 shows, as in the case of Kaabong, how the fluctuations on sales can be as much as 300% in three years and at Kangole in Bokora the difference between 1964 and 1966 is nearly 500%. Far more difficult to accommodate, however, are the in-year fluctuations which may bring over 700% changes from month to month under exceptional circumstances (May/June 1966), and normally produces wide divergences of up to 6,000/10,000 head of cattle within one year. Generally the pattern of sales within the year shows a concentration around the dry season (October-March) and a fall in the wet season with the advent of rain and the harvest of sorghum. However, the successive droughts have now completely upset this pattern and it has been reversed to give the concentration during the poor crop season.

The throughput varies very greatly, not only between years (Table 5) but between markets with some showing figures persistently above the others such as Kaabong, Kotido and Kangole. The lower figures represent, either secondary markets such as Loro and Kacheliba or an area where the cattle trade is of lesser importance. The only valid example of the latter is the market at Nyakwai in the semi-agricultural county of Labwor.

The internal meat trade of Karamoja is very small indeed and forms much less than the export figure of 91.7% would suggest. The 91.7% does not allow for the time-lag factor involved in quarantines and figures are 'carried-over' to a great extent. The amount of local trade passing through the organised markets and incurring a fee is so small that it will be totally discounted in the paper. As a consumption area, however, Karamoja was estimated to have consumed 11,700 animals (cattle) in 1965*.

Table 6

KARAMOJA: DISTRICT CATTLE SALES IN THE ORGANISED MARKETS

		<u>Pruchased</u>	<u>Exported</u>
1965	January	1048	1010
	February	1489	1434
	March	1918	1850
	April	1662	1560
	May	1884	1828
	June	2857	2729
	July	2682	2643
	August	3575	3522
	September	4139	2803
	October	2141	2080
	November	383	283
	December	2053	2012
		<u>25825</u>	<u>23753</u>

* This figure is totally unreliable and depends on reported consumption from district staff or chiefs. The margin of error is very large.

		<u>Purchased</u>	<u>Exported</u>
1966	January	2610	
	February	2790	
	March	4855	
	April	4429	
	May	6008	
	June	845	
	July		
	August		
	September		
	October		
	November		
	December		

Source: Veterinary Officer's Annual Reports, Moroto. 1965/66

The entire marketing process in Karamoja is thus orientated towards the export of cattle to the south of Uganda (Table 6) with 53% of a 5 year average going to the abattoir at Uganda Meat Packers in Kampala, 26% to the Kampala urban market and the remainder to Jinja and Mbale. The Jinja figure has declined very considerably however (Table 7) whilst Kampala and Mbale remain fairly steady.**

Table 7

<u>KARAMOJA: PURCHASES BY BUYING DISTRICT SINCE 1961</u>						
Purchasers	1961	1962	1963	1964	1965	5 year average percentage
U.M.P.	22,668	10,360	5,955	7,115	14,045	53.3
Kampala/b	6,766	6,532	4,902	6,851	5,395	26.9
Jinja/b	6,184	5,023	3,104	3,616	1,198	16.9
Mbale/b	599	820	220	1,138	406	<u>2.8</u>
						99.9

Source: Karamoja Market File, Moroto.

The markets are thus well distributed to a wet-season distribution though as it was pointed out:

"In connection with nomadic* tribes, it may be mentioned that the scattered nature of these tribes and their continuous movement deprive them of the ordinary marketing facilities"¹⁶

and this may partly apply to dry season Karamoja. The offtake process is characterised by a completely erratic pattern within the year, between the year and often between the markets; the overall offtake

* The word 'nomadic' is loosely used here to include transhumance.

** Jinja butchers have found it preferable to buy meat from Kenya as the delays and unreliability of Karamoja were too great.

for commercial disposal is very small @ 3.2% and virtually everything brought to market is for export to other parts of Uganda. Karamoja is very much a source area economy and market system is entirely related to the availability of stock and not to consumer in any way.

Variability and Unreliability

Table 8

CATTLE EXPORTED FROM KARAMOJA 1940/1965

1940	2964
	16024
	10114
	9000
1945	11370
	3463
	3219
	4014
	6810
1950	9071
	6194
	8185
	11918
	11868
1955	9309
	11234
	11605
	10393
	9570
1960	21685
	36217
	22735
	14181
	18049
1965	21044

Source: Annual Report, Veterinary Department 1965.

The factor which is clearly emerging as characteristic of the patterns in the cattle 'trade' of Karamoja is variability. Although, considered on a running-mean basis (graph 1), the sales of the District are increasing steadily to rival those of neighbouring Teso, the mean figure is compounded of a series of wildly fluctuating peaks (Table 8) which themselves are at the mercy of many other unstable and seemingly unrelated variables.

The distribution of the basic trade element: cattle, is itself a very fluid pattern and only the rhythm and the direction of the movement show any regularity. The number of cattle taking part, the extent of the wanderings in geographical terms* and the numbers falling under the influence of the numerous debilitating and fatal bovine diseases changes very considerably year by year. All this spatial variability is superimposed upon a static market infrastructure which is itself related more closely to the wet season concentration when the need to sell is generally minimised.

Table 9

CATTLE PURCHASES IN KARAMOJA BY U.M.P. LTD.

<u>Year</u>	<u>H/c.</u>	<u>Values</u>	<u>Av. Price</u>
1962	12,318	60,300/-	97/90
1963	6,974	47,900/-	137/36
1964	8,793	86,900/-	197/54
1965*	6,882	108,056/-	314/02
1966			

* (January - August)

This unreliability factor is reflected at every stage: the erratic - though explicable - variations in prices year to year (Table 9); month by month (compare June/July 1965 with June/July 1966 - Tables 10 & 11) the massive shifts in annual export totals (1959/61 represents a percentage change of 378 - Table 8) and, the considerable movement in annual throughput totals of the individual markets . . . though the market variations generally trend similarly at all markets in any one year (Table 5).

Table 10

<u>KARAMOJA PRICES</u>		<u>Ss</u>
1966	January	160
	February	170
	March	167
	April	164
	May	165
	June	249
	July	139
	August	202
	September	190
	October	235
	November	175

Veterinary Marketing files, Moroto. January 1967.

* In 1966/7 dry season the cattle were well into Teso and Sebci and raiding had penetrated Bugisu where crops were stolen (Wilson. pers. comm. Moroto 1967.)

Table 11

PURCHASES IN KARAMOJA: UGANDA MEAT PACKERS LTD.

1964	August	1070	211
	September	741	278
	October	400	273
	November	259	271
	December	360	333
1965	January	549	313
	February	862	327
	March	1292	292
	April	1035	236
	May	1184	237
	June	2164	248
	July	2146	228
	August	2899	239
	September	2174	287
	October	1734	283
	November	895	190
	December	-	-
1966	January	1626	161
	February	1976	158
	March	3366	153
	April	3109	157
	May	4298	161
	June	-	-
	July	3355	126
	August	812	
	September	-	
	October	348	
	November	-	
	December	-	
	1964 total	8798	
	1965 total	16,934	
	1966 total	18,890	

Source: U.M.P. January 1967.

It is hoped to show that this instability is a reflection of the same feature inherent in the present physical and social environment. But, in view of the large part which Karamoja plays in supplying the south with cheap beef stock and providing the local animals for the U.M.P. plant, as well as future plans at Soroti, it will be necessary to review actual, past and potential improvements from a geographical point of view. Still butchers make the long journey, pay the market fees, quarantine fees and tolerate a high theft rate*, marked deterioration in stock condition en route and, finally pay the costs of the two days rail journey from Soroti**. The importance of Karamoja, even under these conditions, to the cattle trade in beef animals, is evident.

THE CONTRIBUTION OF THE ELEMENTS OF THE PHYSICAL ENVIRONMENT TO THE UNRELIABILITY OF THE CATTLE TRADE.

"In a semi-arid environment, a greater premium is placed on mobility. This favours pastoralism as a subsistence mode ... and does not easily fit with the constraints of an agricultural timetable." Philip W. Porter, American Anthropologist V. 67, No. 1, p. 411.

Climate and Water Resources:

Although eastern Dodoth and north-eastern Matheniko counties are the only areas in Uganda to have a mean annual rainfall below 20"¹⁷ most of the district lies between 20" and 35" with some parts of the western and southern plains rising to 45"+ as well as local concentrations around the water-tower massifs of Kadam, Moroto etc. This: "should be adequate for prosperous ranching (m.a.r. of 20-30)"¹⁸, and only the area detailed earlier falls as sub-marginal to this definition as a ranching region. Some parts of Karamoja have a m.a.r. high enough to support settled agriculture especially in the Labwor Hills area where cotton is grown under a 35-45"m.a.r. regime. This is the critical factor in governing: the persistently low numbers of cattle put through Nyakwai; the low stocking density of this better rainfall area and; the low cattle population per head (Table 5, 1 and 2). The wetter zone in Pian county to the south has not developed to the same extent.

More important to the topic under discussion, however, is the reliability of the rainfall following the definition of the Royal Commission of 1953/55¹⁹ which shows Karamoja as lying almost entirely

* A letter from the 'Kampala Butchers and Traders Assoc.' to the Veterinary Dept. stated the losses were very serious and requested the Government to compensate them. Over 120 h/c. were stolen from Iriri quarantine in 1966.

** An estimated 52/- per head is added to stock in transit from Karamoja (20/- buyers' commission, 5/- at the market fees, 15/- railway charge, 7/- fees at abattoir, 5/- quarantine fees).

in the poor/bad prospect of 30" zones, the latter being coincidental with the Dodoth Matheniko belt referred to above. Most of Karamoja north of a line from Moroto to Napak lies in the fair/bad zone for 20" of which the Royal Commission Report states:

"... the climatic conditions normally preclude economically productive arable agriculture. These regions are the pastoral zones of East Africa" ²⁰

Other areas in Uganda having a bad prospect of 30" are major cattle zones such as Mawagola in Masaka Division and Bugungu county in Bunyoro.

The unreliability factor manifests itself in the frequency of devastating droughts which affect Karamoja, and figures are illustrated here (Table 12) for the very serious drought of 1961 when the low totals of the dry season caused considerable hardship and were followed by a period of serious floods which carried long into the "dry" season of 1961/2 (see November total).

Table 12

KARAMOJA: RAINFALL STATISTICS 1960-1961														
1960	0.01	1.2	9.0	2.5	9.1	2.3	2.9	1.7	.7	1.4	.8	.6	32.2	(a)
	0	5	12	7	13	1	6	9	5	2	3	2	65	(b)
	.34	1.3	2.9	4.8	5.6	3.5	5.3	4.2	2.0	1.9	1.7	0.9	34.6	(c)
1961	.0	.4	1.6	7.4	5.7	6.9	7.7	5.7	2.8	2.6	10 $\frac{1}{2}$ *	3.6	55.3	(a)
	-	3	4	9	13	10	19	10	7	9	20	8	112.0	(b)
	.3	1.2	2.9	4.9	5.9	3.5	5.3	4.2	1.9	1.9	1.9	1.0	35.1	(c)

(a) = Total inches

(b) = Days with rain

(c) = Mean inches.

Agriculture Department Annual Report 1960, 1961.

To the unreliability of the rainfall and the frequency of the drought must be added the nature of the rainfall which often arrives in short torrential downpours ... most of which is lost as run-off in the flash floods **that choke the wadis with** debris and chocolate coloured-water. Following the north-west to south-east alignment of the topography the isohyets show diminishing totals eastward, and, when the drought arrives its effects diminish westward towards the higher mean annual rainfall totals. However, since the drier of the rainfall bands are in the east, where the settled manyatta zone occurs, the problem of water is manifested in time and space. This is the first area to dry-up and it is this fact which necessitates the yearly movement rhythm to the wetter west, though some stock may be supported in the drier zone from 25-30' wells dug from

the bottom of the sandy river beds. Similarly, as MacMaster shows¹², the distribution of the sorghum plant - one of the few food staples which can survive the average conditions of Karamajo - is along the settled zone, and receives the full effect of the drought; failing or badly hit - on average - 1 in three years. The crop has failed recently in 1961, 1965 and 1966: all years of severe drought, which required the importation and distribution of 240,000 lbs/wk. of posho in 1966. It is quite wrong to think that the Karamojong and their related peoples of the District subsist entirely on cattle as do the Masai or other nomadic pastoralists of East Africa. Gulliver has pointed out for the Jie:

"The Jie have an ... economy wherein cereal foods are really no less important than animal foods, and this has been the case for generations ... scarcely a day passes when cereal foods are not eaten and it frequently forms the only food until the 'dairy' herds return in May"²¹

The importance of this digression into crops and drought is to reveal the correlation of drought, crop failure and cattle sales. Table 8 reveals that in 1961 a record 36,217 h/c were sold representing a 59% increase over the previous highest total since 1945. By 1963, when rainfall conditions had returned to a more normal situation, only 14,181 were sold, but when the present long drought started in 1965, the total rose to 21,044 to prelude an enormous rush of stock whereby Uganda Meat Packers were able to say they "could have purchased 60,000 head of stock in the first six months of 1966"²². The pattern is repeated for the individual markets in Table 5 being more marked in the areas of densest overstocking furthest from seasonal swamp e.g. Jie with stock at 1:8 acres showed a percentage increase throughput of 227% in 1961 over 1960, and in Kangole in Bokora with a stocking rate of 1:9.5 acres, the figure as a percentage of 1966 over 1964 is 2,271%. When the drought is severe and the crops fail, the people fall back on stock sales to convert animals into cash rather than starve or let the animals die.* They are not prepared to subsist entirely from their cattle. Further, the milk animals would become largely dry during a severe water shortage and the Karamojong very rarely eat beef²³.

The environmental constraints and pressures have reached unprecedented proportions in the 1965/66/67 consecutive dry seasons and Uganda Meat Packers totals for 1966 'Table 11' released in January 1967 show that they were able to buy a total of 180,890 head during the drought, whereas totals of 10,360, 5955 and 7,115 characterise the more 'Normal' rainfall (T.7) years of 1962, 1963 and 1964. The discrepancy in purchase totals between U.M.P. (Table 7) and the Kampala, Jinja and Mbale

* Mortalities amongst Karamojong stock estimated at 100-200,000 h/c. Veterinary Department Moroto 1961, Annual Report

butchers is explained by the fact that the latter three buy a higher class animal and have little difficulty in fulfilling their limited total requirements, whereas U.M.P. need a large total to make their plant run at an economic throughput and realise the economies of scale and they buy a lower class of animal at the lowest price and requiring 20,000+ per annum. The remarkable fall-off revealed by Table 11 from July to December 1966 is explained not by the end of the drought, but a problem which will be noted later - the lack of a holding ground to take the massive sales which occur in such erratic and concentrated periods. By November Iriri was full to overstocked.

The climatic environment is also a major factor in determining the price at which cattle are offered, for during the period after the price collapse in the 1961 drought the prices behaved as follows:

CATTLE PURCHASES BY UGANDA MEAT PACKERS LTD.

<u>Year</u>	<u>H/C</u>	<u>Values</u>	<u>Average Price</u>
1962	12,318	60,300/-	97/90
1963	6,974	47,900/-	137/36
1964	8,798	86,900/-	197/54
1965	6,882	108,056/-	314/02
1966	18,890	?	183/33 (11 months)

U.M.P. Ltd., 1967.

...the number of cattle offered and sold dropped sharply as the weather conditions improved and the crops succeeded, and with less need to sell the price of those animals offered rose to quite unreasonable heights for such poor stock until in 1965 the figure became unrealistic and few were bought; cheaper stock being imported from the huge concentration around Mwanza, Tanzania. By 1966, the drought had set-in and as crops suffered heavily people were forced to sell and as the price dropped by 58% the number purchased rose by 364% in a massive buying campaign whilst the price was down. Nevertheless, it is doubtful whether the increased sales will outlast the dry period.

Climatic factors are influential in the in-year sales pattern also as the 1966 figures reveal (Table 10) starting with a very low price in the carry-over of the 1965 dry-season in January-June. In June, the crops are harvested and the price of cattle rises steeply, but falls sharply the following month as the crop harvest is rapidly revealing its shortages. The price remained low until October, when Uganda Meat Packers ceased buying owing to congestion at Iriri and the difficulty of selling existing stock and the average price was made artificially high

by the withdrawal of the biggest buyer and the continuing purchases of the higher quality butchers.

IMPROVEMENT OF WATER RESOURCES:

"The development of water resources without land reform grazing control and the co-operation and self-discipline on the part of the producers is often the cause of the degradation of the land and generally should not be proceeded with in the absence of these prerequisites"
East African Livestock Plan - Draft copy November 1966
(Cyclo.) F.A.O.

Since 1938 a plan of dam, tank and borehole construction has been in operation designed eventually to ensure stock of their estimated requirement of 10 gallons per day²⁴ with the aim of stabilising the cattle situation within Karamoja. The 108* dams and tanks which have already been built²⁴ have been aligned along a 20 mile-wide strip flanking the Teso border. The intention behind this distribution is to ensure that the stock remains within the district even during hard dry seasons. Grass, however, does not grow in dams. In keeping the cattle inside Karamoja and attempting to stop the transhumant wanderings into Usuk and Sebei, the authorities hoped to stabilise the distribution of principal cattle disease such as Rinderpest, Pleuro-pneumonia and East Coast Fever (see later section "Disease") for which the Karamoja boundary is a crude natural frontier.

The water-shortage problem is partly environmental (as has been shown) but is also partly a reflection of the peculiar social attitude of the Karamojong, Jie, Dodoth etc., who attempt to carry the highest possible number of stock regardless of condition on the very limited and unreliable environment. This form of "insurance" and prestige leads to an environmental cycle whereby, in a bad year many of the stock are sold and the grazing is given some chance to recover, but the next year there will be few sales as crops improve and an attempt is made to reach, and exceed the total previous to the necessitated offtake. Reproduction, survival and size all improve during the good years. Eventually the situation is reached whereby stocking adjusts to the better years and the first drought is characterised by massive fatalities (the Masai lost over 400,000 animals in one year of drought in 1961), and great suffering by the other cattle which lose condition rapidly as they are watered often only on alternate days²⁵.

* In the 1967 survey (January) 18 dams were declared "lost". Camp. Water Development Department personal communication, Jan. 1967.

The water development programme has considerably increased the pressure of grazing resources along the western strip which houses the dry season concentrations from the southern Karamojong (Matheniko, Pian Bokora and some Upe people), and the natural limitation which nature imposed on stock numbers through drought, has partially been relieved by the water development programmes of the decade 1950/60. However, in 1956, it was stated: at the outset of the biggest dam building drive:

"I agree with the Commission's contention* that water development should not be undertaken merely to perpetuate subsistence agriculture, or herds of unproductive stock ..." ²⁶

... and the evidence shown earlier clearly reveals that by relieving the pressure to sell in this District by partly relaxing the rigorous grip of nature over the pastoral 'economy', the sales will drop and prices will rise. Water development has inherent in it in Karamoja, the biggest threat to the natural environment, the sales potential and the District economy - if carried out without a thought of the unusual economic responses of the people.

The present enormous pressure on the natural water resources is also a result of an administrative misinterpretation of the inter-war period when much of the Usuk seasonal grazing land of the southern Karamojong was given to Teso and rapidly occupied by the Iteso causing considerable inter-tribal hostility. At the same time the dry season grazing in Karasuk from Kunyao in the south to the Chemerongit hills in the north were given over to Kenya and the Suk people who similarly occupied hurriedly, the area left vacant. The pressure in the small area of dry season savanna left to the Karamojong became enormous and it is now clear that: "Karamoja is fully stocked at present levels of water and management" ²⁷. The uselessness of developing one facet of this statement without parallels in grazing management, rotations and stock number control cannot be overstressed.

To some extent a claim can be made that the "construction of tanks in relatively waterless western plains ... has tried to increase the amount of grazing available to the Karamojong who graze in the south (sic)" ²⁸ **, but this area was opened to a system of seemingly incorrigible over grazing and mismanagement and has suffered accordingly (see section on 'Vegetation!'). A certain firmness is necessary if the development of water resources is not merely a step in increasing the already over-stocked nature of the district ... and in view of the

* The East African Royal Commission: 1955

** The same author makes the remarkable statement that "the western plains are an area of 'lower' rainfall (sic) in which water and grasses are accordingly less abundant".

complete failure of other destocking or stock-control methods on the diminishing environment, there is a strong argument for controlling the water available at any one point. A suggestion that the power-head on the borehole should be under official supervision on a controlled rationing basis*, or security guards at the tanks and dams has been made, and however inhuman this may seem to certain elements, the alternative creeping erosion around the dams, collapse of dams and inter-tribal hostility and massacre in search of water and grazing are not a particularly favourable alternative²⁹.

The present water development situation should be stopped as it presently stands, and the plans for another 60-100 tanks and dams is difficult to justify unless they are rigidly controlled or designed to stabilise, as part of a larger plan, the population and a reasonable number of its stock in a favourable location. Indiscriminate provision of water however well adjusted to the catchment area and other hydrological criteria, cannot but bring long-term disaster to the District. The present 108 units, and one of them reaches 450,000,000 galls., have done nothing to stabilise, improve or even check the position of the diminishing environment ... and the principal sufferer besides the Karamojong people ... is the subject of the next section.

THE DIMINISHING PASTURE:

"The main characteristics of improved ranching would be the relation of stock to carrying capacity, pasture management, distributed water supplies and access to markets". Sessional Paper No. 4, of 1956/57.

The pattern of vegetation in Karamoja is in a state of rapid change, and the change is for the worse. The three zones of Savanna, Steppe and Thorn bush are all sub-climaxes or man-induced vegetative assemblages. Very broadly the pattern of the three zones follows the distribution and alignment of the mean annual rainfall isohyets but the boundaries are in a state of change which cannot be related to any shift in the absolute or relative disposition of the isohyets.

In the west, along the wetter 25/40" isohyets lies the savanna belt typified by perennials such as Hyparrhenia and grasses typical of a fire-climax - especially Themeda triandra. The composition of this zone is largely a result of the practice of annual burning at the outset of the dry season migrations when the herds arrive from the east so that the tick population may be reduced and the tall, low protein stands can be quickly replaced by fresh green flushes. This area, especially because

* The situation of a borehole attendant refusing several armed Karamojong is perhaps ... a little unrealistic.

of the aquatic grasses in the wetter combretaceous savanna zone, is the factor which enables the large numbers of cattle to be kept in the otherwise semi-arid areas of Karamoja.

The savanna zone swings north-east into Dodoth country and allows a very high in.-county stocking rate and less migratory pressure.

Flanking the savanna on the east is the Steppe zone characterised by a lower grade of annual pasture with grasses typified by *Sporobolus*. This area per se supports a much lower cattle population being dependent when the dry season arrives, on the savanna to substitute for the annuals which die down. The distribution of steppe (see map) coincides fairly generally, with the exception of Dodoth, with the wet season concentrations in a strip along the centre of the district from Kaabong to north of Amudat.

The third zone lies along the eastern margin (see map) in two blocks: one in Matheniko from southern Dodoth to 20 miles south of Moroto; and the other block lies around Amudat in Upe. A third strip runs through Bokora into Pian. This is the thorn bush area which represents the lowest value in pasture and features semi-arid succulents as an index of the vegetation type. It is an area of very little grazing in the dry season and puts enormous pressure on the Upe people with their cattle stocked at 1:13 acres in the wet season to move into Karasuk. It may help explain the relatively low stocking density of Matheniko (Table 1) for the present grazing available in this zone is more suited to a stocking rate of 1:25 than 1:13.

Having briefly determined the values of three zones as pasture country it is now necessary to detail the rapid degradation of the vegetation, the changing relative distribution of the zones and the increasing xerophytic characteristics of the district vegetation in face of a stable climatic situation.

The 'movement' is from east to west and represent a gradual encroachment into the savanna. There is no question of a climax or sub-climatic readjustment to a fluid climatic pattern, for the savanna belt itself appears to be static. The most alarming feature is the encroachment of the steppe belt of annual grasses into the perennials. As this occurs it naturally diminishes the amount of available dry season pasture. Wilson³⁰ has studied this movement and by a comparison of aerial photogrammetric cover he has estimated the encroachment at an average 1 mile per annum based on photographs taken in the mid forties and early 1960's.

* 'Movement' is used relatively: one zone relative to the next, not in terms of physical movement.

As the annuals spread there is less opportunity for burning since the cover is thin, and with a decline in burning in the savanna area the composition will change and fire species like *Themeda* will be gradually eased out or seriously suppressed. As this zone extends westward it requires greater movement outside the district into dangerous disease zones against which the Karamojong stock have little to no immunity (ECF - see next section), it increases the overgrazing on the diminishing amount of savanna and overgrazing is the principal feature which brings in the annuals. The annuals reduce the burning and so the degradation is more-or-less complete. Wilson²⁵ has also pointed out the increase in harvester ants which accompanies a decline in burning.

The stock-carrying capacity of the land within and peripheral to, the District, is declining as the steppe encroaches, and more spectacular on the ground, is the threat posed by the follow-up movement of the thorn bush. This area is typified by an overall redness in the dry season as the grassy vegetation dies down leaving the bare surface open to massive gully erosion which is now a characteristic part of the landscape of parts of Upe. When the grazing reaches this stage of degradation, it will take many years to regenerate the parts which have not been completely eroded. This landscape, however, (quoted in Wilson²⁵) was once an area of tall, waving grass - but overstocking by the Suk/Upe peoples has destroyed the environment on which their livelihood depends. Arguments, however, such as that put forward by Hursh:³¹ "that the area is one of active desert encroachment ... because much of the soil has become bare in the living memory of some of the inhabitants" are unrealistic in view of the high rainfall of most of Karamoja - even in the north east. It is doubtful whether a desert could ever encroach on an area with a mean annual rainfall of 20" plus. He further contends that Karamoja is following the former grasslands of Middle East:

"The most severe form of land punishment known is to subject an area of marginal rainfall, first to cattle then to sheep, goats and donkeys and finally to camels. Ample evidence points to the fact that this is the same sequence which created the widespread deserts of the Middle Eastern Mediterranean countries"³¹

Sheep certainly are a very destructive element in the environment of a marginal area, because of their method of pulling up grass to roots level. Browsers such as camels, goats and donkeys however represent an increase of biomass at no further expense to the grass and help keep the bush down.

The first essential move in protecting the resources of Karamoja as a pastoral area is to stabilise the vegetation ... and this requires a reduction in stock numbers so that they are not adjusted to a good year stocking rate. Following stabilisation, a programme of regeneration can be carried out, for most of the answers are known and only the means of implementation is awaited. Trials in Aperos under the Intensive Reclamation Scheme detailed in the Karamoja District Plan³² as well as other experiments under the Agriculture Department, have proved that the "trials sited in the Savanna/Bush areas showed a rapid regeneration of the perennial grasses such as Themeda and Hyparrhenia forming in 2/4 years, an effective cover" ³³

Further, the 'cordons sanitaire' detailed earlier, between each of the major tribal groupings i.e. along the Kotido/Kaabong road, show a fine pastureland which is the natural vegetation of much of the down-graded steppe area. Though the exact type or extent of the true climax vegetation is not known, it is certain that any controlled rotational grazing, would lead to nothing but a major improvement in the pasture environment of the District. It is not certain that the natural climax per se is a desirable end-result, and burning is recommended to create a fire sub-climax in order that control of regenerating shrub, increasing harvester ants, and a good stand of Themeda triandra evolve. If this vegetation improvement plan could be carried out, much of the district could eventually be legitimately stocked at a stable rate of 1:10/14 without the migrations, and a rational distribution of water scientifically devised.³⁴

As long as the attitude persists that the grazing land is "everyones" and no-ones' "there can be little movement towards a rationalisation of the present serious overstocking cycle. The vegetation cover will continue to depreciate as the steppe encroaches and the overstocking is exaggerated on a diminishing pasture environment. The quantitative mentality of the Karamojong exists at the expense of the grassland.

DISEASES: THEIR DISTRIBUTION AND IMPORTANCE TO THE CATTLE TRADE OF KARAMOJA.

The position of Karamoja relative to the distribution of several major bovine disease is critical. It forms a boundary between the high East Coast Fever infestation of Teso, and the massive rinderpest and pleuropneumonia concentrations in the Sudan and Turkana. Since Karamoja depends for its district economy on the export trade in cattle to the south, the problems arising from disease are considerable since the large numbers of exotic dairy cattle in the consumption area would

suffer greatly if any of Karamoja's endemic disease were to travel with cattle. As a consequence, the movement of cattle from Karamoja is based on the factors of isolation after sale, and quarantine inspection. This involves considerable delays in the transit of cattle from market to consumer and is one of the biggest stumbling blocks in the way of a fully organised commercial offtake. Further, the presence of a disease such as Rinderpest closes many of the markets of Europe and U.S.A. (who buy 70% of the world's meat trade) to cheaper canned meat.* The problem of disease control in a transhumant economy are obvious. The high disease infestation level also means considerable losses through condemnation at the reception end under veterinary scrutiny. Of U.M.P. cattle arriving in Kampala, the following figures for losses through disease are quoted:

<u>May 1st. to December 31st, 1966</u>	<u>C.bovis</u>
Total number slaughtered	18,010**
Carcases totally condemned	2,093
Percentage	8.6%
Overall condemnation	15/20%
Karamojong stock	

R. Mitchell, Veterinary Office Uganda Meat Packers Ltd.
1967.

The economic drawbacks of such a high total loss percentage are obvious and the money expended on purchase and transport has been wasted, for there are no by-products at U.M.P. to alleviate the losses.

The boundary of Karamoja represents part of the international boundary zone across Africa against Rinderpest. Although classified as endemic in the area, cases have dropped to virtually none and rarely exceed 8 to 10 per annum³⁵ following a 10-year mass vaccination drive. It now seems that the great Rinderpest epizootics which formerly swept through Uganda no longer pose a threat to the cattle trade of Karamoja.

* The Uganda Meat Packers have recently been classified as Factory No. 1, with approval to export canned meat to U.K. following an agreement with British authorities.

** Of this figure 13,438 originated from Karamoja, but the other would have been largely clean animals: all those from K.M.C. and most of those from Mwanza.

The climate of Karamoja precludes the principal disease threat of most of Uganda: East Coast Fever, for the humidity is too low for Rhipicephalus appendiculatus to survive except in the higher humidity areas along the western border and in Pian where the mean annual rainfall reaches 45"+. Here, a Veterinary Department dipping scheme passed through 250,727 cattle in 1966³⁶ in order that the disease might be contained, for the animals in Karamoja have not developed the degree of immunity through natural selection which exists among cattle in the highly infected Teso District. Losses through infection are consequently very high³⁷. Raiding has introduced E.C.F. into areas such as Kadem where it did not exist before³⁷.

Because of the migratory nature of the cattle economy, there is a great threat that wanderings further into Teso each year will cause a series of heavy losses, and bring the tick and parasite back to the higher humidity areas within Karamoja. For this reason free dips are situated along the Teso/Karamoja District boundaries, and as mentioned earlier, the dams and tanks are all contained in a strip along the Karamoja side of the border to try and prevent movement into a Rhipicephalus zone.

The greatest threat posed by the geographical distribution of disease in Karamoja is its position relative to Contagious Bovine Pleuro-Pneumonia. This disease surrounds the district along its international boundaries and attempts to combat the periodic outbreaks of C.B.P.P. are frustrated by large ingresses of refugee cattle from the Sudan such as in 1964 when over 16,000 cattle entered in six weeks bringing animals seriously infected with C.B.P.P. which is enzootic in their home area. Should this disease enter the cattle isolated for trade, it could cause enormous damage to Uganda's dairy industry. This happened in 1964 when an infected animal reached the market at Mukono illegally and caused massive quarantine* arrangements and killed the cattle trade; the sole source of income; for several weeks in Karamoja. There is therefore, considerable pressure not to close the markets and try to continue the trade in geographical isolation from the disease. When the disease struck, again from the Sudan, in 1962 out of 1,330 h/c., 1,025 died. So far, the disease has been successfully contained in Karamoja** with two brief and successfully controlled exceptions. This is, however, a considerable threat hanging over the cattle trade and could lead to enormous delays, deaths and economic losses, not only in the District, but wherever it may spread.

* 341,125 cattle were vaccinated in Karamoja during this threat³⁸.

** Annual pleuro-pneumonia vaccinations 1966: 408,405.

Trypanosomiasis is a small threat to Karamoja as only 3.5% of the land area is actually denied to cattle by tsetse, and it is now contained behind a barrier 38 miles long and a new consolidation line is being built along the Naurus/Lokulas watershed (map) which will release some 300 square miles of pasture.

Karamoja is the home of several festering disease, all of which are a serious threat if they escape. At the same time, it is free of the crippling E.C.F., and ironically enjoys as a consequence a growth rate on its overstocked pastures, of twice that of the rest of Uganda. The export cattle trade must therefore continue in complete isolation, within and without Karamoja's geographical limits if the threat to the district economy and the national herd is to be matched.

THE INFLUENCE OF SOCIAL PECULIARITIES:

"Western civilisation has failed to induce a new outlook towards efficiency and productivity. The changes which have taken place in the last half century, though they may appear spectacular in many ways, are only superficial. The traditional attitudes and behaviour in the rural areas are still a major obstacle in the way of progress".
Agricultural Productivity C'ttee Report, Entebbe, 1954.

The social attitudes of Karamoja are typical of the sentimentalities found amongst essentially pastoral people in East Africa. Much the same attitudes can be found in Uganda among the Bahima people of the south-west. It prevents: a planned economic exploitation on a large commercial scale in ranching; planned offtake; disease control, and provides a constant source of embarrassment for a developing country anxious to destroy what is considered evil from the past.

The principal social factors influencing the pattern of marketing described earlier are: a quantitative mentality; a strong sentimental attachment to stock and and acceptance of disorder as order.

The Karamojong and related people in the district with the exception of the Labwor, keep cattle as the principal element of a subsistence economy. They provide not only milk and butter, but urine, hides and blood³⁹. They are not a principal source of meat and are very rarely consumed as the brief enjoyment provided by the meat could not compensate for the strong sentimental attachment to the animal and the desire for a large herd, unless the animal was barren or very old. The quantitative "insurance" factor mentioned earlier whereby large numbers are kept to combat a drought year is one social factor which

helps to retard the sales, as does the quantitative incentive provided by the high bride price. This is generally payable in cattle and the cash alternative is almost unknown. From 20 to 100 head may be needed and to diminish the herd for cash by sale does not assist in this very essential social problem. The cattle are also the sole measure of prestige and this is entirely dependent on numbers and not quality for, as Elizabeth M. Thomson stated:

"Cattle do not represent wealth to the Dodoth - they are wealth" p. 7.

Coupled with these critical social factors, which work to keep the offtake from the indigenous herds to an absolute minimum unless the circumstances are quite exceptional as with drought, is a lack of a major substitute incentive to encourage sales. In most parts of Uganda the commercial factor has penetrated fairly deeply into even the pastoral economy and most people have a desire as well as a need for cash. In Karamoja the incentives are less and the pressures against them - very strong. Basically cash needs are for tax, clothing, piece goods, school fees. In Karamoja, the desire for consumer goods is very small, and the large size of the district coupled with the essentially dispersed nature of settlement does not encourage retail outlets. School fees play a very small part because of the social attitude towards education being not one of indifference as in many parts, but one of basic hostility. In the 12,000 or so square miles of Karamoja there are only:

Primary Schools	83
Primary Schools (Acholi)	161
Enrolment in Primary Schools in Karamoja	9,098
Enrolment in Primary Schools in Acholi	45,952
	(40)

and the amount of cattle sold to produce school fees for this number would be negligible. These commercial and educational factors are not providing much of a destocking incentive at present, and the great capital asset of the large numbers of surplus cattle which could be marketed annually is in contradiction to the customs detailed so far. Further, the sentimental attachment ensures that only the oldest or sickest animals are trailed to market for sale, and there is no concept of a "marketable surplus" or a "quality price differential incentive"

The social acceptance of raiding and insecurity as the norm of an ordered society by the peoples of Karamoja has repercussions in disease control, prospects for large scale commercial development, the present marketing system and the economic development of Karamoja. Raiding is regarded as a perfectly respectable social practice³² and there are considerable pressures for people to take part in, rather than avoid or prevent raids. Prestige is enhanced considerably after active participation in a successful raid. In view of the size of the district and the inaccessibility of many parts in the wet season, the prospect of efficient security control is obscure.

During a disease outbreak the mass movement of cattle through raids encouraged the spread of the disease over a greater geographical extent of the district and possibly, beyond into neighbouring cattle areas. In early 1966 the Sudanese Didinga stole 2,000 head from the disease quarantine at Kamerisogol, and at the same time a raid by the Matheniko and Bokora on the Jie left behind 120 bodies (human)⁴¹. The whole value of isolation and quarantine to permit trade movement from a diseased area breaks down if these isolated cattle are subject to raids. Even Iriri, on the district border along the Soroti road lost 120 heads in 1966. Whilst this insecurity persists development is virtually impossible in the district, for improvement provides an incentive to steal, pasture improvement through enclosure is in contradiction to customary grazing tenure as was proved with the Intensive Reclamation Area scheme in Bokora which was trampled down as soon as green grass established, and the fences were destroyed. The high theft incidences will not encourage any commercial ranching within the district which could stabilise the erratic offtake.

The constant insecurity, lack of schooling, commercial and social backwardness of the people are an embarrassment to the government of a developing country, and every effort will be made to stabilise the social position in Karamoja

DEVELOPMENT PROJECTS IN THEIR ENVIRONMENT SETTING IN KARAMOJA

The erratic and unstable annual offtake has brought forth pressure from many interested parties in order that some form of stabilising development should be attempted in the District. Pressure comes from the retail, wholesale, District Administration and Veterinary quarters and has resulted in a considerable number of schemes - many of which gradually folded up, but most of which ran into considerable strains for both the physical and human environments. The projects fall into four closely inter-related types:

- (1) Destocking: The Karamoja Cattle Scheme (K.C.S.) was started in 1941 to supply troops with fresh meat, but was soon recognised as:

"a disease control measure, a destocking instrument and a means of channelling the profit into the African Local Government"³²

The intention of the K.C.S. was to buy at a low price (not more than 33c/lb⁴²) on a weight basis as many cattle as was possible in order that the pressure on the district was eased. This intention developed with the scheme which lost its original motive at the end of the War. A target of 10,000 h/c per annum was set and roughly maintained through exporting cheap stock to butchers in the south at a price which included the transport. Purchases were by private treaty between the itinerant government agents and the seller, and the monopoly position kept the price in the district down* whilst assuring the African Local Government of an average revenue of £25,000 per annum. However, pressures were exerted from above to buy everything possible regardless of the former price limits and the K.C.S. was losing an estimated £17,000 every year towards the close⁴³. At the same time competition from Uganda Meat Packers (then Fresh Foods) helped the destocking drive but pushed the price up in the face of the social reluctance to sell. Eventually, pressure from the butchers caused the scheme to be changed and the point of purchase shifted from the consuming railhead to the market in the District. This open competition at the markets, which were still conducted by private treaty made mass-buying of low-grade stock by an institution the size of U.M.P. extremely difficult. In 1964, in the face of continued pressure, the Karamoja Cattle Scheme was terminated. The occurrence of two drought years has upset the picture too much to establish quite what effect the change to auctions will have.

A second destocking scheme is that of the Teso Ranch. It was neither the intention at the outset when the ranch was established by Uganda Meat Packers in 1965, nor when it was taken over by Uganda Livestock Industries in 1966, that this should be the purpose. However, in its new form, it will certainly have an important role to play in this field. Originally designed as a fattening ranch for a herd of Boran steers bought from Kenya at a high price and a nuclear herd of high-grade breeders the Teso Ranch was situated opposite the Iriri Quarantine (map) in an area where thin human settlement density meant small compensation.

* Unlike the text-book monopoly.

However, the area is - as has been shown - in the Marcher Zone between the Iteso and the southern Karamojong in their dry season grazing area. The result was rather predictable and heavy stock losses (300 head + stolen 1966)⁴⁴ resulted in the abandonment of the original scheme.

Under the new management of Uganda Livestock Industries, Ltd., the ranch will fulfill an important function in relation to one major environmental problem designated earlier: the seasonal flood of cattle at a low price during the dry season and especially during a drought:

"...the widespread drought brought forth an avalanche of selling..."⁴⁵

and the problem exists of where to store these animals so that they do not loose conditions, face theft or suffer from serious disease hazards until the market can absorb them gradually through the year. The Teso Ranch, could, if its 40,000 acres were extended by Iriri's 34,000 and eventually an anticipated total acreage of 250,000⁴⁶ was achieved - act as a considerable holding ground and fattening scheme for immatures bought in poor condition at the height of the dry season in Karamoja, and sold on the open market through the year as their condition improves. This would considerably ease the short time horizon and seasonal shortage factor which typifies Karamoja as a cattle trade area at the moment. A situation, such as late 1966 where 400 head of cattle were offered at Kaabong and none were bought because Iriri was heavily overstocked and the cattle were facing serious grazing constraints, may then be avoided.⁴⁶

- (2) Productivity Improvement: This type of scheme is the most important for it should aim at rationalising production so that the stocking, grazing, management and marketed surplus are all adjusted to the balance of the natural environment. This is the type of development which has achieved the least in the way of tangible results, though much valuable data has been collected. Reference was made earlier of the Intensive Reclamation Scheme which eventually broke down through an inability to keep the local people off the trial site. Similar schemes have been successfully run by the Agricultural Department³³ and have met with considerably optimistic results. However, in terms of field extension there has been nothing, and the problems faced in terms of attempting to convince the Karamojong of the benefits of pasture regeneration, rotational grazing, etc., are quite overwhelming. It requires a considerable change in the pattern of life, and pastoral peoples are notoriously conservative. The instituting of wholesale water development has done little to nothing to improve productivity on

the natural environment, rather it has led to an indiscriminate increase in the number of stock of the same inferior quality. As yet, improvements such as enclosure regeneration, grass improvement exist only on trial sites and the step into the field is considerable.

Schemes have been suggested for scientific ranching in selected areas of Karamoja, and although they never became established they reveal several important environmental factors. The Longori scheme was a plan to ranch bullocks on an area of 10 square miles, 10 miles north-east of Mt. Napore in Jie based on the Longori Dam. The scheme was of interest because it was designed to be ecologically sited in relation to the "2 ecological zones: combretum with tall hyparrhenia, and clay plains with tall hyparrhenia (which are mentioned as being very suitable for planned cattle development)" ⁴⁷. It was planned that all the very immature stock (bull calves) offered by the Karamojong, who place a higher premium on cows, should be transferred for fattening to this spot. However, it was rather remote and the cattle would be just as likely to loose condition moving to the south after the fattening process. The scheme was finally vetoed by the Veterinary Department in 1956 because it jeopardised the urban trade:

"The African Local Government promised to supply Jinja with 400 cattle monthly, and it is necessary to maintain Kampala at or near this level. If all young stock were held back, this would not be possible" ⁴⁸

The second scheme was based on the rational use of an area proposed for tsetse clearance between the 38 mile barrier and the watershed from Kerenge to Lemej. This area of 400 square miles is virtually unoccupied except for a few cultivators along the hill-bases because of the threat from G. morsitans and the Turkana. A plan was suggested for the integration of agriculture and pastoralism (the Napore people of the area previously had an economy of settled agriculture):

"There is good agricultural land on the foothills and good grazing on the plains ..." ⁴⁹

The exploitation of this area would require the construction of a consolidation line along the watershed which would then leave the 300 to 400 square miles to be finally sprayed and cleared behind the old barrier. However, the new barrier would cost an estimated £56,000⁴⁹ and some productive use other than customary pastoral land-use, must be made of the ground to ensure a commercial return on the initial outlay and recurrent costs of the tsetse barrier. If a planned, possibly co-operative mixed economy unit were established, it would add to the District revenue, provide a demonstration effect for others, relieve the pressure in Dodoth and provide a valuable research ground

for collecting data.

However, the threat of the Turkana and continuous insecurity in this area make the returns at the present time very doubtful although clearing is going ahead. F.A.O. stated:

"The high cost of clearing tsetse from these areas cannot be justified in terms of ranching as the eventual form of land use" ²⁷

(3) Processing Developments:

In view of the considerable hazards facing the export trade from the natural environment, several attempts have been made to consider utilising the trade cattle for some processing end within the district. The disintegration plant at Namalu was an early attempt at this, and failed largely through geographical factors. Related to the K.C.S., the plant was designed to utilise the lowest grade stock which would not stand either physically or economically, the rigours of the journey to the south. The cattle could be turned into bone meal, biltong, meat meal etc., much in the way that the K.M.C. plant at Archer's Post operates. At the same time the plant could help to destock the area of the poorest animals which competed with the better stock for the limited grazing. A cattle tax was placed on each manyatta of one scrap animal, whilst confiscated stock of a low quality was also to be used. The scheme failed, largely through location factors for: it was in a zone too humid for the preparation of biltong; it was in an area where the higher precipitation produced a less severe drought and less necessity to sell; and it was an area where the prices were higher than in the north. Further, the product never received an enthusiastic reception in the consuming areas.

The proposed canning factory at Soroti will consume a throughput (optimal) of in excess of 85,000 head per annum, and this will ensure a market for cheaper Karamoja stock, but not at the prices which have prevailed over the past few years, for the canning factory would aim at a 35c/lb to 40c/lb liveweight price maximum.

The introduction of field-abattoirs could provide the necessary mobility to meet localised concentrations of cattle offered and convert them into some by-product where the cattle are too poor for export. This would be of value also as a destocking instrument:

"They (field abattoirs) can be of best use in overstocked areas in times of drought. Our conclusion is, that as an instrument of destocking, field abattoirs serve a useful purpose" ²⁷

(4) IMPROVEMENTS TO THE EXISTING INFRASTRUCTURE.

In 1964, the auction system was introduced in Karamoja to try and initiate quality buying and also to replace the individual barter system. It had a dramatic effect on prices and they picked up from 178/- to 258/- in season when the change came from K.C.S., to the auction system. The prices are now falling back largely due to the drought. At the same time, the higher prices realised saw a large increase in stock offered:

	<u>1964</u>	<u>1965</u>
January	0	549
February	148	862
March	38	1,293
April	152	1,500

U.M.P. purchases only.

(allowance may be made for the 1964/5 drought)

It is too early to judge the full effect of the auction system because of the extreme environmental conditions. All cattle to be exported from the district must go through the auction ring, and still large buyers find it necessary to buy outside the ring to obtain the number needed and the pass them through the formality of the auction ring to obtain the Veterinary pass to move the stock from the district. The system is still not geared to the mass buyer who has the biggest part to play in destocking the area and stabilising the rapid downtrend in the physical environment.

It has been shown earlier that cattle lose considerable weight and condition in the 3 day journey from the Karamoja border to the south as water and feedstuffs are largely absent during this time - or at best, in very short supply. As a result the already poor Karamoja animals arrive in very poor condition at the lairages and abattoirs of the main urban centres. If Iriri is overstocked, they lack even the advantage of a midway improvement point as there is little grazing available.

The railway, in reality the economic lifeline and originator of the Karamoja cattle trade is, nevertheless, an inefficient mode of transport since it is both inflexible and slow. However, trucking is not a feasible alternative since one vehicle can hold 40 animals and would have to make innumerable journeys to convey the U.M.P. needs of 900 head per month, and all without the prospect of a return load, which effectively doubles the cost of movement. The conditions in the wet season preclude truck movement within the district; but some investigation into moving stock along the all tarmac highway from Soroti to Kampala, Jinja and Mbale may be made by truck from a central holding

point. The travelling time could be more than halved and the subsequent improvement in stock condition on arrival would possibly save on the cost of returning empty.

A possible alternative is to chill all carcasses at an abattoir chill store and move them by rail in this condition so that they would incur no further losses in transit. However, the problems of handling a retail trade in frozen chilled meat would require considerable capital investment by the butchers and lies outside the scope of this paper.

CONCLUSION:

Karamoja emerges, by reason of the rigorous physical environment as a overwhelmingly pastoral area; and, as a source region of stock for other parts of Uganda by virtue of: the excessive number of cattle, per head of the population and, in relation to the physical resources; the extremely small size and slow development of the urban market in the District; the relatively low prices and the lack of an alternative cash income for the Local African Government which is expected to maintain social services and a basic economic infrastructure.

The nature of the present pattern of stocking, migration and offtake requires swift action to prevent the depletion of the natural resources of the area and, if the environment is to be stabilised and eventually upgraded to produce an offtake improved in regularity, size and quality, the number of stock must be reduced in the massive concentrations which exist at present; the pastures must be given time to regenerate and possibly rotated eventually so that they are given full regenerative potential based not on average conditions alone, but on the possibility of a drought year. At the same time, parallel developments in water resources should be established at selected points and in amounts related to a controlled number of stock so that an eventual stability can be achieved on the increased area of resuscitated perennials. In the social field parallel programmes should be developed designed to establish a greater cover of retail outlets, possibly itinerant stores at the markets, over the district to press the commercialisation of a basically subsistence economy falling into the commercial sector only when the rigours of Nature insist.

Eventually, Karamoja should be producing a reliable increased offtake of store cattle of an improved weight because of better pasture and water, for the consumers in the south, whilst the cattle which are still of a low quality may be bought up at field-abattoirs or walked to the canning factory at Soroti.

All this requires an enormous amount of co-operation, and tribal co-operative movements may be worthwhile objective. Animosity and mutual suspicions between certain tribes may be difficult to overcome for some considerable time, but groupings within tribes, or between friendly tribes such as the Matheniko and Dodoth represent an important starting point. Co-operation is a difficult concept to accept in an area where chiefs are unknown* and the position of a manager would not be easily understood, because of the essentially unitary nature of family life in Karamoja and the lack of bigger groupings. This would certainly help to eliminate the trader, whose capital limitations at present often retard the sales at the markets. All these developments however, are consequent upon action in preventing the very source of the economy from being eroded and destroyed.

March 1967.

* Chiefs do exist, but are a creation of the Protectorate Government.

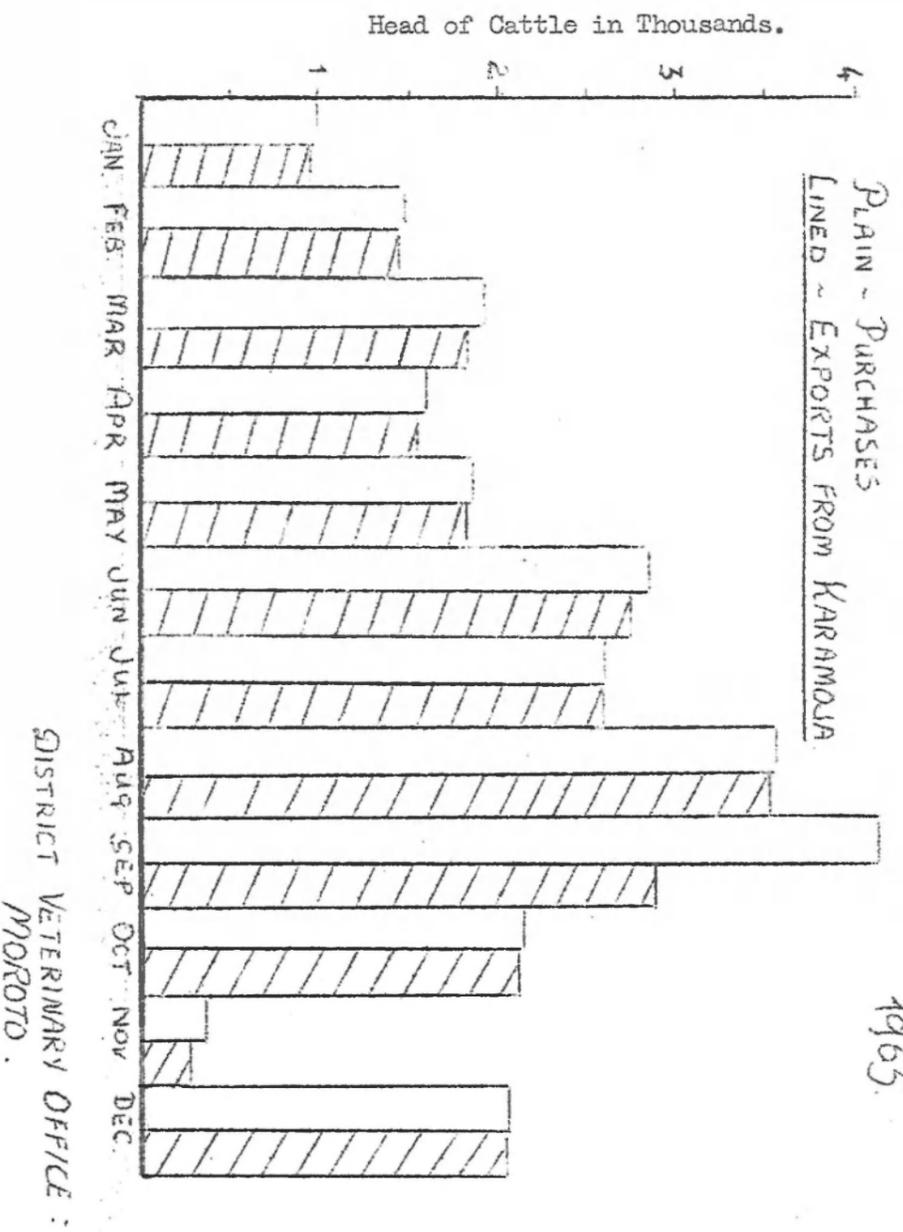
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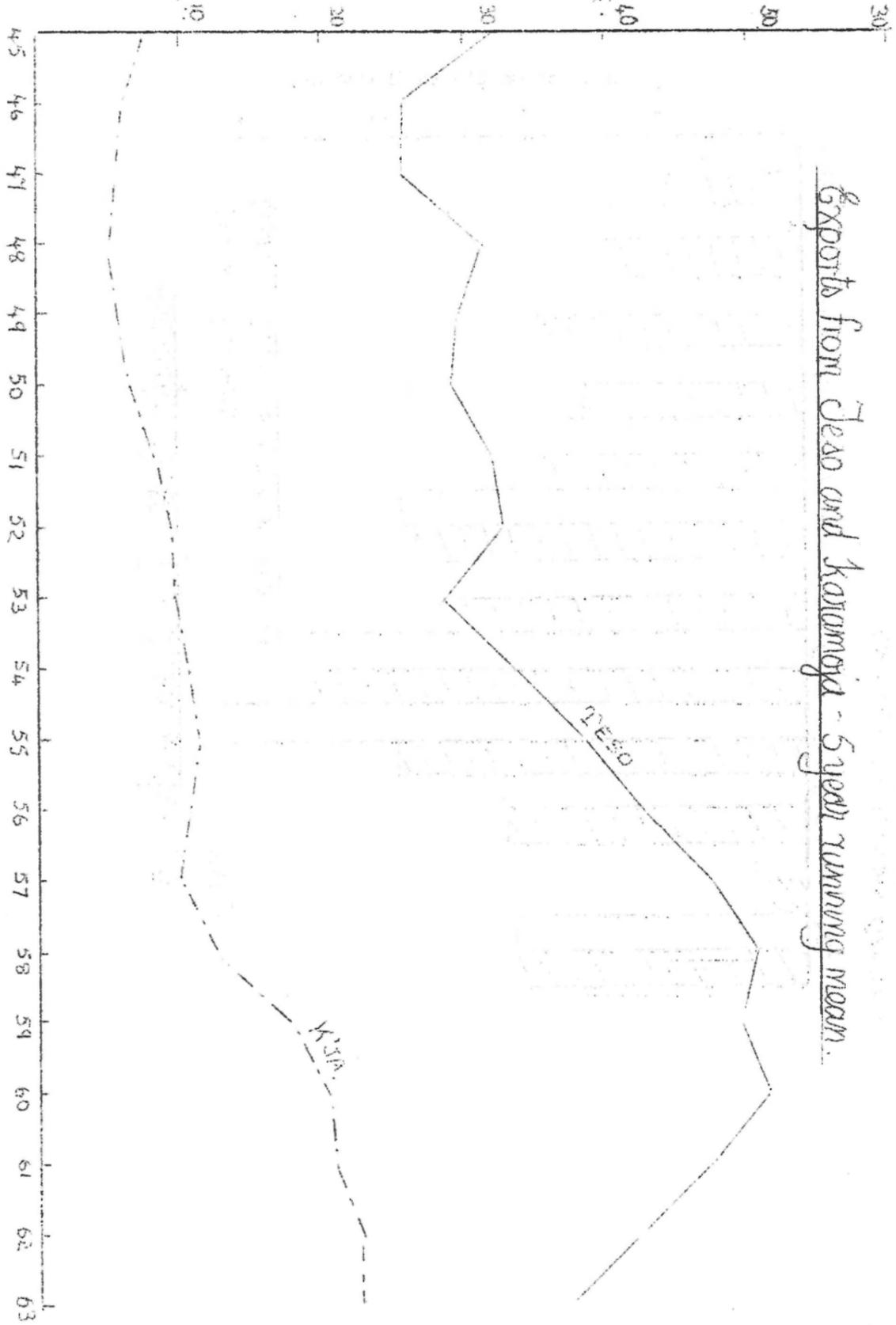
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Karamoja: Cattle Purchases & Exports

1965



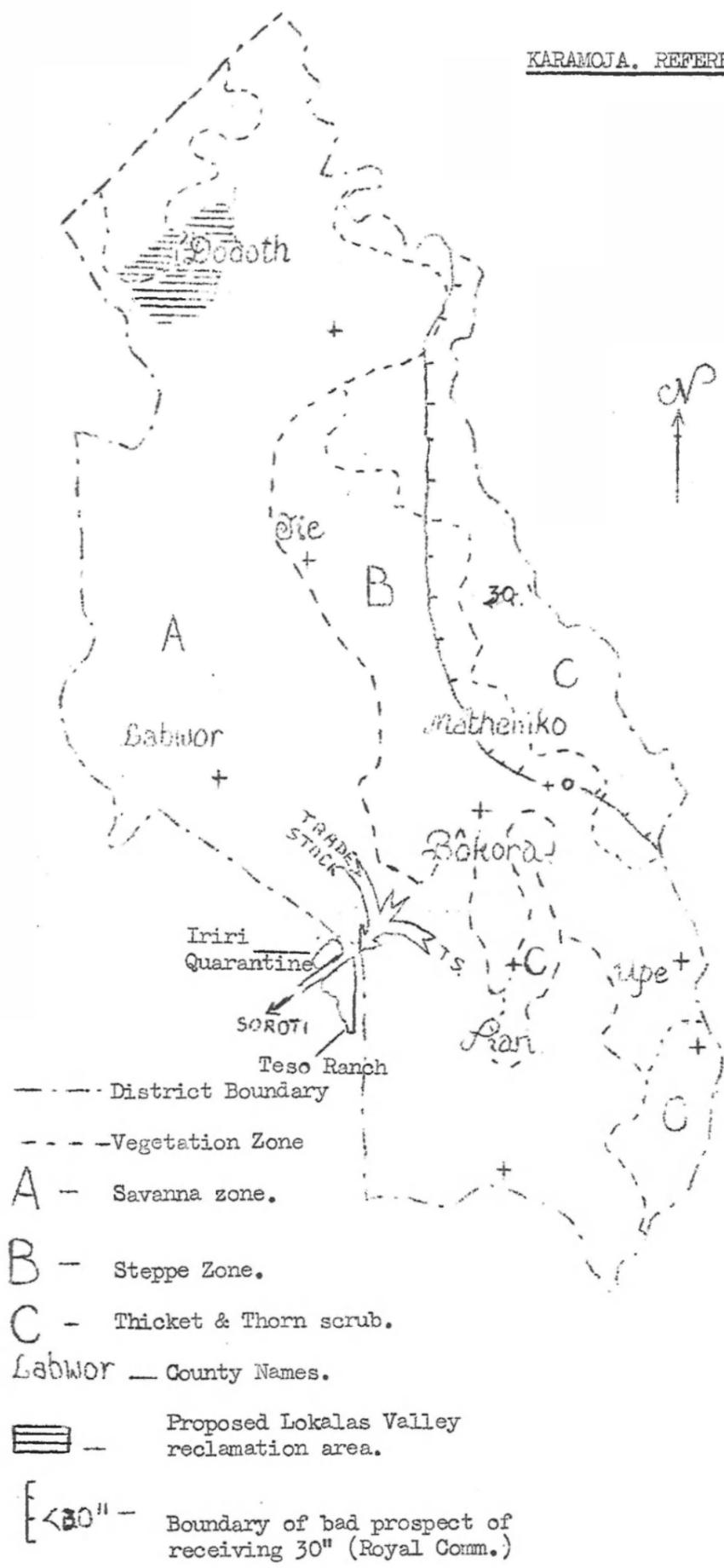
Thousands of Head



Exports from Deso and Karamoja - 5 year running mean.

Veterinary Offices
Moroto / Soroti

KARAMOJA. REFERENCE MAP.



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