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THE SOUTH AFRICAN BEEF CATTLE INDUSTRY: ITS RELATIVE IMPORTANCE TO AGRICULTURE AS A WHOLE AND RECENT DEVELOPMENTS IN SUPPLY AND DEMAND*

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INTRODUCTION

South Africa has traditionally been an agricultural country. Prior to the discovery of important mineral deposits in the second half of the nineteenth century, agriculture provided the base for economic growth and development (7). The growth in the mining sector not only injected new skills into a largely agricultural economy but also generated substantial markets for agricultural products. The need to feed the mine labourers was the beginning of the change from what had been predominantly subsistence farming to a market-orientated farming system. This transformation resulted in a decline in importance of the agricultural sector in the national accounts. Agriculture's share in the gross domestic product (GDP) declined from 71% in 1911 to only 7% in 1979 (5). Agriculture in South Africa is subject to high risks because of the variable climatic conditions prevailing over the greater part of Southern Africa. The country's unreliable and unpredictable rainfall is a bane to farmers. Years with below average figures are more common than years with an above average total. However, despite the limitations imposed by soil conditions, climate and topography, the country is, with a few exceptions, virtually self-sufficient with regard to food (9). Although exports of agricultural products show a highly erratic pattern, in 1977 South Africa was one of the only seven countries in the world that exported food, (1;8).

In this regard one has to take note of the fact that South Africa constitutes less than 4% of Africa's land area, has 7% of its people but produces approximately 20% of all maize, 33% of all sugar and about 50% of all meat in Africa (6;8;9).

In terms of consumption it can be said that beef dominates in all major market segments. However, the relative share of each type of meat differs among the different population groups in South Africa.

The population of South Africa is heterogeneous and multinational. It may be compared to Western Europe or West Africa in its diversity of cultures. Each major population group has distinguishable characteristics in terms of social systems, cultures, etc. The four main population groups are Whites, who are mostly people of Western European descent, Coloureds, who are people of mixed descent, Asians and nine main Black nations (9). Logically one would expect this cultural diversity in particular to have a significant impact on the demand for meat.

THE RELATIVE POSITION OF THE BEEF CATTLE INDUSTRY WITHIN SOUTH AFRICAN AGRICULTURE

The livestock industry is second to crop production in its contribution to the gross value of agricultural production. The gross value of agricultural production was R5 711,8 million in 1979/80. During the same period livestock and field crops contributed 35,3% and 48,5% respectively.

During 1968/69 the relative position was reversed to some extent in that these two industries contributed 42,0% and 40,6% respectively (see Table 1).

TABLE 1 - Gross value of agricultural production* 1948/49 to 1980/81

Year	Field crops	Horti-cultural crops	Live-stock products	Total
	R million			
1948/49	123,7	63,3	198,5	385,5
1971/71	700,1	275,7	555,1	1 520,9
1975/76	1 231,3	517,0	1 224,1	2 972,4
1980/81	3 236,4	970,2	2 524,4	6 731,0

*Data source: (4; 5)

During the twelve years preceding 1979/80 livestock contributed an average of 44,5% to the gross value of agricultural production. During the

*Based on an unpublished Ph.D. dissertation "An analysis of the economic performance of the S.A. beef and cattle market" by J.M. Laubscher, University of the Orange Free State, 1982

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TABLE 2 - Gross value and relative contribution to gross domestic product of different livestock enterprises,* 1970/71 to 1979/80

Enterprise	1970/71 R1 000	% of gross value	1974/75 R1 000	% of gross value	1979/80 R1 000	% of gross value	Average annual % change in real terms**
Wool, mohair & karakul pelts	71 927	13,0	113 016	10,5	261 345	13,0	+ 4
Chickens/broilers	42 836	7,7	159 322	14,8	317 392	15,8	+11
Eggs	31 131	5,6	62 968	5,9	85 968	4,3	+ 1
Cattle and calves slaughtered	160 992	29,0	309 683	28,8	624 352	31,0	+ 4
Sheep and goats slaughtered	82 353	14,8	133 489	12,4	233 669	11,6	+ 1
Pigs slaughtered	27 552	5,0	56 544	5,4	92 732	4,6	+ 3
Fresh milk & dairy products	132 686	23,9	221 765	20,7	373 201	18,5	+ 1
Other livestock products (including ostrich feathers)	5 639	1,0	16 709	1,6	25 890	1,3	+ 6
Total livestock	**555 116**		**1 073 497**		**2 014 549**		

*Data source (5)
**The consumer price index was used as a deflator (1970 = 100)

same period field crops contributed an average of 45%. (See Table 3 for more detail.)

TABLE 3 - Relative contribution of the different agricultural industries to the gross value of agricultural production for selected years, 1968/69 to 1980/81 *

Year	Field crops % of total ag.	Live-stock % of total ag.	Horti-culture % of total ag.	Total ag. & fishe-ries % of GDP**
1968/69	40,6	42,1	17,3	10,5
1974/75	44,3	38,7	17,0	8,4
1979/80	48,5	35,3	16,2	7,0
1980/81	48,0	36,0	14,0	7,0

*Data source: (5)
**For the years 1969, 1975, 1979 and 1980 respectively

In real terms the gross value of agricultural products showed an average annual increase of 4,3% for the 12-year period ended 1979/80. During the same period the gross value of field crops produced increased by 6% on an average annual basis, as against the 2,6% average annual increase in the gross value of livestock production. (See Figure A).

The cattle industry in South Africa is predominantly orientated towards meat production, the dairy sector being of relatively minor importance. During 1968/69 the gross value of cattle and calves slaughtered made almost the same percentage contribution to the total gross value of the livestock industry as the dairy industry, namely 25% (2). Towards the end of the sixties, the position of the dairy sector in relation to the beef sector changed significantly.

From 1970/71 onwards the importance of the dairy industry declined gradually - (See Figure B). However, it is making a major contribution despite the fact that it has shown very little annual growth in real terms (5) between 1970/71 and 1979/80. (See Table 2 and Figure C.) During the period 1970/71 to 1979/80 the gross value of poultry in real terms has shown an average annual increase of 11%. (See Table 2.)

In conclusion it is important to stress the fact that in some years the contribution of the livestock industry to the gross value of agricultural production was among the highest made by any single industry. This is particularly true when one considers the fact that in 1979/80 the gross value of all meat produced was almost the same as that of the maize produced, namely R1 268 million and R1 295 million respectively. These figures represent percentage contributions of 22,2% in the case of meat and 22,7% in the case of maize (5).

The agricultural sector in South Africa accounts for a significant percentage of foreign exchange earnings. During the period 1970 to 1974 agriculture generated about 33% of total exports, excluding gold bullion. From 1975 to 1979 this figure decreased to a mere 22%. Apart from wool, mohair, karakul pelts, hides and skins, butter and cheese, which contributed about 22% of the total value of agricultural exports during the period 1975 to 1979, no other livestock products have any significance in foreign trade (5). As far as foreign exchange earnings are concerned, therefore, the beef cattle enterprise has made a negligible contribution in recent years (10). Beef production in South Africa may be regarded as being orientated towards the internal market, which in fact has to rely on imports from neighbouring countries each year, with imports constituting as much as 11,6% in 1980. (See Table 4.)

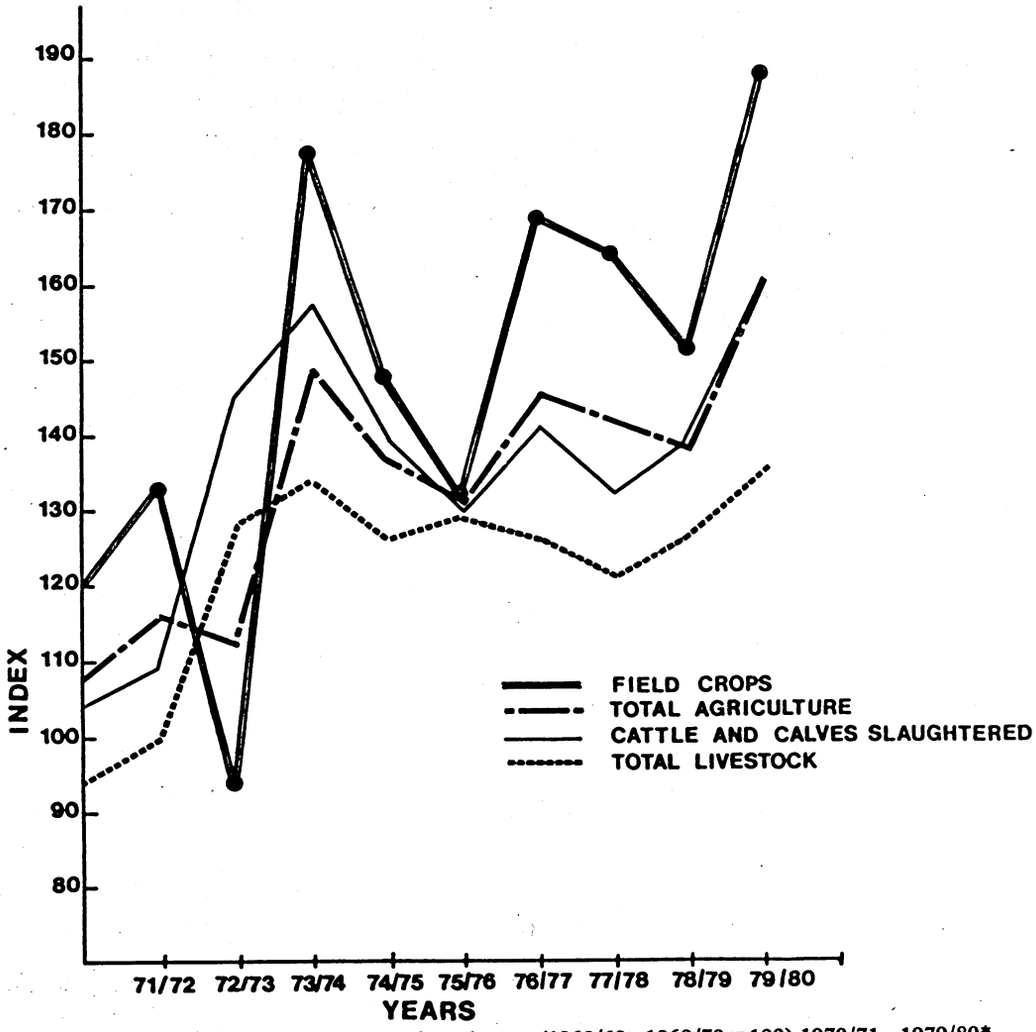

FIG. A - Gross value of different products in real terms (1968/69 - 1969/70 = 100) 1970/71 - 1979/80*

*Source: (5)

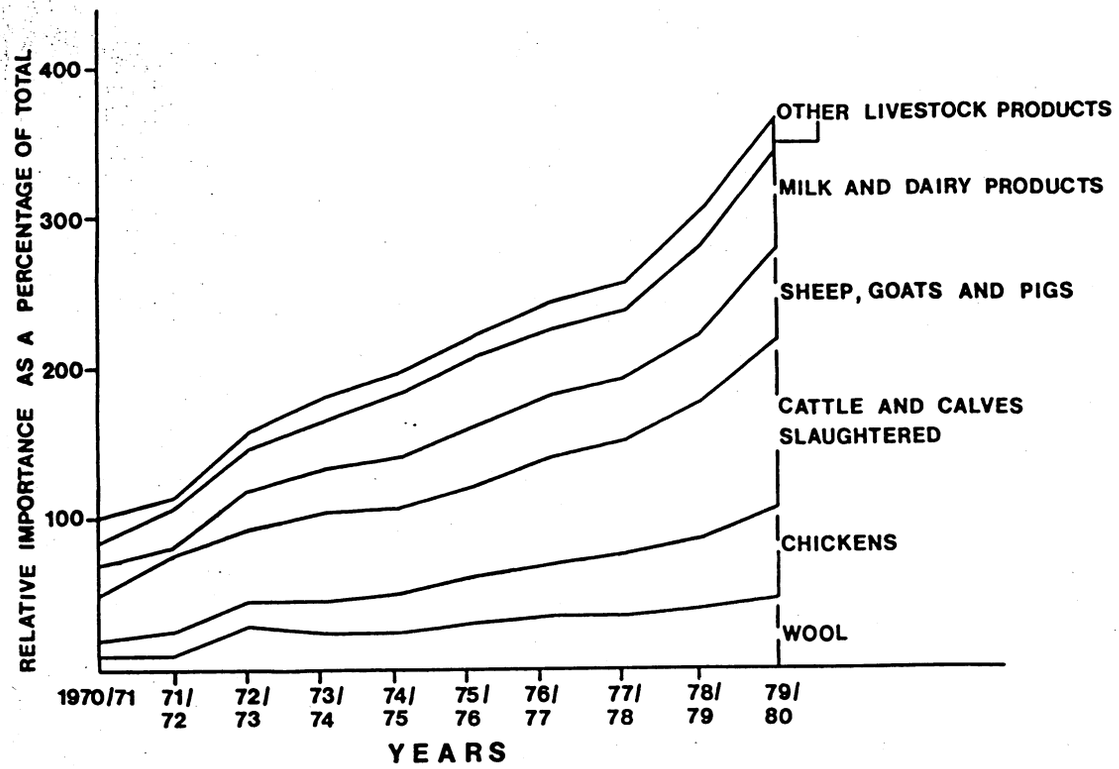

FIG. B - Relative importance of selected livestock industries to the gross value of livestock produced: 1970/71 - 1979/80*

*Source: (5)

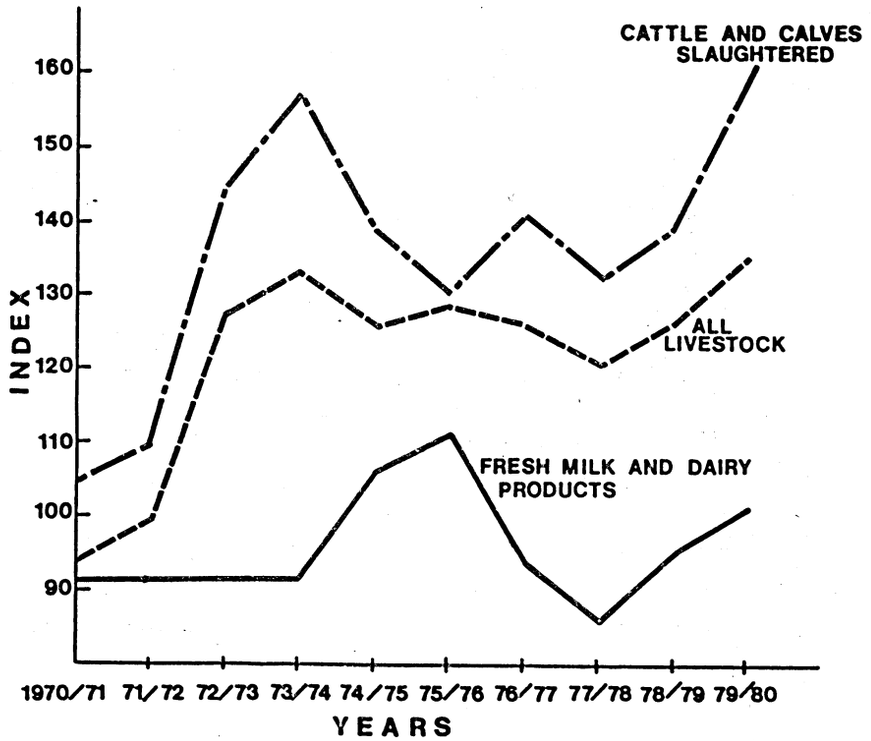

FIG. C - Gross value in real terms of total livestock, cattle and calves slaughtered, and milk and dairy products - (1968/69 (1969/70 = 100) — 1970/71 - 1979/80*

*Source: (5)

TABLE 4 - Availability of beef* (tons) in controlled areas, 1970 to 1980**

Period	Production	Imports	Exports	Availability	% of total quantity available	
					Own production	Imports
1970-1974	1 511 610	556 662	79 699	2 068 272	73,1	28,9
1975-1979	1 878 965	383 651	34 340	2 262 616	83,0	17,0
1980	448 596	58 632	12 357	507 228	88,4	11,6

*Data source: Meat Board
**Comprising the nine main consumer areas where the Meat Board regulates the flow of slaughter cattle

THE SUPPLY OF BEEF IN SOUTH AFRICA

In terms of total production of meat, beef and veal constitute the single most important product of the meat industry. (See Table 5)

TABLE 5 - The relative importance of different types of meat produced in South Africa for selected years (1 000 tons)*

Type of meat	1968/69		1979/80	
	1 000 tons	% of total	1 000 tons	% of total
Beef and veal	413	52,2	683	52,2
Mutton and goat's meat	207	26,2	194	14,8
Pork	75	9,5	89	6,8
Chicken	96	12,1	342	26,2
Total	**791**	**100,0**	**1 308**	**100,0**

*Data source (5)

Table 5 shows that beef was able to maintain its relative position, but this fact only tells part of the story. While total production of all meat increased by 65% during the years 1968/69 to 1979/80 there was a significant increase of almost 260% in the production of chicken.

About 25% of the total number of cattle slaughtered in controlled areas come from feedlots in or near these areas. Feedlot owners may buy directly from producers or may act as important buyers at country auctions.

From about 1970 onwards the development of the feedlot industry meant a major structural change in production methods. Not only could a certain percentage of calves produced be removed from natural pastures and fed in feedlots in order to accommodate more breeding stock, but the quality of beef produced in feedlots improved significantly.

It is however anticipated that feedlot production will remain at levels below 30% of the

total number of cattle slaughtered in controlled areas owing to an unfavourable price/cost relationship which results in low profitability. The relative profitability of cattle production, measured by the so-called terms of trade, has shown a decline in recent years. (See Figure D.)

This may be due to disproportionate increases in the cost of production, but it is surely indicative of the income position within the livestock industry. Although it is not an objective of government intervention in the marketing of livestock to subsidise production, it is a general objective of overall government intervention at least to try to ensure agricultural producers of a reasonable standard of living.

With regard to the farmer's share of the food rand, there is enough evidence that the farmer's share is declining. This is however the logical result of the food marketing function - which is becoming more complex and more expensive with urbanisation, geographic specialisation of meat production, the affluence of consumers and an increase in population.

Recent changes in the farmer's share of the consumer rand are shown in Table 6.

TABLE 6 - The farmer's share of the food rand* for selected years

Product	Farmer's share as percentage	
	1974	1981
Meat	62	59
Grain	42	40
Fat and edible oils	38	33
Dairy products	70	66
Vegetables	34	31
Fruit	31	37
Sugar	43	37
Total	**55**	**52**

*Data source: (5)

One can only postulate that the farmer's share will decline further in future. Cost inflation and consumer demand for marketing services will hold the key to the rate of future increases in the marketing margin.

With regard to future developments on the supply side, it is evident that beef is likely to maintain its relative importance.

It will however be necessary to consider all

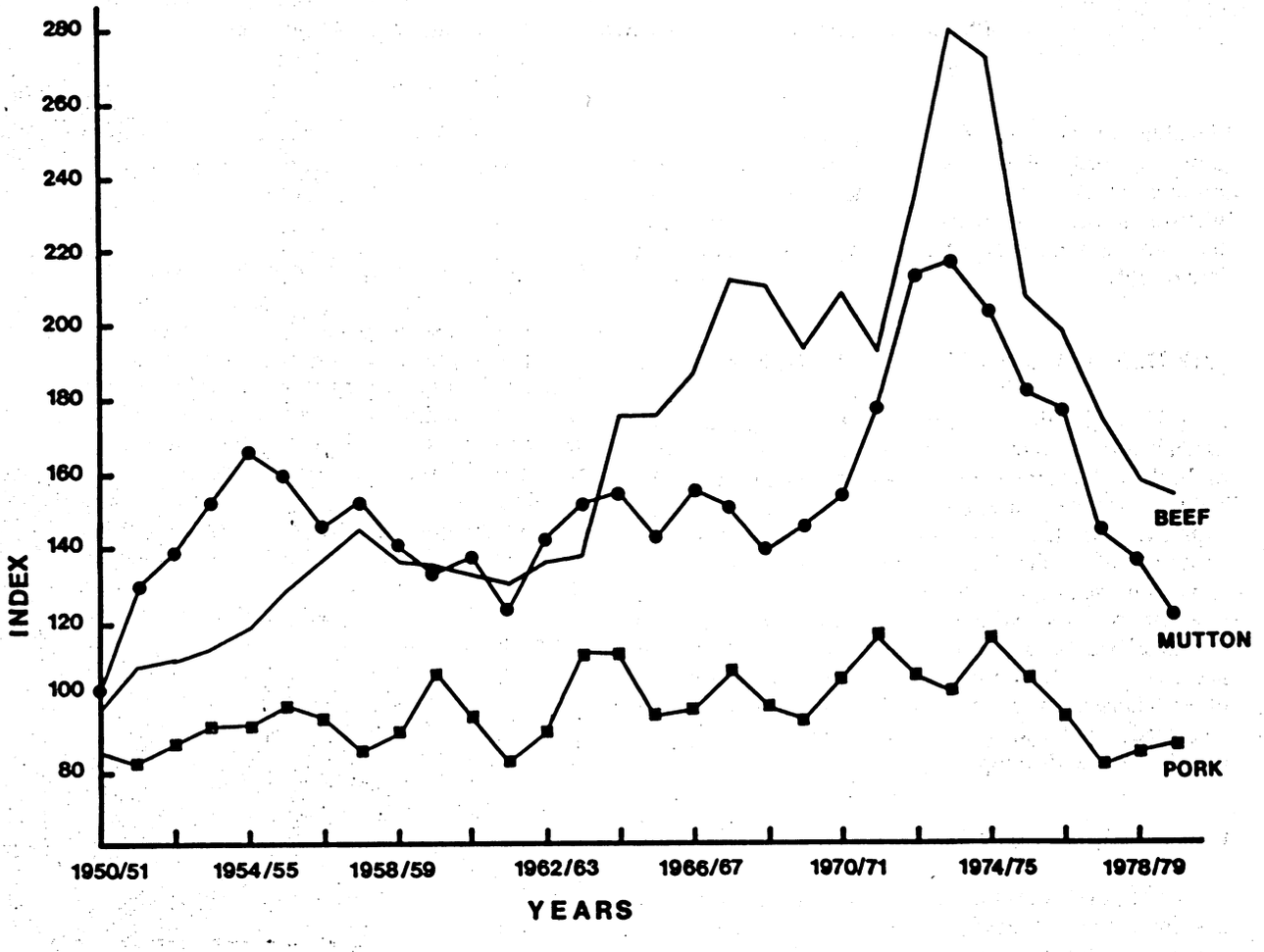

FIG. D - Trends in the relative profitability of producing beef, mutton and pork (1947/48 - 1949/50 = 100) – 1950/51 - 1979/80*
Source: (5)

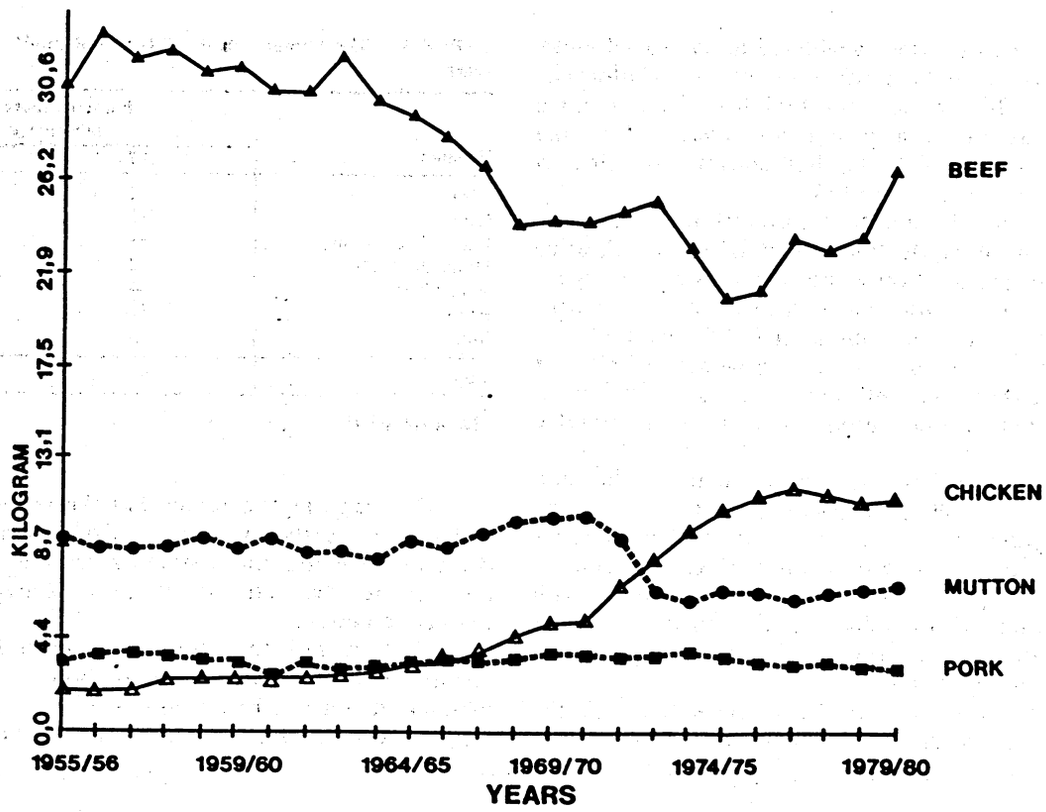

FIG. E - Per capita consumption of meat by type in kilograms: 1955/56 - 1979/80*

*Source (5)

possible cures to common problems such as unsatisfactorily low levels of efficiency in the production of beef. This may well lead to intensification through feedlots and/or an increase in the calving percentage from the current estimated low of 55%.

THE DEMAND FOR MEAT IN SOUTH AFRICA

The South African internal market for agricultural products is characterised by the features of both a developed and a developing market. The South African market not only shows the sophistication (in terms of preferences and tastes) expected of a developed market, but also has a significant segment in which world price levels are unattainable and where exploitation, economically irrational marketing units and inefficient distribution are common phenomena. This dualism as well as other characteristics on the demand side will be discussed briefly, so that an idea can be formed of possible future developments.

Consumer spending on food

The total amount spent by consumers on food has increased by 276% since 1970, amounting to almost R7 700 million in 1979/80. Of this amount, roughly 28% was spent on meat alone in 1979/80, making it the single most important part of the consumer's food rand. This figure also represents a slight increase on the 1970 figure for expenditure on meat, which was 25% of total expenditure on food (5).

Per capita consumption of meat by type

The most important aspect of recent changes in the per capita consumption of meat was the disproportionate changes in the relative importance of the consumption of different types of meat and meat products. In Figure E the movements over a period of 25 years up to 1979/80 in the per capita consumption of beef, mutton, pork and chicken are represented graphically. During the first 19 years of this period the per capita consumption of beef showed a decline. Owing to the fact that the total consumption of meat remained virtually unchanged during the same period, the following were significant changes in the per capita consumption of the other three types of meat (see Figure E):

- The per capita consumption of mutton showed almost no increase up to 1970/71, after which there was a significant decrease;
- the per capita consumption of pork did not show any significant change during the period under investigation;
- the per capita consumption of chicken increased by more than 465% over the same 25 years.

It can therefore be concluded that although beef still dominates the meat market, it has lost a significant share of the market.

Market share of different population groups and household expenditure on food

A comprehensive study conducted by a South African university (12) on household expenditure on food revealed some important aspects of the market shares of types of meat.

From this research it became evident that in terms of real expenditure by Whites, beef and veal were more important in 1975 than in 1970. Mutton, lamb and goat's meat declined, whereas pork and chicken increased in importance among Whites. Among Blacks beef and veal declined in importance in real terms, but still remained the most important kinds of meat in terms of percentage contribution to household expenditure.

During the same period (1970 to 1975) chicken became more important among Blacks, which in turn resulted in a decrease in the relative importance of mutton, lamb and goat's meat. (See Table 7.)

The same trends are evident among Coloureds and Asians, except that beef and veal increased in importance among Asians. The most significant feature is therefore the sharp increase in the importance of chicken among the Non-Whites.

Significant and important changes could be detected in the market share of different types of meat and meat products. (See Table 8.)

Given the foregoing, it remains to be asked what impact these trends in the consumption of all meat, according to type and the traditional staple food among the various population groups, will have on the future demand for beef.

The future demand for meat

The future demand for meat in general and beef in particular will depend mainly on the expected population growth, the income-elasticity of the demand for meat and the expected growth in spendable income per capita.

It is estimated that the future growth rate within the different population groups will vary significantly. (See Table 9.)

Given this projection of population growth rates it is estimated that the total South African population will increase to about 38 million by 1990 and 50 million by the year 2000, as against the current 28 million.

There are also significant differences in income

TABLE 7 - Percentage distribution of household expenditure on meat and meat products in metropolitan areas by type of meat and population group, 1970 and 1975*

Item	Whites			Blacks			Coloureds			Asians			Total		
	1970	1970 in 1975 prices	1975	1970	1970 in 1975 prices	1975	1970	1970 in 1975 prices	1975	1970	1970 in 1975 prices	1975	1970	1970 in 1975 prices	1975
	%														
Total meat and meat products	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0	100,0
Beef and veal	34,8	36,2	37,4	61,1	62,5	59,3	42,7	44,2	37,7	5,6	5,8	7,0	39,4	40,9	41,8
Mutton, lamb and goat's meat	27,1	27,8	24,6	18,9	19,0	8,2	29,7	30,4	27,2	67,0	69,5	58,1	27,4	28,0	22,3
Pork	5,0	4,6	5,6	0,3	0,3	0,5	0,6	0,6	2,1	-	-	0,3	3,5	3,2	3,4
Poultry	10,6	8,8	9,8	6,5	5,3	20,5	12,4	10,3	18,8	18,5	15,7	26,7	10,2	8,6	14,9
Fresh sausages	9,6	9,8	9,0	3,6	3,5	3,2	3,9	3,9	6,6	1,0	1,1	1,7	7,6	7,6	6,6
Other meat and meat products	12,9	12,8	13,6	9,6	9,4	8,3	10,7	10,6	7,6	7,9	7,9	6,2	11,9	11,7	11,0

*Data source: (12)

TABLE 8 - Market share of the population groups in household expenditure on meat and meat products in metropolitan areas by type of meat, 1970 and 1975*

Item		Whites	Blacks	Coloureds	Asians	Total
		%				
Total meat and meat products	1970	67,4	19,8	8,6	4,2	100,0
	1975	53,8	28,4	11,7	6,1	100,0
Beef and veal	1970	59,4	30,8	9,2	0,6	100,0
	1975	48,1	40,3	10,6	1,0	100,0
Mutton, lamb and goat's meat	1970	66,7	13,7	9,3	10,3	100,0
	1975	59,3	10,5	14,3	15,9	100,0
Pork	1970	96,6	1,9	1,5	-	100,0
	1975	87,8	4,4	7,3	0,5	100,0
Poultry	1970	69,5	12,5	10,3	7,7	100,0
	1975	35,4	39,5	14,7	10,9	100,0
Fresh sausages	1970	85,8	9,3	4,4	0,5	100,0
	1975	73,0	13,7	11,7	1,6	100,0
Other meat and meat products	1970	73,4	16,1	7,7	2,8	100,0
	1975	66,9	21,5	8,1	3,5	100,0

*Data source: (12)

TABLE 9 - Estimated future growth rate for the four main population groups*

Period	Whites	Asians	Coloureds	Blacks
1980 - 1985	1,39	2,22	2,97	3,04
1985 - 1990	1,31	2,01	2,85	4,06
1990 - 1995	1,21	1,82	2,74	2,97
1995 - 2000	1,20	1,73	2,61	2,90

*Data source: (12)

TABLE 10 - Income elasticities of the demand for meat and meat products by the respective population groups in metropolitan areas, 1975*

Item	Total	Whites	Blacks	Coloureds	Asians
Meat and meat products	0,73	0,48	1,19	0,76	0,69

*Data source (12)

elasticities among the different population groups. (See Table 10.)

These income elasticities suggest that Non-Whites in general and Blacks in particular will spend a greater proportion of any increase in their real per capita income than Whites on meat and meat products.

Also of significance is the fact that a redistribution of income is currently taking place within South Africa in as much as Non-Whites are gradually commanding an increasing share in personal income.

This redistribution of income, together with the higher population growth rate and higher income elasticities among Non-Whites, will therefore have a strong positive effect on growth in the food market in general, but particularly in the market for meat and meat products. These facts may well result in strong increases in the expenditure of households on food. It is estimated by the Bureau of Market Research of the University of South Africa (12) that the growth rate in expenditure on meat will exceed that of expenditure on any other type of food or food product. It is, however, necessary to sound a warning: the sharp increase in the importance of chicken among Non-Whites may signal structural inefficiencies within the red meat industry.

In conclusion, there are adequate reasons to believe that the meat industry in South Africa is facing a bright future on the demand side. The fact that Blacks have the biggest share in the market for beef and veal and represent the market segment with the highest growth potential, suggests a possible restructuring on the production/supply side. Greater emphasis should most probably be placed on producing the right type of beef in order to compete effectively in the market for chicken. The future demand for beef and veal among Blacks will most likely favour the lower grades the major substitute which is chicken. The relative prices of beef and chicken will most likely determine the degree of substitution that takes place between these two types of meat, but it should be realised that disproportionate price changes were most likely the cause of the extraordinary increase in chicken consumption at the expense of red meat.

SUMMARY

Among the various factors that affect agricultural production possibilities, climate, soil and biological characteristics primarily dictate land use patterns in South Africa. With approximately 87% of the land area available for farming, 70% is arid, stony and mountainous and as such suitable for extensive livestock farming only (8). Therefore, raising livestock is not only important to the South African economy, but also represents a logical utilisation of natural resources.

One can therefore conclude that the South African red meat industry in general, and the beef and cattle industry in particular, has some unique characteristics on both demand and supply sides. Not only is the supply subject to severe climatological variability, but the demand for beef is also known for its dualistic character. This in turn poses definite challenges to the producer and marketer of red meat in South Africa.

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