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The Livestock Economy in Egypt: An Appraisal of the Current Situation

By
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Currently, Egypt is struggling with the problem of how to provide adequate supplies of meat; and other livestock products to a rapidly growing population. The critical nature of this problem was brought into focus late in the summer of 1980, when retail meat prices began to rise unexpectedly and it appeared that there would be a shortage of meat for the feasts following Ramadan. To prevent this from happening, the government banned the slaughter of all meat animals (except poultry) during the month of September and meat prices were placed under control. These abrupt policy decisions moved the meat problem into full national view.

The pretext on which the government based its dramatic actions was simple and familiar one. They claimed that; the marketing of meat had been oligopolized by a few large and powerful merchants and butchers who were attempting to hold back supplies and thereby rake off excess profits. At the same time, however, the government tacitly admitted that there were some underlying production problems in the livestock sector. To deal with these, the government promised to increase supplies of basic feedstuffs and to step up efforts to introduce improved genetic stock into the country's livestock herd. It banned the slaughter of Young female cattle and buffaloes in order to encourage the feeding out of these animals, for the most part, however these moves were made on the spur of the moment in reaction to a crisis. They offered little hope of remedying Egypt's livestock problem in the longer run. There has been very little in depth research on Egypt's Livestock sector, upon which more serious long run policy measures and decisions could be based. Indeed, very little known about the livestock sector in Egypt.

It is difficult for policy makers to operate without some basic information to go on. The fact is, however. That the livestock data base is one of the weakest components of Egyptian agricultural statistics.

It is also important for policy makers to have an understanding of the existing policies which affect a sector and of what has been tried in the past, before they begin to take further actions aimed at improving or altering the performance. Egypt's livestock policies and programs have been studied only to a very limited extent, however, and there is little in the way of documentation on the performance of existing programs or the results of efforts which have been made in the past. A review of past regulatory

activity will reveal that such measures as bans on the slaughter of females and retail price controls on meats have been attempted repeatedly in the past with little apparent success. This report attempts to summarize the data and other information which are available about the livestock sector. It takes a critical look at the origins of the data, how it is collected, and its inherent strengths and weaknesses, It comments on how this data might be improved in order to facilitate planning and policy analysis in the future. The report also reviews the principal policies and program which affects the livestock sector in Egypt today, and it presents a brief discussion of the types of programs which have been tried in the past. The paper begins with a description of how and where livestock production occurs; in Egypt and a discussion of what are normally felt to constitute the main issues and problems with respect to increasing this production.

Background.

Livestock production in Egypt is unique in that it is confined almost exclusively to irrigated cropping areas. The rest of Egypt is largely uninhabited desert, without sufficient grass or other natural forage to support grazing by more than a few tens of thousands of camels, sheep and goats. Livestock production complements irrigated crop production in many ways, but it is also highly competitive with crop production in others. Since crop production is still not highly mechanized, livestock are required for work, and in many cases farmers choose to keep dual purpose animals which can produce milk and meat as well as work-native cattle, in particular but also the water buffalo, are prized for this dual purpose characteristic. But livestock of all kinds consume plant residues and by-products, thus turning these materials into either work or food products. This makes great economic sense in the case of cottonseed cake, for example which is the by-product of Egypt's principal export crop. But livestock are also important consumers of maize, barley wheat, pulses, and other food grains, and in this way they compete directly with crop production. Furthermore, in the winter months almost half of Egypt's agricultural land is devoted to the production of berseem clover for livestock feeding; much of this is land which otherwise might produce wheat, beans or food crops. In the summer months, there is a severe shortage of forage and roughage material for livestock feed. Roughage has been so scarce in recent years, in fact that the price of a wheat straw has often exceeded the price of the grain on many local markets.

Due to the competition with vital and limited irrigated cropping area, Egypt's options for expanding livestock production are limited. There does seem to be some potential for altering the feed components in the existing production structure in order to increase productivity. A recent study by Winrock International (1980) found that there would be considerable advantage to adding feed grade urea to the concentrate feed mix which is currently made in government mills; this would reduce the amount of cottonseed meal which is needed in this ration and thus make it possible to provide a much greater total quantity of the mix. The Winrock study also found that there would be advantage in

introducing new crops, such as forage sorghum and elephant grass, to help reduce the shortage of summer forages and also to reduce the amount of land which is devoted to berseem clover in the winter months. If a higher quality of feed were available throughout the year, the Winrock study found, small farmers would be able to support improved dairy cattle and thus boost the annual milk and meat of take by nearly three fold, due to problems with alkalinity, salinity and / or poor soil structure. Aside from the additional foodstuffs which can be obtained from new Land production and by introduction of new forage crops in the old lands, availability would likely require additional imports of feed grains. Egypt has already made substantial increases in the importation of feed grains during the past decade. For example the country's imports of yellow maize were increased from 36 million tons per year in 1965-69 to over 500 millions ton per year in 1975-79. Most of this yellow maize is fed to livestock with some what over half targeted for the feed mix used by large animals and somewhat less than half utilized by poultry. Certain important questions of comparative advantage arise in this regard. Beginning years of us due to problems with alkalinity salinity and / or poor soil structure. It is often maintained that they would be more suitable for use in producing livestock feed and forage crops such as barley and alfalfa.

Thus, new land areas may offer potential for expanded livestock production. Until now, most new lands project; areas a have been operated by large government owned companies. Managing livestock in large herds represents a fundamental departure from the small farm ownership pattern which predominates in the old lands. While the government has made numerous attempts to encourage livestock production in its new lands companies during the past 20 years, it is difficult, as will be seen below, to obtain statistics which show whether or production from this sector has been increasing or declining. Indications are that it is still a relatively small factor in overall livestock production.

To start at the beginning r the question of whether to import feedstuffs or livestock products should be considered. If Egypt has a comparative advantage in producing its own livestock products with imported feedstuffs, it seems safe to assume that this advantage derives mainly from the abundant and low cost labor force which is available to engage in animal husbandry, since the roughages and other feeds which must complement the imported feedstuffs (with the possible exception of cottonseed cake) are all Relatively scarce and expensive in Egypt. If there is advantage to importing feedstuffs rather than livestock products, then there should also be a serious question as to whether these would be more productively used in poultry production or in the production of large animals, and if in large animals, whether they would be more advantageous for milk production or for meat production. Finally, if the feeding of large animals is to be encouraged, then should these be animals which are raised on small, traditional farm rinks, or should they be animals which are managed in larger specialized dairy herds, feedlots, or new lands farms?

INSERT A

Farm mechanization is progressing in Egypt, and as it does this will undoubtedly change the basic structure of livestock production. At this point, however, the likely impacts on livestock production are not clear. Farm mechanization will reduce the need for livestock use in farm work and transportation. Does this mean that farmers will then reduce their livestock numbers and shift the land which is thus saved from forage and feed production into the production of food and fibre crop? Or will farmers instead choose to shift the mix of their livestock holdings from work animals to meat and milk producing animals, with little or no reduction in feed crop land requirements? The degree of shift it is likely that some of both will occur. The degree of shift in one direction or the other will depend upon a variety of factors such as the type of mechanization which occurs, which type and size of farm it affects, and which type of work animals it tends to replace. For example, it is logical to speculate that mechanization which replaces draft livestock used for ploughing and land leveling may cause small farmers to replace their native cattle, which are work and meat producers, with buffaloes which are less valued for work but which are heavy milk producers and which also produce meat. On the other hand, it is reasonable to assume that mechanization in the area of on-farm and in-village transportation would tend to reduce the need for load-bearing animals such as camels and donkeys and that this would result in a decrease in the demand for feed and fodders. Until the present, most of Egypt's livestock have been raised in the old land irrigated crop production areas. During the past two decades, however, Egypt has reclaimed almost a million acres of new lands for irrigation. These lands have not always proven to be very productive for food crops, particularly.

The answers to these questions depend upon a number of factors. They depend on such technical factors as the relative rates of gain and output of poultry to livestock. They also depend upon whether the scale economies and efficiencies of producing large animals in large production units outweigh the added labor and management costs which would be incurred, when compared to small scale production.

It appears that government policy has attempted to favor the larger scale production units. Government funds have been utilized to capitalize publicly owned dairy herds and feedlot operations, and progress such as livestock insurance and distribution of feed concentrates have been skewed in favor of larger producers. Nevertheless, it is not apparent that large scale production units have thrived under these policies. To the contrary it seems that with the exception of poultry broilers small scale, traditional focus continue to produce the major portion of Egypt's livestock products.

In the following section of this paper, we review available data for what is known about livestock production in Egypt. This includes trends in production what is being produced, and where it is being produced.

Livestock Sector Data.

The statistical data base for the livestock sector is generally weaker than the data base for crops. Until data from the 1981 Census of Agriculture are made available, there will be very little concrete information about Egypt's current livestock population. The ministry of Agriculture does publish livestock population statistics annually; However, these statistics are based on trend projections from two national livestock sample on trend projections from two national livestock sample surveys not censuses which were made in 1968 and 1970. Prior to that, livestock were included in the 1961 Census of Agriculture. The Central Agency for Public Mobilization and Statistics (CAPMAS) also report estimates of the livestock population in their Statistics of Animal wealth series; while they report that the source of the data for this series is the Ministry of Agriculture, the CAPMAS figures do vary somewhat from those reported by the MOA.

The constant growth rates used to estimate the livestock population for each year since 1970 are shown in Table 1. These figures indicate that the buffalo population, at a rate of 1.7 percent, is growing somewhat faster than cattle at 1.4 percent. The sheep population, at 3.4 percent, is estimated to be growing much faster than the larger animals. However, the use of constant growth rates for projecting livestock populations is a questionable procedure, particularly for projecting more than a few years, since it does not take the livestock growth cycle into account. It is known, that all livestock populations go through cycles and that rates of change in numbers are seldom, if ever, constant from one year to the next for this reason, longer run projections based on constant rates should be viewed with great doubt.

Table 1. Growth Rates Used to Project Livestock Populations In Egypt.

<u>Type of Animal</u>	<u>Annual Growth Rates</u>	
	<u>Cattle</u>	<u>Buffaloes</u>
Over 3 Years:		
Male	1.0	-1.2
Female	1.4	1.7
1 to 3 Years:		
Male	1.7	1.7
Female	1.4	1.7
Under 1 year:		
Male	1.6	1.5
Female	.9	2.2
Total:		
Male	1.5	.9
Female	1.3	1.8
<u>Total Population</u>	<u>1.4</u>	<u>1.7</u>
	<u>Sheep</u>	<u>Goats</u>
Old:		
Male	3.6	1.0
Female	3.4	1.4
Young:		
Male	3.6	.8
Female	3.0	1.4
<u>Total Population</u>	<u>3.4</u>	<u>1.3</u>

*Based on changes in estimates of livestock populations douwed from 1968 added 1970 services by MOA.

The Ministry of Agriculture's (MOA) estimates of the livestock population in 1971 and 1980, derived with the constant growth rates, are shown in Table 2. The CAPMAS population statistics for 1960, 1970 and 1978 are shown in Table 3. The implicit growth rates for the CAPMAS figures are also shown in Table 3. The growth rates implicit in the CAPIIAS statistics for 1970-78 are higher, in the case of cattle and buffaloe.,4 than the growth rates used by MOA in their projections for the securities. In other words, the populations for these animals are higher, according to CAPMAS, than according to the MOA. According to both sources, however, the buffalo population is growing faster than the cattle population. The N A statistics have cattle and buffaloes at 2.2 and 2.4million head, respectively, by 1980, whereas they were both over 2.5 million head in 1978, according to CAPMAS. It is not known why the CAPMAS figures are higher than the MOA figures, suice CAPMAS daire to base their reports on data from the MOA.

Table 2. Livestock populations in Egypt, 1971 and 1980, According to Ministry of Agriculture Statistics.

<u>Type of Animal</u>	Population (1000'0 of head)			
	<u>Cattle</u>		<u>Buffaloes</u>	
	<u>1971</u>	<u>1980</u>	<u>1971</u>	<u>1980</u>
Over 3 years:				
Male	102	112	41	36
Female	100	114	1273	1482
1 to 3 years:				
Male	213	246	60	70
Female	392	445	363	423
Under 1 Year				
Male	157	182	67	77
Female	277	301	239	291
Totals:				
Male	472	540	168	183
Female	1671	1880	1878	2196
Total Population	2143	2120	2043	2379
	<u>Sheep</u>		<u>Goats</u>	
	<u>1971</u>	<u>1980</u>	<u>1971</u>	<u>1980</u>
Old				
Male	231	318	153	167
Female	1317	1780	638	723
Young				
Male	185	255	127	136
Female	402	524	252	286
Total	2135	2877	1170	1312

Table 3. Livestock Population in Egypt, 1970 and 1978, According to CAPMAS Statistics.

Total Population for type of animal' (1000's of head)							
	Cattle	Buffaloes	Sheep	Goats	Camels	Pigs	Donkeys
1960	1,867	1,781	2,220	1,583	184	22	1010
1970	2,115	2,009	2,066	1,155	127	15	1362
1978	2,587	2,542	2,554	1,440	93	15	n. a.

Average Annual Rates of Growth (percent)							
1960-70	1.3	1.2	-0.7	-3.1	-3.6	-3.8	3.0
1970-78	2.5	3.0	2.7	2.8	-3.8	0	n. a.

Source: Central Agency for Public Mobilization and Statistics (CAPMAS), Statistics of Animal Wealth, Ref. no. 71-12412/79, January 1979 (in Arabic).

Although there are reasons to doubt the available statistics, there are reasons to believe that buffaloes may be replacing cattle. As noted above, the buffalo is less valued as a work animal and more valued for its milk. As tractor mechanization and motor pumps have spread in Egypt during the past 20 years, there is fewer requirements for the farmer to have animals which are used as extensively as before for draft purposes. This has undoubtedly made it possible for many farmers to replace their cows with buffalo cows.

The age and sex structure of livestock, as shown in Table 1, reflect something about the use patterns of the various types of animals. There is far less of a tendency to retain male buffaloes than there is to retain male, cattle. This partly due to the work factor, but it is also said to be due to the fact that buffaloes have a lower rate of weight gain per unit of feed than do cattle. Therefore, while male cattle are retained for fattening, buffaloes are not. On the other hand, the very high proportion of female buffaloes which are in the over three years age category and the very low proportion of female cattle which are in this category is another reflection of the specialization of the buffalo as a milk production animal. Data on the numbers of livestock held in the various types of production units and in different regions and locations is even more scarce than overall livestock population data. CAPMAS does publish periodic reports of the

animals held by various government production units. These would include publicly owned production companies and state farms as well as experiment stations and universities. Table 4 compares 1975 figures to those for 1967. The striking point in these data is that government owned animals appear to constitute only about one percent of the total population of large animals. Whereas private livestock owners have been changing their herd mix in favor of buffaloes and away from cattle, government units have done just the opposite. The government has greatly reduced its emphasis on Foreign and cross-bred animal breeds and has shifted back to local or native strains. Overall, government herds have declined while privately owned herds have been growing.

In the case of poultry, the government has played a greatly expanded role. As Table 5 shows, broiler flocks grew at an average annual rate of 18 percent between 1967 and 1975, while the number of laying hens in government units grew at a 26 percent rate. No comparable flock growth statistics are available for the private sector. The relative proportions of government versus private poultry production can be evaluated, however, the Mattech study, completed in 1980, showed that public sector companies play a particularly strong role in broiler production where they accounted for one quarter of all the poultry meat produced in Egypt this can be seen Table 5, which provides 1978 data. Public sector egg production accounted for only four percent of total output in 1978. Of the 75 percent of Broiler production which was in private lands, one third took place in confined or specialized production units and two thirds came from common village flocks. Egg production was found to be very heavily concentrated under private ownership with less than from private sector companies, of the 96 percent came from village flocks indicating the still heavy reliance on traditional production methods. In the area of bird production about two thirds of the chicks hatched still come from traditional type hatcheries. In terms of genetic stock an estimated 71 percent of the eggs hatched were baladi (local) varieties and only 29 percent were of modern or improved genetic stock. (Table 5).

Table 4. Number of Animals owned by Governmental Units and Public Sector Companies

		1976	1975	Average Annual Rate of Change
		No of head		percent
Cattle	Native	9,752	18,610	8.4
	Foreign	8,886	4,681	-7.7
Cross bred		16,930	10,566	-5.7
Total		35,567	33,807	-0.6
Buffalo		21,449	13,849	-5.3
Sheep	Native	10,706	15,085	4.4
	Foreign	11,233	7,982	-4.2
	Cross-bred	33,771	1,600	-31.7
Total		55,710	24,667	-9.7
	Goats	69		-55.8
	Camels	21	9	-10.1
Other work animals		1482	1,085	- 3.8
Poultry	Broilers	1,298,505	4,955,000	18.2
	laying hens	148,567	950,000	26.1
Total		1,447,072	5,905,000	19.2

Source: CAPMASS, statistics of Livestock, No. 20.324 of Dec. 1968, and No. 2210-M-78 of November 1977.

Table 5. Composition of Poultry Products and Hatcheries, by Sector.

<u>ESTIMATED PRODUCTION IN 1978</u>				
Sector	<u>Poultry Meat</u>		<u>Eggs</u>	
	<u>Quantity</u> (000 kg)	<u>% of Total</u>	<u>Quantity</u> (000)	<u>% of Total</u>
I. Public Sector Companies	24,750	24.8%	77,000	3.8%
II. Private				
- Confined Units	25,000	25.1%	16,000	0.8%
- Village Flocks	50,000	50.1%	1,916,000	95.4%
Total Production	99,750	100.%	2,009,000	100.%

HATCHERY CAPACITY, MODERN AND TRADITIONAL, 1976-77

Sector	<u>No. of Hatcheries</u>	<u>Chickens Hatched</u>	<u>% Hatch</u>
Modern	45	50,870,636	75%
Native	693	98,510,928	61%

CHICKS HATCHED BY BREED, 1976-77

Modern	43,588,272	29%
Baladi	105,793,292	71%

Source: MATHTECH, Final Report, Poultry Improvement Project, Egypt, September 1980, Volume 11, pp. 111-126, 129, 130, 146.

Table 6. Total Population of Cattle and buffalo together with estimates of Animals confined in Specialized Production Facilities.

Total Population of Cattle And Buffaloe, 1980.

Cattle	2,794,478
Buffaloe	<u>2,420,022</u>
Total	5,214, 500

Estimated Number of Cattle Puffaloe Held in Specialized Production Activities, 1978-80 Average .

	<u>No of Head</u>	<u>% of total pop</u>
1. Feedlots and other private Fattening activities	364,413	7.0
2. Government and Public Sector Organizations	46,415	0.9
3. New Lands Projects	<u>20,233</u>	<u>0.4</u>
	507,683	9.7
4. Dairy farus		
a. delivery to Egypt Milk Co.	6,236	0.1
b. not delivering	70,386	1.3

Source: Total population statistics from Ministry of Agriculture, Institute of Agricultural Economics and statistics Estimates for specialized production activities more derived by the authors by dividing. The concentrate feeds allocated to each type of activity by the official feed quotas provided by MOA for each type.

Returning to the issue of large animals, the government does not publish any statistics which identify location and type of production. Unit move closely. However, the Ministry of Agriculture does distribute low priced feed concentrate mix for cattle and buffaloes on a quota bases; furthermore, MOA reports the amount of feed concentrate which are delivered to animals of each class. Thus, it is possible to make a rough estimate of the animals in each class by dividing the amount of concentrate provided to each class by the quota amount; for that class of animal. This was done by the authors, and results are shown in Table 6. This procedure is probably not very accurate since there is no Assurance that the animals in any given class received their full quota amount, often, there is not enough of the concentrate to go crowed nevertheless, the results shown in Table 6 do appear to be consistent, in same ways, with other data. For example if the

total number of cattle and buffaloes which were estimated to belong to public sector companies is taken from Table 6 (item 2, 46,415 head), it is quite close to the number of public sector animals which was given in Table 4. (47,653 head). What table 6 indicates is that a relatively small number of Egypt's livestock population is held in specialized production units. Of the 5.2 million of cattle and buffaloes estimated to exist in the country, only 464.4 thousands (7%) are estimated to have been held in feedlots and other specialized fattening activities; 76.6 thousand (1.5%) were on dairy farms, 46,4 thousand (0.9%) were in public sector companies and other government units, and 20.2 thousand (0.4%) were held by new lands projects. Presumably then, some 90% of all cattle and buffaloes in Egypt would be held in non-specialized production units, i.e. in traditional farms. This indicates that the traditional farm is still the mainstay of large animal production in Egypt. Furthermore, traditional small farms would account for an over greater proportions of small animals, i.e. sheep and goats.

* Virtually all new lands projects have been owned by public sector companies. The figures derived in table 6 indicate that Table 4 may not include livestock owned by public sector companies in the new lands.

Trends in Meat Production and Consumption.

Data on meat production and consumption are probably more inaccurate than livestock population data because they are derived from the population data following highly simplified procedures. Both MOA and CAPMAS use fixed equations to estimate red meat consumption from their annual population estimates. That is, population is multiplied by a fixed off-take or slaughter ratio and a fixed carcass weight. The CAPMAS and official MOA (Institute of Agricultural Economics Research) estimates for selected years are shown in Table 7. In those years where comparisons are possible, it is seen that MOA estimates run from 15 to 25 percent higher than those of CAPMAS.

It was noted earlier that populations are estimated by use of constant trend coefficients. Therefore, this feature must carry over into the meat production estimates made by both agencies. It is known, however, that livestock herds do not grow at constant rates nor are they slaughtered at constant rates. Rather, herd growth and slaughter vary in interrelated cycles. The Ministry of Agriculture's Department of slaughter supervises the operation of the publicly owned and supervised slaughter facilities and maintains records of the numbers of animals slaughtered. The cyclical behavior of slaughter can be seen in Figure 1. Which portrays the data for a number of different animal types. There is no mistaking the cyclic behavior of slaughter in these diagrams.

The problem with the MOA slaughter statistics is that they do not represent total slaughter for the country. Not all of the animals which are slaughtered go through the publicly controlled facilities from which the MOA slaughter statistics are taken. In 1965, the MOA conducted a survey in order to estimate the number of animals which were

slaughtered outside the official facilities. They found that only about 40 percent of the animals slaughtered were killed in the public facilities whereas the remaining 60 percent were killed outside or off these premises. Therefore, in order to estimate total slaughter in the country, the Department of Slaughter uses constant 60:40 ratio to estimate off-slaughter from the in-house slaughter figures which it gathers from its own regulatory activities. Table 7 shows the Department of Slaughter's estimates of "in", "off" and total slaughter for various years since 1965. The total figure may be compared to the CAPMAS series.

Table 7. Domestic Meat Production, Various Series.

Year	CAPMAS Series		MOA, Institute of Ag. Econ. Research		MOA, Dept. of Slaughter Red Meat		
	Red Meat	Poultry	Red Meat	Poultry	in	off	Total
(000)Tons Carcass Weight							
1965	226	76	256	88	79	119	198
1970	272	85	283	97	101	141	242
1975	290	94	305	113	112	165	277
1978	n. a.	n.a.	322	115	124	187	311
1979	n. a.	n.a.	n.a.	n.a.	111	162	273

* All camels' carcasses are considered as imported animals.

For domestic red meat production of Agricultural Economic research series. In all cases, the Department of Slaughter's estimate is below the other two estimates. The difference varies, however, in reflection of cyclical nature of the slaughter statistics. None of the series is very satisfactory. The CAPMAS and Institute of Agricultural Economic research series are deficient in that they assume fixed herd growth rates and constant off-take or slaughter ratios, and the Department of Slaughter series is deficient in that it assumes that a constant proportion of animal are slaughtered outside the officially controlled facilities.

To arrive at estimates of total consumption, it is necessary to add imports to domestic production. Again, however, there are some differences in the data series on imports. CAPMAS publishes one import series in its monthly trade reports. Department of Veterinary Quarantine, which is responsible for inspecting all imported meats and live animals, bases a separate import series on these activities. Table 8 compares these two series. In general, the Department of Quarantines series is much higher than that of CAPMAS. A major part of the discrepancy lies in differences on reports of imported live animals an .area where

the Department of Quarantines is in direct control. Therefore, it is felt that the Quarantines import figures may be more reliable than CAPMAS.

It is necessary to consider one additional factor in order to arrive at an acceptable estimate of total consumption. This is to take account of the fact that many offals, such as intestines and brains which are derived from the slaughter process, constitute edible meat products in Egypt. These are derived from the slaughter of both domestic and imported edible offals have been estimated to constitute about 18 percent of domestic production, live animals. In Table 9, adjustments have been made for these edible offals' resulting in a total upward adjustment of the consumption figures for red meat of about 16 percent.

Table 8. Imports of Meats, According to two Alternative sources

Year	Data Source	Chilled and Frozen Meats				Live Animals				Preserved meats*	Grand total
		Poultry	Cattle/buffalo	Mutton	Total	Cattle	Sheep/Goats	Camels	Total		
... thousands of tons carcass weight or equivalent thousands of tons....											
1965	A	3.1	2.7	6.8	12.6	6.2	.6	11.3	18.1	5.0	35.7
	B	-	17.0	11.8	28.8	8.4	.6	10.0	19.0	3.4	51.2
1970	A	.6	4.3	.9	5.8	1.6	.4	0	2.0	4.1	11.9
	B	-	3.6	3.8	7.4	3.0	.9	18.4	22.3	1.4	31.1
1975	A	3.0	7.2	.1	10.3	0	1.2	0	1.2	15.3	26.8
	B	-	21.5	.7	22.2	.01	.7	16.4	17.1	6.3	45.8
1978	A	8.5	44.4	0	52.9	0	0	0	0	17.2	70.1
	B	-	76.6	0	76.6	.06	.1	18.4	18.6	12.3	107.5
1979	A	19.3	30.3	2.2	51.8	.08	0	0	.08	11.7	63.6
	B	-	5.9	25.2	33.1	.1	0	10.7	10.8	5.1	49.0

Source A. CAPMAS, Monthly Trade Book.

B. Ministry of Agriculture, Department of Veterinary Quarantines

N.B. As live animals are converted into carcass weight equivalents. Includes fish and shellfish in case of source A, but source B contains meats only. # Includes frozen liver.

Table 9. Domestic Production, Imports and Consumption of Red Meat for the period 1965-1979.

Year	Production (1)	Imports (2)	Consumption (3)	Eidable offals (4)			Consumption including eidable offals (5)
				Of domestic animals	Of Imported Live-animals	Total	
....Thousands of Tons Carcass weight or equivalent....							
1965	198	51	249	43	4	47	296
1966	234	49	283	50	5	55	338
1967	273	24	297	59	3	62	359
1968	286	20	306	62	3	65	371
1969	279	20	299	60	3	63	362
1970	292	31	273	52	4	56	329
1971	232	34	266	50	5	55	321
1972	239	30	269	52	4	56	325
1973	257	36	293	56	5	61	354
1974	268	66	334	50	4	54	388
1975	277	46	323	60	3	63	386
1976	248	95	343	54	3	57	400
1977	266	69	335	58	3	61	396
1978	311	107	318	67	3	70	388
1979	273	49	322	63	2	65	387

Source: (1) Based on Slaughter Department figures off slaughter multiplier for red meats.

(2) As in Table 8, source B.

(3) Equals (1) plus (2)

(4) Estimates of the authors

(5) Equals (3) plus total of (4)

Table 10 shows a revised composite series of production, imports and consumption for red meats poultry, and total meats. The domestic production series for red meats is taken from the Department of Slaughter series, whereas imports have been taken from the Department of Quarantines statistics. Adjustments for edible offals are included. The table shows that Egypt's total meat consumption rose from 385 million tons in 1965 to 612 million tons in 1978, an increase of 59 percent. Despite this substantial increase, the country has managed to stay largely self-sufficient in meat production. Imports, which accounted for about 15 percent of total consumption in the middle sixties, dropped to only five percent of consumption after the 1967 war and returned to the 10 percent of consumption range in the early seventies. In 1974, imports accounted for 14 percent of consumption, and by 1978, they accounted for more than 19 percent.

The rates of growth based on differences between three year averages, shown at the bottom of Table 10, are perhaps somewhat more indicative of the underlying tendency for Egypt to rely more heavily on imports. From 1966-68 to 1971-73, domestic red meat production actually declined somewhat whereas poultry production increased slightly and poultry imports were greatly expanded. The net result was a 0.4 percent average annual decline in total consumption of meats between the two periods. The picture changed dramatically between 1971-73 and 1976-78. Domestic red meat production was able to expand by an average 2.5 percent annually, while poultry production increased at 18.3 percent per annum, during this same period, red meat imports were expanded by 19.6 percent annually while poultry imports were only increased at the rate of 5.9 percent. Total domestic meat production was increased at a 2.6 percent annual rate, imports at a much higher 18.6 percent, and total consumption was increased at an average 4.6 percent annual. Thus, while domestic meat production has held its own with population growth in the 1970's total consumption has been increased at a higher rate with the help of greatly expanded imports, particularly imports of red meats.

Table 10. Domestic, Imports, and consumption of meats 1965-79.

Table 10 Domestic, Imports, and Consumption of Meats 1965-79.

Year	Red meat		Imports as % of total	Poultry meat		Imports as % of total	Total meat		Total consumption	Imports %
	Domestic production ... 1000 tons ...	Imports		Domestic production ... 1000 tons ...	Imports		Domestic production ... 1000 tons ...	Imports		
1965	241	55	18.6	86	3.1	3.5	327	58.1	385.1	15.0
1966	284	54	16.0	90	.5	0.6	374	54.5	428.5	12.7
1967	332	27	7.5	94	.1	0.1	426	27.1	453.1	6.0
1968	348	23	6.0	90	0.0	0	418	23.0	461.0	5.0
1969	340	23	6.3	94	0.0	0	414	21.0	457	5.0
1970	295	35	10.6	96	.6	0.6	191	15.6	426.6	8.1
1971	282	39	12.1	98	3.4	3.4	180	42.4	422.4	10.0
1972	291	34	10.5	103	5.0	4.6	394	39.0	411	9.0
1973	313	41	11.6	102	2.4	2.3	415	43.4	458.4	9.5
1974	326	70	17.7	110	1.2	1.1	436	71.2	507.2	14.0
1975	337	49	12.7	113	3.0	2.6	450	52.0	502.0	10.4
1976	302	98	24.5	115	.1	0.1	417	48.1	515.1	9.3
1977	323	71	10.1	121	5.9	4.6	444	76.9	520.9	14.8
1978	378	110	22.5	115	8.8	6.9	403	118.5	611.5	19.4
1979	336	51	11.2	n.a.	19.3	n.a.	n.a.	70.3	n.a.	n.a.
Three - Year averages:										
1966-68	321.3	34.7	9.7	91	.2	0.2	412.7	34.8	447.5	8.0
1971-73	295.3	38	11.4	101	3.6	3.4	396.3	41.6	437.9	9.5
1976-78	334.3	93	21.8	234	4.8	2.0	451.3	97.8	549.1	17.8
Average annual rates of growth between periods.										
1966-68 to 71-73	-1.7	1.8		2.1	78.3		-1.8	3.6	-0.4	
1971-73 to 76-78	2.5	19.6		10.1	5.9		2.6	18.6	4.6	

Table 11. Per Capita Meat Consumption and Related Demand Factors,

Year	Red meat	Per Capita Meat Consumption (kg).		Human population (Millions)	Real income per capita (1959-60) (pounds)	overo11:food prices (1965-67 piastres/kg)	
		Poultry Meat	Total meat			Beef	Chicken
1965	10.1	3.0	13.1	29.4	62.1	50.3	45.8
1966	11.2	3.0	14.2	30.1	58.1	54.7	47.2
1967	11.6	3.1	14.7	30.8	55.3	43.9	40.5
1968	11.8	2.9	14.6	31.5	54.5	46.8	42.6
1969	11.2	2.9	14.2	32.3	56.7	50.5	41.5
1970	10.0	2.9	12.9	33.0	57.6	59.3	43.6
1971	9.5	3.0	12.5	33.8	54.0	59.9	42.3
1972	9.4	3.1	12.5	34.6	55.3	62.1	43.3
1973	10.0	3.0	13.0	35.4	55.9	61.1	42.4
1974	10.9	3.1	14.0	36.2	53.6	56.7	42.2
1975	10.4	3.1	13.5	37.0	60.2	62.9	43.9
1976	10.7	3.1	13.8	37.9	63.7	68.4	46.8
1977	10.1	3.3	13.4	38.8	65.9	66.8	46.6
1978	9.7	5.6	15.3	39.9	n.a.	59.3	44.3
1979	9.5	n. a.	n.a.	40.8	n.a.	n.a.	n.a.

Three year averages							
1966-68	11.5	3.0	14.5		56.0	48.7	43.4
1971-73	9.6	3.0	12.6		55.1	61.0	42.7
1976-78	10.2	4.0	14.2		65.9	64.8	45.9
Percent changes between intervals							
1966-68 +0 1971-73 1971-73	-17%	0	-13%		-2%	+25%	-2%
+0 1976-78	+6%	+33%	+13%		+20%	+6%	+7%

Source: Calculations of authors. Income figures are from CAPMAS. Red meat prices and poultry prices from CAPMAS were divided by CAPMAS food price index.

In terms of overall meat consumption per capita, the picture has changed relatively little since the middle sixties. As Table 11 shows, total consumption per capita averaged 14.5 kg during 1966-68, it dropped to 12.6 kg during 1971-73, and it had recovered to 14.2 kg by 1976-78. The consumption mixture has been altered somewhat, however. In 1966-68, the average consumer ate 11.5 kg of red meat and 3 kg of chicken; by 1976-78, he was eating only 10.2 kg of red meat but 4 kg of chicken. There is a consistent pattern between per capita consumption and relevant income and price relationships. Real incomes declined slightly from 1966-68 to 1971-73, poultry (chicken) prices declined relative to other food prices, red meat (beef) prices increased sharply, relative to overall food prices. From 1971-73 to 1976-78, incomes were up sharply, and both poultry and red meat prices rose more than did other food prices.

Concluding Remarks on the Statistical Data Base.

The preceding discussion shows that by piecing together and adjusting existing information it is possible to paint a rough picture of what has transpired in Egypt's livestock and meat sector during the past one to two decades. From these data it is possible to gain some insights into corresponding imports, consumption and price patterns. Most of the data pertains to a very aggregate level. It is thus very weak in the area of showing how livestock is distributed among different types of production units. The quality of the data is subject to doubt in terms of its ability to accurately reveal the rates of growth in herd size or composition. Such information as is available appears to indicate that specialized or "modern" production units still account for less than 10 percent of all cattle and buffaloes and probably a much smaller proportion of cattle and goats. The only area so far where "modern" techniques have made substantial inroads is in broiler production, where public sector companies and privately owned confined production units each account for about one quarter of the total meat produced. However, village flocks are thought still produce more than 95 percent of Egypt's eggs.

Policies that Affect Livestock Production.

Government policies that affect livestock production may be divided into two classes, direct and indirect. Indirect policies are those which have an effect on livestock production even though they are designed primarily for other purposes. Foremost among the policies which indirectly affect livestock production in Egypt are the country's crop price policies. Direct policies include special insurance programs for livestock, retail controls on meats, subsidies on imported meats which are sold through the government's cooperative store system, local policies which restrict the transportation of live and slaughtered animals between governorates, subsidized credit for livestock production, provision of veterinary and artificial insemination services, importation of improved breeds, distribution of subsidized feed concentrate mixtures, subsidization of imported yellow maize for feeding, and provision of advice on livestock production through the extension system.

Government price policies toward food and fibre crops undoubtedly have profound effects on livestock production. Recent studies by Kedr and Clark (1980), by Habashy and Fitch (1981) and by the World Bank (1980) have shown that the prices which Egyptian farmers receive for the major traded crops, such as cotton, wheat, rice and maize, are typically only 40 to percent of their equivalent international values in trade. In effect, government policies on the procurement prices for crops and on importation result in a affective taxation of from 60 to 40 percent on the production of these crops. Cotton, the country's major export crop, is particularly heavily taxed, as is wheat production. Both of these crops compete for land area with the production of berseem clover, the major winter livestock forage feed crop, which is not taxed or price controlled. Therefore, it is less expensive for farmers to produce clover than it would be if the prices of competing crops were not taxed, In effect, taxing cotton, wheat and other crops results in a subsidy for livestock production. Of the many policies which are aimed directly at livestock production, the subsidies on the various livestock feedstuffs undoubtedly has the most profound effects. A variety of government agencies and public. companies participate ire a series of interlinked programs to make these subsidized inputs available to producers. The Ministry of Supply imports yellow maize and distributes it at subsidized prices to (1). Ministry of Industry companies who produce concentrate feed mixes for livestock as well as poultry, (2) to feedlots and dairy herds which may feed the maize directly, and (3) to village cooperatives. Who make the maize available to farmers for feeding their poultry and other livestock. The subsidy on maize imports rose from 4.4 million Egyptian Pounds on imports of 609 thousand tons in 1973 to &"1 estimated 100 million L. E. on imports of almost a million tons in 1980. In 1980 I it was estimated that 24 percent of the imported maize was distributed to farmers through cooperatives 52 percent went to cattle fattening activities, including manufacture of feed concentrates and the balance want to poultry feeding.

According to Soliman (1980) feed concentrate mixes for large animals and for poultry are manufactured in plants owned by the Ministry of Industry, based on formulas provided by the Ministry of Agriculture. In addition to the imported yellow maize received through the Ministry of supply, these mixes take advantage of available local crop by-products, including cottonseed cake, brans and molasses. Cottonseed is obtained from the gins operated by the Ministry of Economy, molasses from Ministry of Industry sugar milling companies. The feed mills pay prices for these local inputs which are typically far lower than their international tracing equivalents, and the feed concentrates are, in turn distributed at prices which are also well below equivalent international cost of the feed concentrate for livestock would have been at lea.t L. E. 97 per ton 1 more than three times higher than the official LE. 30 per ton price at which the mix was being distributed.

At the low prices which are charged for the concentrates, the supply is not sufficient to meet demand, and the government must allocate the concentrates according to a quota system. As a result a black market price was more than LE. 60 per

ton, which was more than twice the official price which was charged for this livestock fee. This shows that some producers and middlemen make money merely by reselling concentrates to producers who have requirements in excess of their quotas.

The government's quota system for distributing the concentrate feed to livestock follows a specific list of priorities which gives first place to state farms and to specialized producers who have contracts to deliver meat and milk to public sector companies or to the armed Forces. Next are priority are specialized meat and dairy herds who do not have delivery contracts. In this system, the small farmers' who hold the majority of the country's livestock have the lowest priority and the smallest quotas.

The Ministry of Agriculture operates a livestock insurance program which permits participants to insure their animals against premature deaths due to accident or disease. This program is used as a basic for qualification for purchasing the subsidized concentrate feeds. Until the latter part of 1980, the rule had been that, to qualify for insurance, a producer had to have at least 10 head of animals for fattening or 5 dairy animals. This meant that only specialized feedlots and dairy herds, together with a few larger farms, could qualify for larger quotas of the concentrates. The distribution quota for insured animals was 150 kg per month, compared to only 20 kg per month, only 20 kg per month, only during the six summer months, for uninsured animals. After the summer meat crises and subsequent slaughter ban in 1980, the rule was changed to permit farmers with any number of productive (meat or milk) animals to purchase the insurance. This new ruling may serve to alter the distribution pattern for the subsidised feed.

It is possible to obtain data from the Ministry of Agriculture on the distribution of feed concentrates, according to government and type to production unit. In his feed concentrate study, Soliman reported the figures for the 1976-77 agricultural year. He found that of 781 thousand tons of the concentrate which was distributed for large livestock (i.e. not poultry feeds), 310 thousand tons (36 percent) went to government production units in the new lands and elsewhere, and the remaining 301 thousand tons (35 percent) went to animals on traditional holdings.

Thus. Livestock in feedlots thought to constitute only about 7 percent of the total cattle and buffalo herds, received 36 percent of the subsidized feeds whereas livestock in traditional farms, thought to constitute just over 90 percent of the herd, received only 35 percent of the feed concentrate.

The feed subsidy program has become increasingly expensive for the government to operate. Calculations by Dr. Mousa of the Institute of Agricultural Economics Research indicate that the total cost of feed subsidies; increased from 11 Million Egyptian Pounds in 1970 to 110 Million in 1980.

Although direct price intervention has not been as common in the livestock sector has not been as common as in crops, it has nevertheless existed. After the summer

meat crises in 1980, the government imposed a retail price ceiling on most forms of meat. As time has passed enforcement of these price limits has become less stringent. This is what had happened on several occasions when attempts to control prices were made in the past.

The government also subsidises the sale of the frozen meats which are imported by the Ministry of Supply for sale through the cooperative store system. This frozen, boneless meat, most of which is of commercial grade, is sold at the fixed price of 68 piasters per kg in the cooperatives. At these prices, supply is never sufficient to meet demand; and rationing is accomplished through waiting lines. Those who can afford to do so purchase their meat in the regular retail market, which relies upon locally produced meats. The locally produced products superior to the subsidized imports and the price is typically three to four times as high. The distribution of the subsidized imports obviously reduces the demand for local meats, however, and thus certainly has the effect of reducing on the local prices market, particularly since there are only very small quantities of meat imported privately outside the government. In 1977, Egyptian law was changed to permit private importers to operate more freely than had previously been the case.

The only restriction, as is the case for many other food imports, is that margins are limited to certain fixed figures which are determined by the government to be adequate to cover transportation, storage and handling plus an additional fixed amount to provide a margin of profit to date, however, private meat importers have sale in the open retail market. It has yet to be determined why this is so. Several possible hypotheses exist. Perhaps the fixed margins established by the government are so restrictive that insufficient incentives exist. profitable importation. Another hypothesis is that import handling facilities are so overburdened that the private imported cannot afford the risk of using them to import highly perishable fresh or frozen meats. This is an area which calls for further investigation.