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A G R I C U L T U R E

I N

E G Y P T

A brief resume of the agricultural situation, production, and its relation to Egyptian national economy

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EGYPTIAN WEIGHTS & TERMS

1 P.T. (Piastre)	Equals		$.02880516
1 L.E. (Pound Egyptian)	"	100 P.T.	$2.88
1 Feddan (area)	"		1.038 acres
1 Cantar (weight)	"	99.04 lbs. or 44.9 Kg.	
1 Oke (weight)	"	2.75 lbs. equals 1,248 grams	
1 Ardeb (capacity)	"	5.619 bushels	
1 Metric Ton	"		2,204,622 lbs.

SOME BRIEF STATISTICS

Total area of Egypt	241,000,000 acres
Cultivated area	6,000,000 "
Average of principal crops harvested yearly	9,200,000 "
Cotton acreage 1950/51	1,975,000 "
Population, 1952	20,500,000
Average individual income - national	32 L.E. year
Average individual income farm labor	12 L.E. year
Value of foreign trade 1951 - imports	279,594,000 L.E.
Value of Foreign trade 1951 - exports	203,079,000 L.E.
Value of cotton exports 1951	172,105,000 L.E.
Wheat imports 1951	1,142,000 M. Tons
Wheat production 1951	1,210,000 M. Tons
Number of tractors in 1952	9,500

SUMMARY

Note - This summary is not intended to give exhaustive or precise details on any single phase of Egyptian agriculture. Rather, it is an effort to present a general picture of the status of agriculture in Egypt and to answer some of the questions often raised by the casual inquirer.

Inhabited Egypt is a narrow strip of land, bordering on the River Nile, or its Delta area, where water is available. The balance of the country is desert. Some 6,000,000 acres, about 2.5% of the total land area of Egypt, are under cultivation. Some 14,000,000 persons live on and off this land, which also furnishes food for another 6,000,000 persons living in the large cities. There are over 2.6 million landowners. About 30% of the total arable land is in large estates held by less than 1% of the total landowners. The balance is broken up into small holdings averaging less than 1 acre each.

The economy of Egypt is primarily based on agriculture. Two-thirds of the national wealth is so invested, and agriculture produces about 40% of the total yearly national income. The majority of industries depend on agriculture for their raw products.

Eighty percent of the cultivated area is under perennial irrigation, producing 2 or more crops per year. Mechanized agriculture is only practiced, and to a limited degree, on the large estates. The balance of the land is worked by hand, much as it was worked 1,000 years ago. Land is intensively cultivated, and yields per acre are high.

The standard of living, health and education in the farm villages is very low. Wages do not average over PT 15 ($.40) per day, and the average yearly farm worker's income is about LE 12 ($33.00).

Cotton is king. Egypt produces over 50% of the total world production of long staple (fine) cotton. Over 40% of the total irrigated area is planted in cotton each year. The revenue received from export sales of cotton comes to 85% of the total value of all Egyptian exports. The main Egyptian industries process cotton. The other chief crops are corn, wheat, rice, sugar cane, onions and clover for cattle feed.

The Egyptian population has doubled over the last half century and is increasing at the rate of 2% per year. On the other hand, the area of arable land has increased slowly (12% in 50 years). Each acre is now called on to feed over 3 persons. Grain and sugar production are no longer sufficient to cover local needs, and large quantities are imported yearly. With these exceptions, Egypt is still largely self-sufficient for its food supplies. However, the per capita supply of foodstuffs has been steadily going down as the population increases.

The most pressing problems confronting Egypt agriculturally are to increase the area of arable land, increase yields (already high) and to raise the standard of living and nutrition. To do so calls for large-scale new irrigation projects to provide new land and improved training in agricultural methods, education and sanitation. Finally, it will probably involve the gradual lowering of the percentage of the total area devoted to cotton and some form of land tenure reform.

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CHAPTER I

PHYSICAL CHARACTERISTICS

Area

Egypt lies between the 22nd to 32nd parallel Latitude North. The cultivated area (Nile valley) lies roughly along the 32nd parallel of Longitude.

The total area of Egypt, excluding the Sudan, is roughly 386,000 square miles (241 million acres). Some 6 million acres are now under cultivation. (For comparison, Texas, largest merican state, has a total area of 267,339 square miles with 30,167,000 acres under cultivation in 1950. The cultivated area of Egypt consists of a narrow strip bordering on the River Nile from the Sudan border to Cairo (some 750 miles) and the Delta area from Cairo to the Mediterranian Sea. At Cairo the Nile breaks up into two branches flowing into the sea some 140 miles apart. The Delta area is a rough triangle, each side about 125-150 miles, with its apex at Cairo. It is watered by the Nile and the various irrigation canals running off from the Nile. There are some 3-5 million acres of desert land bordering the Nile, or sufficiently close to irrigation water, which may eventually be irrigated and brought under cultivation. The rest of Egypt, with the exception of scattered oases, consists of arid, uninhabited desert.

Water Resources (The Nile)

The Nile enters Egypt at Wadi Halfa and flows some 320 klms. through steep sides to the first cataract at Aswan. There the river falls from 115 M. to 92 M above sea level. Cairo is at 17 M above sea level. Between Aswan and the sea the level falls by 90 M at an average slope of 1 meter per klm. (M. = meter)

Egypt is by nature a rainless desert, which the Nile, and the Nile only, converts into a garden each year. For agricultural purposes, the Nile Valley and the Delta are Egypt. The river has its sources in the high mountains of Equatorial Africa, flowing some 3300 miles through Africa and the Sudan before it reaches the Egyptian border. From there it flows some 750 miles through Egypt to the Mediterranian Sea. The river has its start from springs and is fed by the yearly torrential tropical rains in the high mountains. The rains come in the spring and early summer, and the river rapidly rises. By August the Nile is at high flood and if uncontrolled would overflow its banks in the more or less level parts of Egypt (mostly from Cairo to the sea) and flood the land. The flood brings with it rich silt, washed down from the mountains, which, when the floods subside, remains on the land and fertilizes it. It is the accumulation of many thousands of years of such flooding that go to make up the rich black earth of the Nile Valley and the Delta. At the dawn of recorded history in Egypt, some 6000 years ago, the inhabitants waited for the flood to subside and were then able to grow crops on the rich moist land. From that time on successive governments have attempted to control the Nile flood and obtain the maximum land for cultivation. The floods vary greatly in intensity; there are years of plenty and years of famine and also years when the flood is so great and prolonged that it destroys and does not create.

By the beginning of the Christian era a well devised control and irrigation system had been developed. The river was banked at danger points, with side, and parallel canals to carry water to the land. Thus, the land within reach of the river was converted into a series of basins which could be watered at will during flood times. The banks prevented overflowing, and the excess flood was carried down to the sea. At least one crop a year was normally assured and

the land fertilized by the rich Nile silt. In 1300 - 1400 A.D. some 3,000,000 acres were cultivated yearly and sustained a population of about 12 million. Wars and neglect of irrigation canals caused a gradual decline, and at the end of the eighteenth century the area under cultivation had dropped below 2 million acres. At that time Mohammed Aly Pasha, the father of modern Egypt, came into power, restored order, introduced new crops, particularly cotton, and revolutionized agricultural and irrigation practices. To grow cotton requires a long season, and moisture left in the basins after the flood was not enough. Perennial irrigation was introduced. First, the canals were deepened to carry water at low flood with pumping apparatus, often by hand, to spread the water to the fields. Gradually since then huge dams have been built across the Nile at strategic points to store flood water and release it when needed. The basin type of irrigation, which calls for only one flooding a year, is rapidly being changed to perennial, all-year-around irrigation. In 1947 government reports showed:

IRRIGATED LAND (IN FEDDANS)

Perennial Irrigation	Lower Egypt	Upper Egypt	Total
By flush flooding	1,214,523	1,029,339	2,243,862
By lift (pump)	2,065,325	199,870	2,265,195
Basin irrigation	—	1,107,313	1,107,313
TOTALS	3,279,848	2,336,522	5,616,370

Note: Oases and land irrigated by wells, etc. not included

The various desert oases have a total cultivated area of 150 - 200,000 feddans, where water is obtained from wells or flowing springs. Numerous studies have been made on the possibilities of reclaiming desert land by the use of deep wells, etc. to tap underground water tables. Little has actually been done to date, though the prospects are encouraging.

Climate - Rainfall

For agricultural and general purposes Egypt is divided into two zones, Upper and Lower Egypt. From Cairo south to the Sudan border is Upper Egypt; from Cairo north to the sea (including the Delta) is Lower Egypt.

South of Cairo in the Nile Valley there is little or no rain. At Cairo the precipitation is normally slightly more than 1 inch per annum and average rainfall at Alexandria is 7.5 inches. Average maximum temperatures range between 89° and 67° F. (for September and January, respectively). However, from May to August, temperatures as high as 109° in the north and 113° in the South are reached. Lowest temperature in the north, in February, is about 36° F., and in the south (Assiut) 33° F.

Crop Seasons

The shortage of cultivatable land, high land rentals and need for agricultural production requires that land be worked intensively. Two or three crops a year are obtainable from the same land. The Egyptian year is divided into three growing seasons - i.e. Winter crops, Summer crops and Nile crops. The Nile crops are those planted on basin land after the Nile flood goes down, usually in September - October. The table below shows the chief crops planted in the different seasons in 1947:

AREAS OF THE PRINCIPAL EGYPTIAN CROPS BY SEASONS

WINTER CROPS			SUMMER CROPS		
Crop	Average 1935-39	1947	Crop	Average 1935-39	1947
Wheat	1,410,251	1,629,670	Cotton	1,754,338	1,254,154
Beans	393,204	381,643	Sum. Rice	426,253	757,772
Barley	266,066	237,408	" Millet	255,547	480,095
Fenugreek	87,329	60,679	" Maize	10,088	30,149
Lentils	79,121	72,872	Sugar-Cane	66,583	89,856
Flax	7,010	10,171	Ground Nuts	22,433	24,756
Onions	32,669	28,989	Sesame	18,377	46,378
Lupins	16,145	12,891	Melons, green, etc.	17,169	32,471
Chick-peas	5,579	13,999	Sum. Veget.	7,063	58,602
Bersim	1,642,938	1,990,089	Others	9,134	16,225
Vetches	13,583	10,152			
Winter Veg.	(not surveyed)	76,888			
Others	11,698	12,331			
TOTAL	3,965,593	4,537,782	TOTAL	2,586,985	2,790,458

NILE CROPS (FLOOD)

Nile Maize	1,529,938	1,577,577
Nile millet	102,377	62,464
Nile Rice (flood)	19,384	18,003
Nile Veget.)	13,556	(85,398
Others)		(10,253
TOTAL	1,665,255	1,753,695

Total Winter Crops	3,965,593	4,537,782
" Summer Crops	2,586,985	2,790,458
" Nile Crops (flood)	1,665,255	1,753,695
" Area of Gardens	63,588	73,625
Total Area under Crops and Gardens	8,281,421	9,155,560
Feddans Total Land under Cultivation	5,822,000	

Population

In 1952 the total population is estimated at some 20,500,000 persons. The population is increasing at the rate of 2% a year, and the growing disparity between the slow rise in cultivated land and the rapid increase in population is one of the major problems confronting the government.

POPULATION TABLES

Census of	Total Pop.	% Annual Increase	Area Under Cultivation Feddans
1907	11,287,000	—	4,593,387
1917	12,751,000	1.2	5,232,271
1927	14,218,000	1.1	?
1937	15,933,000	1.2	5,822,000
1947	19,089,000	1.8	5,979,356
1952 Estimate	20,500,000	2	6,000,000

The 1947 census (latest) showed that out of a total population of 19,089,000 some 5,946,000 persons lived in the large cities, and 13,140,000, in rural areas. The rural inhabitants were engaged as below:

OCCUPATION OF RURAL POPULATION

	No.	%
Land tenants and families	3,889,000	29
Land laborers and families	4,552,000	35
Other rural inhabitants	4,702,000	36

Roughly two-thirds of the total population of Egypt is engaged in agriculture.

Land Ownership

Ownership of land has throughout the centuries been considered the only sure form of investment in Egypt. The ambition of every agricultural worker, and the majority of industrial workers also, is to own a plot of land. It is estimated that at present about 2 - 3 feddans is the minimum size holding that will support a family. Some 30% of the total agricultural land is made up of large estates of 100 feddans or over. The owners generally live in Cairo and constitute the most wealthy, influential and conservative group in Egyptian society. The table below shows ownership and size of land holdings:

LAND OWNERSHIP

By No. of Owners & Size of Holdings in 1947

Size of Holding in Feddans	No. of Owners	% Total Owners	Area Held	% Total Area
0-½	1,401,385	52.639	420,978	7.061
½-1	519,236	19.505	361,394	6.062
1-2	322,260	12.102	454,454	7.623
2-5	264,263	9.927	756,015	12.682
5-10	80,996	3.044	540,821	9.072
10-50	62,277	2.336	1,233,619	20.693
50-100	6,642	.250	448,725	7.527
100-600	4,645	.176	998,933	16.756
600-1500	411	.017	360,975	6.054
1500 plus	128	.004	385,733	6.470
TOTALS	2,662,243	100.000	5,961,647	100.000

Source: 1948 Annuaire Statistique

The number of small holdings (1-5 feddans) is increasing rapidly, while the size of the really large estates is decreasing. New land reclaimed by the government is sold on long-term payments in plots of 5-20 feddans. Graduates of agricultural schools are offered special opportunities to take up holdings of from 20-50 feddans. The government usually includes housing, some work animals, etc. and often cash advances in the purchase price.

Land Values - Taxes, Rentals

Good farm land (on which cotton may be grown) is very expensive and out of the reach of the ordinary agricultural worker. In the Delta such land sells for 400-800 L.E. per feddan. Profits from such land may run over L.E. 100 a year. The average value of all agricultural land may be estimated at between 50-100 L.E. per feddan.

Agriculture land taxes are not heavy. The land tax is set at 14% of the declared value, with the proviso that the tax shall not exceed L.E. 1.65 per feddan. (Note - for this reason estimates based on the total land tax collected are about useless in estimating the actual value of agricultural land.) The owner is entitled to receive free irrigation water from government canals. Profits derived from the land are not subject to excess profit taxes as is the case for industry.

Agricultural rents have increased almost 400% since 1939. The Ministry of Social Affairs estimated the average rental of one feddan at L.E. 24 in 1948 against L.E. 7 in 1939. They also state the average landowner figures on receiving the same profit from renting his land, as he would receive from cultivating it himself. All the tenant gets out of it are the wages normally due to him for his work, an assured job and such extra profit as he can make from the sale of poultry or dairy products.

Agricultural land is usually rented against cash payment on a one to three-year lease. In some less common cases the rent is paid in kind; that is, the tenant agrees to offer the landlord a certain amount of the crop, undertaking all charges himself. The landlord's portion varies between 1/3 - 1/2 of the total crop according to fertility, etc. of the land. In case the landowner furnishes the necessary work animals, seed, manure, etc., the tenant's share is usually between 1/4 - 1/5 of the total crop. Land taxes are assessed against, and usually paid by, the landower. Generally land is leased in small plots directly to the tenant who works the land. In some cases large areas are rented to an intermediary who re-rents it to workers at much higher rates. Generally the tenant who rents a small plot (1-3 feddans) does not live on the land, as it is necessary to cultivate every square yard. He lives in a neighboring village, going out daily to work.

Soil Characteristics

There are two distinct classes of soil: sandy and alluvial. The latter are by far the more important, as they compose the great bulk of the cultivated land.

The sandy soils derive from the desert plateau and are usually found at the fringe of the alluvial, between these last and the desert. Very poor in clay and nutrients and rich in coarse and fine sand, their constitution improves with time through cultivation, and they tend to approach that of the lighter class of alluvial soils.

The alluvial soils derive from the accumulation during thousands of years of the blackish-brown Nile mud on a substratum of sand and gravel, and are more or less mixed with sand. The thickness of the alluvial deposits (according to the Geological Survey Department) varies from 6.7 m. in the south of Upper Egypt to 11 m. in the north of the Delta, the average being 8.3 m. in Upper Egypt and 9.8 m. in Lower Egypt. This thickness has been formed during the last 10,000 years at an average deposition of 1 mm. a year.

Chemical Composition

All Egyptian soils are alkaline. The pH varies from 7.5 for sandy soils to 8.4 for light and 8.8 for heavy alluvial soils, to 9 and even as high as 10.5 for saline and deteriorated soils.

They are rich in lime and magnesium, fairly rich in potash, less in phosphoric acid and poor in nitrogen and organic matter. Calcium carbonate is always present, also soluble salts (chlorides and sulphates) in varying proportions but never high except in saline soils.

The dominant exchangeable cation is calcium followed by magnesium, about a third to a half of the exchangeable calcium. Comparatively, exchangeable potassium and sodium are low. Saturation capacity varies between 40 to 35 or more m.g. per 100 gr. of air-dried soil. (M.G. equals milligrams.)

On the whole, the chemical composition is remarkably uniform. Alterations of the component materials must have taken place since their deposition, but they seem to be comparatively slight, as the composition of the soil throughout the entire thickness conforms substantially to present day suspended matter of the river.

SAMPLES FROM VARIOUS LOCALITIES IN PER CENT
(Depth 0-30 cm.)

		Light Soil	Medium	Heavy	Very Heavy
Insoluble and Oxides of Fe,	SiO_2	57.13	57.13	57.20	55.97
	Al	25.72	29.10	28.44	28.77
	CaO	4.38	1.97	2.44	2.90
	MgO	0.34	0.41	1.03	0.37
	K_2O	0.80	0.66	0.63	1.00
	P_2O_5	0.27	0.14	0.22	0.29
	CO_2	2.81	-	0.42	1.76
Total	H	0.060	0.078	0.061	0.068
Organic	C	0.53	0.74	0.83	0.60
Soluble in 1% citric acid					
	SiO_2	0.218	0.355	0.292	0.338
	K_2O	0.016	0.029	0.117	0.021
	P_2O_5	0.029	0.033	0.023	0.041
Surface Soil (0-30 cm.)	Total salts	0.22	0.11	0.14	0.64
	NaCl	0.04	Traces	0.04	0.36
Subsoil (73-80 cm.)	Total Salts	0.37	0.19	0.16	0.27
	NaCl	0.04	0.08	traces	0.14

The average Nile soil contains about 0.2 per cent of Mn oxide.

Income

National, Agricultural, Individual Farm Worker, Landowners

The Ministry of Finance has issued preliminary estimates showing the total 1950 national income at 820 million L.E. (other estimates reach 1000 million L.E.) The Finance Ministry estimate shows:

Source	Income in million L.E.	% of total
Agriculture	320	38
Industry	110	14
Commerce-transport	140	17
Professional men	80	10
Rentals (buildings)	40	5
Government & Misc.	130	16
	820	

In 1945 a government survey showed the total capital invested in Egypt at 1,800 million L.E. distributed as follows:

Invested in	Million L.E.
Agriculture	1,200
Industry	100
Commerce	100
Other	400
	1,800

The Ministry of Agriculture estimated the agricultural income in 1947-49 as follows:

From	1947-48	In 000 L.E.	1948-49
Agricultural Products:			
Field crops*	249,652		202,655
Vegetables	11,288		12,179
Fruits	9,770		8,994
Sub-Total	270,710		223,828
Animal Products:			
Meat	27,734		25,785
Milk and Dairy	21,941		21,346
Wool	495		495
Sub-Total	50,170		47,626
Poultry - Eggs:	10,028		11,162
GRAND TOTAL	330,908		282,616

* The cotton crop represents 27% of total agricultural income in 1947-48 and 41% in 1948-49.

Egyptian industry is chiefly engaged in processing local agricultural products, cotton spinning and weaving, rice, flour and sugar mills, canning industry, etc.

Profit Returns from Agricultural Land

The farmer, particularly in Lower Egypt, may expect to get two or three crops per year from his land. Cotton has proved to be the most profitable crop over the years. However, its cultivation is now restricted by law to not over 45% of the planted area. In 1950/51 a farmer could expect about the following results from one acre of good land:

Crop and Return	Value L.E.
5 Cantars cotton @ L.E.20	100
1 Cutting Bersim (clover)	10
Gross return	110
Farming expenses (taxes excluded)	25
Net Profit	85

From same land with wheat as main crop:

Crop and Return	Value L.E.
6 ardebs wheat:	
3 sold Govt. @ L.E. 3	9.00
3 sold free market @ L.E. 4	12.00
Sale of straw	10.00
8 ardebs corn @ L.E. 3	24.00
Gross return	55.00
Farming expenses	20.00
Net year's return	35.00

In practice the average medium-sized land owner is apt to plant and harvest the main crop of wheat himself and then rent the land for the balance of the year to local workers. His yearly profit then may be:

1 Crop Wheat	LE 21.00
Straw	10.00
Total	31.
Farming cost	10.
Return	21.
Rent for rest year	20.
Net yearly return	41. L.E.

In good years rice and onions may yield returns almost equal to cotton, though the market is much more uncertain. Sugar cane grown in Upper Egypt, where land values are lower than the Delta, yields about the same return as wheat. Vegetables, usually grown in small plots near the larger cities, are speculative crops which may yield high returns and are usually planted by tenant farmers. Citrus fruits, bananas, grapes, etc. are crops requiring large investments and several years before a yield is secured and are usually grown by owners.

Agricultural Wages

In 1945 the government estimated the national yearly average income as follows:

Type of Work	Yearly Income per head in L.E.	% of yearly national income
Families engaged in farming their land	32	25
Families farming as tenants or laborers	12	25
Families in industry	20	8
Families in commerce	45	42
Average income	32	

In the same year the average daily wage of farm labor was estimated to be: men, 9.5 PT; women, 5.5 PT; boys (under 16), 4.5 PT. In 1951 it was estimated the wages for men workers rose to about PT 15 per day, with corresponding increases for women and children. The average paid farm worker does not find year-round work. It is estimated the number of annual working day for agricultural workers varies between 165-210 for men, 130-160 for boys and up to 140 for women.

In addition to money payments the farm worker often receives some payment in kind. He is allowed to graze his animals over cut fields or plant enough garden vegetables for his own use. Skilled labor, tractor operators, etc. may earn up to 40-60 PT per day.

In Upper Egypt it is traditional that women do not, as a rule, work in the fields. (They may be called in to fight cotton worms.) Under the law education is compulsory from the age of 7 to 12. However, in 1952 it is estimated that school facilities are available for only 20-25% of the prospective students. Children begin light field work at 7 to 8 years (picking cotton worms, etc.).

CHAPTER II

GOVERNMENT POLICIES - CO-OPERATIVES

Summary

The Egyptian Government is becoming concerned with the widening gap between population and indigenous food production, especially of bread grains. As a result, it may be expected that more attention will henceforth be given to the enforcement of existing laws regulating the plantings of cotton and alternative crops. At the same time, more incentives may also be given to producers of the needed cereals in the form of higher prices, a move in this direction having been made last fall when wheat growers were assured of a better price for their 1952 wheat delivered to the Government's compulsory collection program provided they deliver 20% more than their established quotas.

Mechanization of Egyptian agriculture, which has been retarded by cheap farm labor and the basin system of irrigation, is attracting more attention as th result of increased costs of hand labor, higher rents and other production expenses.

The general marketing, price and subsidies policies of the Egyptian Government, which have been built up in the post-war period based on high cotton prices, seem to be slated for some revisions, although it is too early to predict the scope and extent of the changes to be made.

Land reform and improved nutritional levels for the rural population have become frequent topics of discussion in agricultural circles, but little of a tangible nature has appeared in the way of any land reform program.

Egypt has shown much interest in international cooperation, and has been especially active in the regional activities of the Food and Agriculture Organization of United Nations.

The total area of bersim has increased from 1,693,000 feddans in 1939 to 2,122,000 in 1951.

Comparatively favorable prices for meat and dairy products underlie the livestock expansion program, another factor being the fellahin's growing preference for a gamoosa or a cow as a form of capital savings.

Mechanization

Although the basin system of irrigation and cheap hand labor may continue to retard the mechanization of Egyptian agriculture for a long time to come, the number of tractors and tractor-drawn plows is steadily increasing on the larger farms in preparing land prior to its ridging into "gasa bas," or irrigation basins. Since farming in Egypt partakes the nature of a gardening operation, low-cost hand labor is still preferred to machines for planting, cultivating and harvesting operations. Large operators say, however, that hand labor costs are rising; that supplies of such labor are not always adequate when

needed; and that these factors, together with other increased costs of production, are steadily bringing the question of mechanization more and more to the front.

Marketing, Subsidies and Price Policies

In order to keep food and other prices low for city consumers, prices received by producers of these same products have in general been kept low (except in the case of cotton). Bread prices, for example, have been kept low by selling imported wheat below cost and by paying similarly low prices to farmers for wheat delivered to the Government's compulsory delivery program. Another device used to stabilize marketing and prices of farm products is that of restricting the radius of movement of the product. For example, wheat produced above the grower's quota must not be sold outside the primary (local) market; and, during the hatching season, inter-province shipments of eggs are prohibited.

In the case of sugar, the Government fixes both the price the sugar monopoly pays to the farmer for cane as well as the price to be charged for sugar in the wholesale and retail market. As in the case of wheat, large imports of sugar have become necessary in recent years to fill the gap between indigenous production and requirements. The prices currently controlled by the Ministry of Finance at wholesale and retail levels pertain to items consumed by the low-income groups.

Cotton Price Policy

Early in 1951, following a slump in cotton prices, the Government announced a policy of fixed minimum price, at which it was prepared to buy cotton. At the end of the last season (August 31, 1951), Government stocks acquired as a result of this price program totaled 1,114,267 cantars (154,700 bales). The fixed minima prices were continued in the new marketing year starting last September 1, although support buying on the part of the Government was discontinued. Dwindling export demand and the over-bought cotton futures position predicated on the fixed minima prices finally brought about a crisis which the new 1/ government met by announcing the ultimate freeing of cotton prices after an interim of curbs on daily fluctuations while prices became adjusted to world market levels.

Land Reform

New land coming into production by reclamation and irrigation will serve as a means for testing out the general applicability of land reform. Land in Egypt is high-priced due to its fertility and multiple use in production. At present values, five feddans of farm land is worth upwards of $10,000. Rather than a land reform program at present, the Government is directing its efforts to establish rural and social centers, one for every village being the long-term program. Here, health and other programs will be featured. Rural schools are also being bui

1/ Actually, two new governments subsequent to the crisis.

Nutrition

Improved bread for rural people is on the current nutritional program. It is planned to add the essential vitamins and minerals to the flour at mills. Free meals and free milk to school children have already been instituted.

Farm Organizations

Egypt's lack of any vocal farm organization is perhaps a more immediate and pressing need than is the need of land reform. Farmers, at present, have no voice in the framing of farm legislation, nor in matters of agricultural policy. It has been proposed to establish Chambers of Agriculture, as legal entities under the Ministry of Agriculture, to serve the general purpose of a farm organization. As proposed, these would be set up by markaz and mudiriehs and head up in a Supreme Council, presided over by the Minister of Agriculture. Among other things, the Chambers would mediate in disputes between land owners and farmers or farm laborers. This idea dates back to about 1940; but, unfortunately, comes up again at a time when matters of greater priority may take precedence, and the plan may be again postponed.

International Cooperation

Egypt has always been an active member of the Food and Agriculture Organization of United Nations, and has been particularly interested in the regional activities of that organization in the Middle East. Egypt also is a signatory to the International Wheat Agreement, and is represented on the International Cotton Advisory Committee.

Some Problems

The best exploitation of the high yield potentials of Egypt's soils requires heavy applications of chemical and organic fertilizers. During the war, when such imports were cut off, there occurred a cumulative decline in soil fertility. For many years, plans for the construction of a nitrogen plant at Asswan Dam have been discussed. These are still in the paper stages; but, meanwhile, a factory has been built near Suez for the manufacture of calcium nitrate. Starting operations in May 1951, this plant, by the end of last year, is said to have reached a production of from 350-400 tons per day. A small plant for producing phosphoric acid was started a few years ago near Cairo.

Another problem relating to the maintenance of soil fertility has arisen with the growth of perennial irrigation and, especially, from the frequent irrigations given to cotton. To remove the accumulations of alkali and other injurious salts from such land, both simple drainage canals and tiling have been used.

The Nile River itself and its triple problem of irrigation, flood control and power development continues to be the No. 1 agricultural consideration in Egypt. Complete agreement on the best program for conservation and development of the water and land resources of the Nile Valley is not to be expected quickly, involving, as it does, the fact that the greater portion of the total area of the Nile drainage basin lies outside the territorial borders of Egypt.

Rural Welfare in 1951

efforts and planning on rural welfare and efforts to raise the standards of rural living:

"The main methods used in developing rural welfare may be summed up as follows:

1.- Social Centers Scheme
2.- Rural Reform Associations.
3.- Development of Rural Industries.
4.- Improvement of wages of agricultural workers.
5.- Regulation of the relation between land owners & tenants.
6.- Distribution of government reclaimed land to small and landless farmers.
7.- Improvement of rural housing and imposition of social and health services on Estate owners.
8.- Improvement of the social and cultural standard of villagers.
9.- Co-operation.
10.- Social Security Scheme

Social Centers are local institutions carrying out their co-ordinated services through locally-constituted committees. These centers are self-contained units, usually for a large village, or group of villages, comprising a hospital, clinic, school, lecture hall and recreation facilities. Trained social workers, veterinarians and agricultural specialists are on hand. There are now 121 centers serving 251 villages with a population of 1,113,860. Appropriation has been made in this year's budget (1950/51) for 15 new centers, i.e. that the number of social centers at the end of this year will be 136. Measures are now being taken for the creation of the newly approved centers.

The present number is 32 Associations serving about 300,000 villagers. These Rural Reform Associations render the same services as the social centers on a smaller scale and are granted financial subsidies by the government according to the activities of each.

As to rural industries which are being energetically encouraged by the Department for occupying the leisure time of the peasants and increasing their income, there is every reason to believe that satisfactory progress is being made in this direction. The Department has seized the opportunity of the Second Social Welfare Seminar for the Arab States held in Cairo in November, 1950, and organized a big exhibition for the products of the Social Centers and Rural Reform Associations. The exhibition was a very impressive display, and the amount of sales was amazing. The following were the main industries represented:

i.- Rug and carpet-making industry.
ii.- Various kinds of popular cloth.
iii.- Palm-tree products: foot mats, brooms, brushes, chairs, etc.
iv.- Needle work, tricotage, dress making, etc.
v.- Agricultural industries such as syrups, jams, fruits sucres and other preserved foods.

94 social centers and 7 Rural Social Associations participated in the exhibition, and the amount of sales was LE2700.

The Department has already submitted two draft laws, one fixing a minimum wage for agricultural workers and the other regulating the relation between land owners and tenants and ensuring a fair share for each. These two laws are still under consideration by the competent authorities.

We may add here that the Department is now preparing a third law governing the employment of seasonal "migrant" workers. The necessary statistics are being collected with a view to regulating the conditions under which this class of workers is employed.

It is satisfactory to mention that the Department had put forward a draft law imposing social and health services on certain landowners. Parliament has passed the Bill which has now become law No. 118 of 1950. This law stipulates that certain conditions should be observed whenever a new Ezba (estate house) is built or an old one is modified, and that no permit for building is to be granted unless these conditions are complied with, namely, pure drinking water, the construction of basins for the drinking of cattle, utilization of a special place for manure and fuel stalks, the provision of a first aid box, the construction of a meeting hall, a prayer place, etc.

In pursuance of this housing policy, the Department helps the people in villages to build their dwellings and other installations according to hygienic requirements. It is also endeavoring to generalize cheap latrines in village houses, and to put up small water plants. Measures are also taken to improve village planning and house plans. Booklets containing plans of model houses of different sizes are prepared by the Department for this purpose.

In pursuance of the policy followed by the government in distributing State reclaimed land among the graduates of higher and intermediate agricultural institutes and landless peasants, and in an effort to provide facilities for a decent living to beneficiaries, the Council of Ministers has entrusted the Fellah Department with the task of populating the reclaimed lands. A special Section has been created in the Department for this purpose.

Qualifying conditions were laid down by the Department, and in 1948 families of landless farmers were chosen from densely populated districts after socially examining their cases. 3111 feddans at Kafr Saad were distributed among 597 families at the rate of 5 feddans per family. Another area of 3000 feddans in the same district is being divided among 600 families. The total area so far distributed is 19,938 feddans among 1,583 families. Of these, about 1200 families are of the landless people while the rest are graduates of higher and intermediate agricultural institutes.

All measures are taken to promote this scheme and to enable the beneficiaries to improve their production, minimize their cost and increase their income. Obstacles are overcome and problems solved through the help and intervention of the Department. Endeavors are also being made to run this scheme on a sound cooperative basis and exempt from the defects of other villages.

The Agricultural Co-operative Movement

The Agricultural Co-operative Movement
in Egypt
By the End of 1943.

Kind of Society	No. of Societies	No. of Members	Capital in L.E.	Reserve Fund in L.E.	Services Rendered in L.E.
Co-operative societies for supply and Agr.	1,654	527,073	674,142	291,948	4,360,973
Co-operative societies for the supply and marketing of vegetables, fruits, potatoes and onions	6	1,701	4,627	14,109	5,115
	1,660	528,774	678,769	306,057	4,866,088
		No. of societies			
Wholesale societies for supply in the Capitals of the provinces	14	1,783	82,468	24,772	1,293,067

Financing of Co-operative Societies

The System of agricultural credit for small farmers has been turned into a semi-state system by the foundation of the Agricultural credit bank in 1930. It took the form of a joint stock company with a share capital of L.15,000,000 half-in nominative shares owned by the government and half in shares to bearer owned at present by big banks and some other bodies. The government lent the Bank L.4,500,000 at 1% per annum, a sum which according to the law may be raised to L.6,000,000. The government also guaranteed minimum annual profit of 5% to shareholders.

The purposes of the A.C. Bank at present are summarized as follows:

1.- It grants short term advances to agricultural co-operative societies and small and medium land cultivators for the expenses of cultivation for a period not exceeding fourteen months. These advances are guaranteed by the right given to the A.C.B. of first lien over the crops for the raising of which it grants the advances. The bank has also the right of administrative seizure for its loans.

2.- It sells fertilizers, seeds and agricultural requirements, either cash or on credit to agricultural co-operative societies, and all cultivators in general. Sales on credit are guaranteed as in No. (1) above.

3.- It grants short-term advances on crops to agricultural Co-operative Societies and small land cultivators.

4.- It grants medium-term loans for not more than three years for the purchase of cattle, against personal guarantee in the case of Co-operative

societies and mortgage in the case of individuals.

5.- It grants medium term loans for not more than 10 years for the purchase of agricultural implements and land ameliorations, against mortgage to co-operative societies and individuals.

6.- It grants long term loans to individuals and for not more than 20 years for land reclamation against mortgage.

In 1949 the A.C.B. was transformed into a co-operative and agricultural bank. The first stage of this transformation involved the increase of capital by LE 500,000, half of the increase was subscribed by the Co-operation societies and the second half by the government.

Social Security

Egypt is the first Arab country to have a social security plan, which became finally effective for agricultural workers in 1952. By law, pensions or allowances are to be given to widows and children, orphans, totally disabled and aged persons.

Although the law doesn't cover all those who stand in need of pensions, yet provisions are made which enable those who do not get pensions to get other social assistance which is considered as a part of the social security scheme. There is a special fund for this kind of assistance. Provisions are also made for the construction of schools and institutions for the training of the handicapped.

In Egypt it was found appropriate to introduce the social security scheme before the introduction of social insurance. The reason is that it is difficult to extend social insurance to rural as well as urban people, and if rural people are not included this means that the great majority of those who badly need assistance are not covered. As rural laborers cannot for obvious reasons pay insurance premiums, the State has assumed full responsibility.

The pensions provided are low, varying from PT 50 to LE 1.50 per month. Cases have to be reviewed by many boards, and grants take a long time to materialize. Actually the plan is just starting to operate.

CHAPTER III

CROPS

Field Crops

In 1951 the total area of arable land was estimated to be between 5,882,000 and 6,000,000 feddans. (The 5,882,000 figure will be used here for comparative purposes.) Much of the land will produce two, or even three, crops in a year, and the total area of plantings in 1951 was estimated at some 9,155,000 feddans.

Three crops occupied 89% of the total planted area. These were: cotton, 22%; grains (including rice), 46%; and clover, 21%. Cotton, wheat barley and rice are slow maturing crops and directly compete for the available land during the summer and winter seasons. One may not follow the other in the year's rotation of crops. Corn, which comprises 40% of the total grain crop, is not competitive. The great majority of corn is grown on land irrigated only by the Nile flood, where there is not sufficient moisture during the year to grow the other main crops.

Clover is not a serious competitor. About half is planted as a permanent crop (usually on the less desirable or tired land), and the balance is planted as a quick crop, following the others. Clover is used exclusively for animal feed, being the main source of fodder.

The government for several years has restricted cotton plantings in an effort to force increased output of grains. On some 4.5 million feddans of perennially irrigated land, where cotton, wheat, rice and barley may be grown, in 1951 cotton occupied 44% of the total area. Wheat, barley, grain sorghum and rice occupied 52%. Rice requires more irrigation water than the other crops, and its acreage depends on the quantity of water the government decides is available in May. With prospects of a water shortage the area of rice is reduced, and increased plantings of corn, etc. are made. (1951 was a year of water shortages.)

The table below shows the area and production of the principal field crops in 1940/49 and in 1951:

CROPS - FIELD
In 000 Units

Area & Production of Principal Crops

Crop	Area Fedden Av. 40-49	Area Fedden Av. 1951	Production Av. 40-49 local unit	Production Av. 1951 local unit	Production Av. 1951 M. tons	Local Unit and Metric Equivalent
Cotton (ginned)	1,218	1,979	6,392	8,076	362	Cantar = 44.9 Kg.
Wheat	1,595	1,496	7,747	8,060	1,210	Ardeb = 150 Kg.
Corn	1,708	1,664	10,271	10,151	1,421	Ardeb = 140 Kg.
Barley	282	118	1,891	821	100	Ardeb = 120 Kg.
Grain Sorghum	568	415	4,562	3,205	478	Ardeb = 140 Kg.
Rice (paddy)	642	488	977	656	620	Dariba = 945 Kg.
Beans	390	355	1,907	1,603	249	Ardeb = 155 Kg.

Crop	40-49	1951	40-49 local unit	1951 local unit	1951 M. tons	Local Unit and Metric Equivalent
Lentils	75	75	325	305	49	Ardeb = 160 Kg.
Peanuts	24	25	226	240	18	Ardeb = 75 Kg.
Fenugreek	68	53	260	216	33	Ardeb = 155 Kg.
Sugar Cane (in refined sugar)	80	86	220	—	185	In M. Tons
Potatoes	27	25	2,444	2,964	160	Ardeb = 55 Kg.
Onions	50	56	237	—	263	In M. Tons
Flax (seed)	21	7	53	22	2	Ardebs = 122 Kg.
Clover*	2,012	1,935	17,380	—	17,380	In M. Tons
	8,762	8,746				

* Clover - some 1,000,000 feddans are planted as a permanent crop. The balance is planted as a quick crop yielding one cutting (about 8 M. tons per feddan).

Some 400,000 - 450,000 feddans are planted in minor crops (chick peas, vetches, sesame, melons, other vegetables, fruits, etc.) and must be added to the table above, giving an estimated total area of crops planted in 1951 at some 9,155,000 feddans.

Vegetables

The table below shows the area devoted to vegetables between 1943 and 1947. Since then the pattern of plantings has remained the same with perhaps slight overall increases.

AREA OF VEGETABLES BY SEASON
In Feddans

	1942	1943	1944	1945	1946	1947
Total of winter Vegetables	47,127	63,445	93,773	92,485	76,306	76,888
Summer Vegetables:						
Potatoes	9,208	11,069	21,732	11,590	13,986	15,940
Sweet Potatoes	4,575	6,657	6,294	2,795	2,731	3,259
Melons	22,668	21,003	24,783	20,649	30,825	24,358
Musk Melons	12,516	12,324	12,182	12,243	10,690	7,613
French Beans (Fasolia)	2,970	1,740	2,383	2,496	2,349	2,340
Haricot beans	11,788	3,682	4,809	4,151	4,011	4,190
Vegetable Marrow	1,939	5,282	4,041	5,029	6,236	5,329
Other Veget.	23,619	32,200	30,516	28,483	32,142	27,544
TOTAL	89,283	93,957	106,740	87,436	102,970	91,073
Nile Vegetables:						
Potatoes	8,842	19,562	11,367	14,325	16,681	16,800
French beans	5,138	7,107	8,781	7,371	4,633	4,081
Veget. marrow	4,997	9,098	6,799	7,484	7,649	8,024
Peas	1,319	3,083	3,541	3,205	2,714	2,535
Cabbages & cauliflower	4,402	7,024	6,357	6,378	7,499	7,112
Tomatoes	19,337	36,508	33,475	28,824	31,098	34,566
Other Veget.	32,207	23,670	28,579	22,300	6,357	12,280
TOTAL	76,242	106,132	98,899	89,887	76,631	85,398
GRAND TOTAL	212,652	263,534	299,412	269,808	255,907	253,359

Note - winter vegetables are generally quick growing crops: peas, beans, lettuce, squash, endive, marrow, etc.

Fruits

In 1945 (latest available data) the Ministry of Agriculture estimated the area under fruit trees as follows:

Type	Area - Feddans
Oranges	20,608
Mandarins	8,145
Lemons	3,635
Sweet Lemons	522
Grapes	13,234
Guava	4,689
Mango	4,592
Bananas	3,849
Figs	2,639
Pomegranates	1,341
Olives	1,306
Apricots	1,264
Peaches	722
Other varieties	2,100
Date Palms	20,000
TOTAL	89,146

To this must be added some 3,310 feddans of date palms in the oases.

Fruit Production

The table below gives production of citrus fruit over specified years:

Fruit	No. in Box	1938/39	1950/51	1951/52
		in 000 of boxes		
Oranges	200	5,618	6,805	6,360
Mandarins	84	15,335	7,870	7,012
Sweet Lemons	200	109	150	150
Lemons/Limes	200	7,015	4,300	4,700

OTHER FRUITS
In 000 Metric Tons

Kind	1934/38 Av.	1950	1951
Grapes	76	74	75
Apples	1	1	1
Apricots	5	6	6
Peaches	1	*	*
Pears	*	*	*
Plums	1	*	*

Kind	1934/38 Av.	1950	1951
Guava	22	24	25
Mangoes	9	11	12
Bananas**	27	49	50

* - Less than 1000 tons

**-Estimated on average production of 7 tons per feddan. Banana acreage has risen to 7200 tons in 1951. However, new plantings in the last 3-4 years account for most of the growth and bananas do not yield until the 3rd year. The 1950 and 1951 estimates are no doubt high, but express the rapid increase now going on.

Forestry

Egypt has no natural forests; wood of all types is scarce and has generally to be imported for building purposes. In the census of 1939 the Ministry of Agriculture listed the total number of timber trees in Egypt as 2,029,795 compared with 2,624,000 in 1929. The government is making efforts to increase the number of timber trees and has established eight national cultivated forests, covering some 884 feddans. Three hundred fifty-six thousand trees already have been planted, over half of them being Eucalyptus or Casuarines. The principal timber trees in Egypt as shown in the 1939 census of agriculture are:

Type	No.
Acacia	476,457
Casuarina	442,290
Mulberry	299,000
Willow	244,350
Tamarisk	160,340
Camphor	162,000

Government regulations forbid the cutting down of trees without a permit and require that each tree cut down be replaced by one planted. The growing of shade trees along main roads is increasing. Farmers also grow trees for shade, wind breaks or boundary markers. In the Sinai Peninsula a belt of trees is found to be essential to stop the movement of sand dunes. Some 850,000 trees have been planted in this belt. In the Western Desert a belt of over 1,700,000 trees has been started.

CHAPTER IV

ANIMALS

There has been a steady increase in the number of farm animals in Egypt (sheep excepted), which has more than kept pace with the increasing population. The table below, dividing animals into meat and work animals, is actually a misnomer. Practically all heavy meat animals work in the fields as well. The cow and buffalo are the source of power for most of the plowing, threshing and water pumping. The Egyptian water buffalo (gamoosa) is the favorite animal of the peasant. It stands the heat well, is practically immune from tuberculosis, and its milk is richer in butter fat content than cow milk. However, it produces less milk in proportion to feed consumed than a cow. The camel is used in the fields as well as a beast of burden. The normal fodder for animals is clover, corn stalks and hay. Very little manufactured or prepared fodder is used. Goats, sheep and poultry normally are grazed over the cut fields or semi-waste land. The table below shows the animal population as of varying dates:

ANIMAL POPULATION
In 000 Head

Type	1939	1947	1951*
MEAT ANIMALS:			
Cattle	1,230	1,317	1,750
Buffaloes	966	1,239	1,658
Sheep	1,896	1,868	1,729
Goats	1,088	1,473	1,325
Camels	175	196	220
Pigs	23	50	N.A.
WORK ANIMALS:			
Horses	47	25	24
Mules	29	9	9
Donkeys	1,069	1,125	1,200
POULTRY:			
Chickens	15,767	16,312	N.A.
Ducks	1,476	1,838	N.A.
Geese	1,807	1,604	N.A.
Turkeys	367	456	N.A.
Pigeons	3,984	4,813	N.A.

Bee Hives - in the 1939 census reported at 419,550 hives, compared with 349,337 hives in 1929.

* indicates estimate
N.A. - not available

Meat Production - Consumption

Public government inspected abattoirs are maintained near the large cities. Meat offered for sale in the cities is supposed to carry the government inspector's stamp. The Ministry of Agriculture estimates outside slaughter of large animals as about one-half of that of the abattoirs. Only 10% of goat slaughter is by abattoirs, but they handle all of the pig slaughter. The tables below give slaughter in public abattoirs over specified years and the estimated meat production in 1949 and 1950.

EGYPT

Slaughter of Animals at Public Abattoirs - 1945-1950
(in 1,000 Head)

Specie	1945	1946	1947	1948	1949	1950
Goats	13.1	18.3	26.6	38.6	31.4	25.6
Sheep	389.4	502.1	555.1	519.1	542.9	553.6
Buffaloes, Calves	165.5	188.2	198.4	197.4	197.3	206.4
" , Cows	46.4	45.3	44.3	45.0	45.9	46.3
Oxen	186.1	120.5	149.5	175.5	183.8	177.5
Cows	19.5	27.4	25.7	23.1	22.7	22.7
Pork	34.8	50.2	48.9	44.2	53.3	55.1
Camels	22.1	27.2	29.7	36.1	43.6	44.4

EGYPT

Estimated Meat Production - 1949 and 1950

Kind	Average Slaughter Weight	1949 Number Slaughtered 1,000 Head	1949 Production Meat 1,000 MT	1950 Number Slaughtered 1,000 Head	1950 Production Meat 1,000 MT
	Kgs.				
Goats	23	314	7.2	256	5.9
Sheep	23	814	18.7	830	19.1
Buffalo calves	40	295	11.8	310	12.4
" cows	250	69	17.2	69	17.2
Oxen	250	275	68.7	266	66.5
Cows	200	34	6.8	34	6.8
Pigs	35	53	1.8	55	1.9
Camels	270	65	17.6	67	18.1
Total above			149.8		147.9
Estimated Poultry and Rabbits			25.0		26.0
Total			174.8		173.9

Practically all slaughter in Egypt is for immediate consumption. Cold storage facilities are very limited. In the pre-war period, 1934/38, the Ministry of Agriculture estimated the annual meat consumption at 115,000 M. Tons. Imports were negligible. In 1949 meat imports came to 146 M. tons, which, added to the estimated production of 174,300 tons, gives a total consumption of 174,946 tons. In 1950 imports were 708 tons making a total of 174,608 tons.

Dairy Products

Production of milk in Egypt has about doubled since 1939. The great majority of the milk goes into butter or cheese making; only about 10% is consumed as fluid milk. Pasturization of milk is practically unknown, and all milk for human consumption should be boiled. The tables below show milk production and utilization in 1950/51 as compared with 1939.

EGYPT

Milk Production 1939 (Census), 1950 and 1951 Estimates

Year & Kind	Total Animals	Females	Animals Milked	Yield Per Head	Milk Produced
		1,000 Head		Kg	1,000 MT
1939					
Cattle	1,230	901	532	465	247
Buffaloes	966	888	387	1,000	387
Sheep	1,896	1,489	74	68	5
Goats	1,088	809	87	23	2
Total					641
1950					
Cattle	1,718	1,304	847	470	399
Buffaloes	1,648	1,540	770	1,000	770
Sheep	1,729	1,425	30	68	2
Goats	1,350	1,000	120	25	3
Total					1,174
1951					
Cattle	1,742	1,320	858	470	403
Buffaloes	1,658	1,550	775	1,000	775
Sheep	1,729	1,425	30	68	2
Goats	1,325	1,000	120	25	3
Total					1,183

Consumption

The largest increase in consumption of milk products has occurred in the case of cheese, where current consumption is more than five times that of pre-war. The largest use of milk, however, occurs in the form of butter and "samnah," a melted, salted butter used in cooking. Only about 10% of the production is consumed as fluid milk.

EGYPT

Consumption of Milk by Kinds in 1950

	Total	Used for Making Cheese	Used for Making Butter	Consumed as Fluid Milk
		1,000 M. T.		
Cow Milk	399	239	120	40
Buffalo Milk	770	231	462	77
Sheep Milk	2	-	-	2
Goat Milk	3	-	-	3
	1,174	470	582	122

EGYPT

Utilization of Milk 1939 (Census), 1945 and 1950 and 1951 Estimates

Year	Total	Used for Making Cheese	Used for Making Butter	Consumed Fresh
		1,000 M. T.		
1939	641	86	477	78
1945	767	232	457	78
1950	1,174	470	582	122
1951	1,183	474	587	122

Egypt is practically self-sufficient in dairy products; imports account for less than half of one percent of the total annual consumption. The majority of the increased milk production between 1939 and 1950 has gone into the making of cheese. The majority of the butter production consists of "Samnah", a melted salted butter used in cooking. The table below shows imports, local production and total consumption of dairy products in 1939 and 1950:

Consumption of Dairy Products 1939 and 1950
In 000 M. Tons

Consumed as	1939*			1950		
	Local	Import	Total	Local	Import	Total
Milk	78	.1	78.1	122	2.	124.
Butter	477	.6	477.6	582	.3	582.3
Cheese	86	1.	87.	470	4.	474.
TOTALS	641	1.7	642.7	1,174	6.3	1,180.3

* Note - import figures are actually those of 1938, as the war started in 1939, and complete statistics for 1939 are not available.

Fish

Fish are caught in the Nile, in 5 or 6 inland lakes, and along the Mediterranean and Red Sea coasts. The volume of fish caught in the Nile is not important commercially. In 1950 some 27,000 tons were taken from the lakes, while 33,000 tons were taken from the Mediterranean and Red Seas. The government maintains fish hatcheries near the larger lakes, and quantities of fry are released annually. The water level in most of the lakes is gradually being reduced, as shore land is being reclaimed and water taken for irrigation purposes. The prospects of greatly increasing the lake yield are doubtful. Both seas are a prolific source of supply. The Red Sea in particular is considered among the world's best fishing grounds. The small size of the salt water catch is due to several factors. Probably most important is the lack of adequate inland handling and storage facilities.

There are few refrigerated trucks or rail cars available, and refrigerated storage facilities are confined to the very large cities. Most of the fish caught have to be consumed at the port of discharge. The equipment used by local fishermen has been primitive.

Refrigeration, transport facilities, etc. are rapidly being improved, and the Egyptian salt-water fishing fleet is being increased and modernized. In 1950 over 350 motor vessels from 45 to 75 feet in length were actively engaged in the Red or Mediterranean seas. The catch of sardines alone ran over 5,000 tons. Plans are under way for the construction of fish canning plants at Red Sea ports. The annual fish catch is expected to increase gradually, but substantially, over the next few years. The government is encouraging all types of fishing and hopes to increase production by 20% in the next 3 years.

Poultry

Production

The most recent statistics on poultry numbers in Egypt are those of the census of 1947, which, for all kinds of poultry except geese, showed fairly strong increases over the census of 1939. However, the Ministry of Agriculture is of the opinion that numbers of poultry, especially chickens, have declined since 1947 and especially in the past three years.

This opinion is based upon the high prices of eggs, which, in turn, have resulted in too few eggs going to the hatcheries. To counteract this trend, the Ministry of Agriculture, during the winter hatching season (October to March) and for the past two years, has prohibited the shipment of eggs from country points to the large population centers. Meanwhile, the production of eggs has continued downward in relation to the pre-war (1939 census) level.

EGYPT

Number of Laying Hen and Egg Production

	Census 1939	1947	1950	1951
Layers (1,000)	10,713	9,924	7,350 *	6,506 *
Eggs (1,000)	749,823	694,000	514,000	455,000
Average Per Hen	70	70	70	70

* Derived on basis of average rate of lay of 70 eggs in 1939

EGYPT

Trends in Number of Poultry by Kinds 1929 - 1947

Kind	Census 1929	1,000 head Census 1939	Census 1947
Chickens	11,871	15,767	16,312
Ducks	1,029	1,476	1,838
Geese	1,412	1,807	1,604
Pigeons	3,561	3,984	4,313
Turkeys	269	367	456

Consumption

The annual food balance sheets prepared by the Ministry of Agriculture for F. A. O. point to a steady decline in egg consumption for food. From an average annual consumption of 28,000 metric tons in pre-war (1934-38), the level fell to 18,000 tons in the 1949-50 fiscal year.

EGYPT

Egg Production and Consumption as Food

Pre-War and Post-War

	1934-38 Average	1947-48	1948-49	1949-50
		(1,000 Metric Tons)		
Produced	32	21	21	18
Imports	-	-	-	-

	1934-38 Average	1947-48	1948-49	1949-50
		(1,000 Metric Tons)		
Exports	4	-	-	-
Consumed	28	21	21	18

Foreign Trade

Imports of poultry are negligible. Small quantities of eggs in shell and as yolks are imported. These data are shown in the table below:

EGYPT

Pre-War and Post-War Imports of Eggs

	January-December 1938	January-December 1950	January-June 1950	January-June 1951
Eggs in Shell Kg.	1,247	437	274	256
Eggs, Shelled Kg.	1,568	3,449	-	-
Value L.E.	172	1,159	349	388

Exports of eggs in shell were of some consequence in pre-war, but by 1950 had dwindled to a small quantity exported in the form of ships stores.

CHAPTER V

SELF-SUFFICIENCY (FOREIGN TRADE)

Coffee, tea and some spices are not grown and have to be imported. The government for many years has prohibited the cultivation of tobacco. Import duties on the large quantities imported for the well-developed cigarette industry are an important item in government receipts.

Wheat and sugar constitute the main items which need to be imported in large quantities; at the present time some 48% of the annual wheat and 34% of the sugar requirements must be imported. Total export of Egyptian agricultural products brings in over twice as much as is spent on imported foods. Close to 90% of the value of exports comes from cotton, which alone constitutes about half of the total yearly value of all agricultural production. Egypt is the world's major supplier of high grade (long staple) cotton, and normally there is a good demand for the entire crop at relatively high prices. Theoretically, in a world free of exchange or trade restrictions, it would seem to be to Egypt's advantage financially to concentrate on cotton and to import needed quantities of grains, sugar, etc. Under actual world conditions it is not always possible to sell the cotton or to obtain grains.

The government is making efforts to become more self-sufficient in wheat production, which must be done at the expense of cotton. The problem is to arrive at a happy medium, which will assure close to self-sufficiency in grains, and yet not materially reduce the revenues from cotton sales. The table below compares, in broad lines, the value of exports and imports of agricultural products in 1951.

VALUE OF FOREIGN TRADE
IN AGRICULTURAL COMMODITIES IN 1951

In 000 L.E.

COMMODITY	IMPORTS	EXPORTS
Animals and meats	3,695	460
Vegetables, grains, fruits	55,486	18,162
Fats and oils	4,043	200
Canned, prepared foods	9,762	1,413
Skins and hides	527	222
Cotton		164,101
Other vegetable fibers	372	929
Tobacco	13,141	
	87,026	185,487

The following table shows the volume of local production, imports and exports of the principal food and agricultural products in 1951 and the estimated percentage of the total Egyptian self-sufficiency in each commodity.

Production, Imports, Exports and % of Self-Sufficiency
in the Principal Agricultural Products in 1951

Item	Local Prod. In 000 M. Tons	Imports In 000 M. Tons	Exports In 000 M. Tons	% Self-sufficiency
Cotton	362		254	100
Wheat or flour Equiv.	1,210	1,142	57	52
Corn	1,421	20	1	98
Other grains	578	1	5	100
Rice	620		307	100
Beans	249	18		93
Fenegreek	33	2		90
Sugar - Ref.*	135	4	1	66
Molasses	80		39	100
Potatoes	160	31	6	87
Onions	263	4	23	100
Fruit - nuts	500	58		90
Oils - fats**	225 E.	42	2	84
Other vegetables	1,100 E.	10		100
Coffee		5		-
Tea		16		
Tobacco***		47		
Meat	174	.3	.3	100
Fish	60	8	.4	88
Milk	122	2		98
Butter	582	.3		100
Cheese	470	4		98
Eggs (per 000 ea.)	455,000			
CANNED GOODS:	****			100
Prepared meats	1	2		50
Prepared fish	1	8		11
Prepared fruits & vegetables	4	6		40
Fertilizers (artificial)	100	611		15

E = estimated

* Heavy imports in 1950 resulted in small imports in 1951. Actual local demand calls for some 280,000 tons per year.

** Oils and fats include cotton seed, linseed, copra, soya bean, olive, peanut oil, etc. plus industrial, vegetable and animal oils. Cotton seed oil production alone is about 100,000 tons.

*** Tobacco growing is prohibited by law.

**** Imported canned goods are generally for the luxury trade.

Nutrition

The following report on nutrition is taken from the annual Egyptian Agriculture Committee report to F. .O.

Food Consumption

The following table gives the estimated food supplies per caput in 1947/1948 and 1948/1949. Figures for 1950 are not available yet, but no significant change is anticipated.

TABLE I

Foodstuffs	1947/1948 Kg./Year per caput	Gm./ day per caput	1948/1949 Kg./Year Per caput	Gm./day per caput
Cereals	177.8	487.1	185.6	508.5
Roots, tubers and other starchy foods	8.2	22.5	9.8	26.8
Sugars and syrups	13.1	35.8	15.8	43.3
Pulses, seeds & nuts	17.3	47.4	12.0	32.9
Vegetables	32.1	88.0	48.4	132.6
Fruits	34.4	94.2	24.9	68.2
Meat	8.5	23.2	7.35	20.0
Eggs	1.2	3.3	0.8	2.2
Fish	3.0	8.2	3.0	8.2
Milk & cheese	32.6	89.3	53.2	145.7
Oils & fats	5.7	15.6	3.5	9.6

The value of all food supplies in the years in question, in terms of calories, total protein and animal protein per caput, works out as follows:

TABLE II

Year	Calories	Total protein	Animal protein
1947/1948	2,364	68.4	9.4
1948/1949	2,466	71.1	11.4

The calorie supply figures in Table II agree fairly closely with the calorie intake of some rural districts determined by the Nutrition units. Agreement is also noted on the proportion of total calories obtained from cereals which is approximately 70%. Compared with the calculated calories requirements for Egyptians (2290 Calorie per head per day), the majority of whom are engaged in Agriculture, the calorie supply seems adequate.

One cannot fail to see from Table I that foods of animal origin are still poorly represented in the national diet and there seems to be no prospect of an improvement in the near future if the country depends on its own resources in making up this deficit. Encouraging animal breeding has so far been unsuccessful and will most probably not succeed for more than one reason. Pasture land does not exist, cultivable land is very dear and at present nearly four people are supported by one acre. The adoption of a sound importation policy for meat, milk, cheese, etc. seems to be the only practical solution for this shortage.

The supply of local fish is slowly increasing but it will be some years before the increase is felt by the average man. Importation of cheap fish for consumption by the poor should be encouraged, at least until the local supply meets local needs.

CHAPTER VI

AGRICULTURAL EQUIPMENT AND SUPPLIES

Degree of Mechanization

Farming in Egypt bears more resemblance to a garden type cultivation than to farming as practiced in the U.S. The innumerable small holdings, which are broken up into even smaller units by irrigation ditches, do not lend themselves readily to machine cultivation. There is generally an abundance of man power at low wages. Fields are intensively cultivated by hand. Yields are generally high. The average yield of wheat is some 29 bushels per acre compared to a U.S. average yield of 16-17 bushels. Corn (hybrid types are not used) yields 33 bushels against 37 (largely hybrid) in the U.S. Rice yields over 3,000 lbs. against 2,360 lbs. in the U.S. Cotton yields 416 lbs. against 269 lbs.

On the large estates, which comprise about 1/3 of the arable land, machine cultivation is increasing. Tractors, harvesters and threshing machines are in use. The small holdings are generally farmed about as they were a thousand years ago. Plowing is done with a sharpened or iron pointed stick drawn by cattle or buffaloes. The "fass", a type of broad-bladed, short-handled pick axe, is used for digging, cultivating, etc. Threshing is done by having cattle drag a heavy sled, with rotating blades, over the piled up cuttings of grain. Irrigation is brought to the fields by animal-turned water wheels, hand-turned Archimedes screws and bucket lifts.

Farm Machinery

The latest available figures on the number of agricultural machines in use are those contained in the 1939 Census of Agriculture (1949 Census data is not yet tabulated). Since then the government has made efforts to popularize and increase the number of agricultural machines. Import permits and foreign exchange have been made available in comparatively generous quantities. Dealers' profits have been controlled by law. The cooperative societies have been encouraged to buy equipment and to make it available for general use. The large landowners have been encouraged to make their tractors, etc. available at reasonable rentals to the smaller farmers. It is estimated that by the end of 1951 some 9,500 tractors were in use in Egypt, mostly in agriculture. The table below shows the equipment in use in 1939 as reported by the Census, with some comparisons with 1929.

Agricultural Machinery In Use In 1939 and 1929

Type	1939	1929
Irrigation Machinery:		
Steam engines	4,377	
Water wheels, power driven	20,869	
Water wheels, native	136,669	
Pumps, mechanical	11,469	
Native hand pumps	319,700	
Ploughs, Harrows, Harvesting Machines:		
Ploughs, steam - gang	1,795	1,008
Ploughs, European type (gang)	5,440	3,767
Ploughs, native	603,003	564,114
Levelling machines	115,037	

Type	1939	1929
Harrowing machines	139,291	
Threshing machines	2,123	569
Harvesters	2,494	2,373
Native threshers	301,705	302,023

The Egyptian customs lumps almost all agricultural machinery under one general classification. The table below shows the general value of imports of agricultural equipment in 1950 and 1951.

Value of Imports of Agricultural Machinery

Type	1950	In L.E.	1951
Tractors	917,030		1,365,182
Ploughs	91,791		106,596
Cream separators	10,251		13,909
Other equipment	114,093		237,194
Totals	1,133,165		1,722,881

Fertilizers

The changeover from basin (one crop) to perennial irrigation has resulted in a greatly increased need for fertilizers. The rich Nile silt is no longer available, or sufficient. The main nutrient in which Egyptian soils are deficient is nitrogen. Stable manure, supplies of which are inadequate, is usually supplied to corn and other summer crops (seldom to winter crops) at rates corresponding on an average to 8-10 Kg. nitrogen, and about 5 Kg. P_2O_5 per feddan. The amount of nitrogen brought to the soil by stable manure, or leguminous crops like Bersim, is insufficient to keep production at its present level and is supplemented by the use of chemical fertilizers, mostly nitrogen.

For many years farmers all over Egypt have been using nitrogen fertilizers on most crops. In Upper and Middle Egypt these fertilizers were generally also used on cotton. The fertilizer produced lush vegetation and flowering, and it was feared this would encourage the attacks of the cotton leaf worm. New insecticides are now being used to control the worms, and the use of chemical fertilizers to cotton in all areas is becoming general. In the year 1950/51 some 750,000 tons of fertilizer were used on about 8,500,000 feddans of cultivated crops. This comes to .09% per ton of fertilizer per feddan, or roughly 200 kilograms per acre.

The principal crops fertilized and rates of application are as follows:

Crop	Fertilizer	Application per Feddan	Kilo
Cotton	Nitrogen-type @ rate of 15.5% Nitrogen	Lower Egypt	50 K
		Upper Egypt	100 K
Wheat	"	Lower Egypt	80 K
		Upper Egypt	150 K
Corn	"	Lower Egypt	100
		Upper Egypt	150
Sugar cane	"		250 K
Orchards	"		400 K