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SUMMARY

Most North African countries have moved from colonial status to national independence within the past decade. Although attaining independence individually, these countries have acted almost in unison in initiating national programs to better the economic lot of their rapidly increasing populations. These efforts have centered mainly around agriculture. Agriculture occupies such a dominant role in their economic activities that it is impracticable to disassociate it from any consideration of future development--political, social, or economic.

This publication, instead of predicting the outcome of newly initiated development policies and programs in Northern Africa, analyzes the critical relationship between the region's population and its other natural resources. Consideration is given to the organization of these resources and their effect on farm output.

Although significant industrial gains are underway in some North African countries, these countries all retain predominantly agricultural economies. Two-thirds of the people are classified as rural dwellers and depend upon agriculture for a livelihood; the majority of the urban dwellers are engaged in processing or trading agricultural products.

With the exception of the Nile valley and delta in the United Arab Republic (UAR), Northern Africa is not densely populated. Its man-land ratio is considerably more favorable than that for the Far East, Europe, and most of the Western Hemisphere. The region has close to 3 percent of the world's population and about 3 percent of its arable land. The area's population of 93 million for mid-1964 may well climb to 122 million by 1975 if its current rate of growth is maintained. The gravity of such a population increase is pointed up by the failure of agricultural production per capita to maintain previously achieved rates of improvement.

Including fallow, less than 1 percent of Northern Africa's total land area is under cultivation. A sizable portion of the land is classified as permanent meadow and pasture. But the major share, 60 percent or more, is of no value for agricultural purposes. The greatest potential for expanding the region's cultivated area exists in the Sudan, Ethiopia, and Morocco.

Subsistence agriculture predominates and great opportunities exist for improved and more intensive farming methods. Capital investment at the individual farm level is extremely small. The ordinary methods of tilling, sowing, tending the crops, and harvesting them have not progressed far beyond the procedures followed in ancient times. Fertilizer consumption is concentrated in the UAR, which uses more fertilizer on slightly over 6 million acres of cultivated land than all the remaining countries use on 106 million acres.

Cereal crops are most important. Fruit, mainly citrus, is important in Morocco, Algeria, and Tunisia. Cotton in the UAR and the Sudan and coffee in Ethiopia are the region's leading industrial crops. Yields are extremely low. While Egyptian crop yields are high compared with those for other North African countries, they are far below those for other world areas where intensive irrigation is also practiced.

Northern Africa's livestock industry is considered far below its potential. In most countries, livestock population is large in relation to the number of inhabitants. Sheep are generally most numerous, although cattle are first in economic importance. Serious droughts often cause enormous animal losses. Within recent years, several attempts have been made to establish a market in Europe for meat products from Northern Africa.

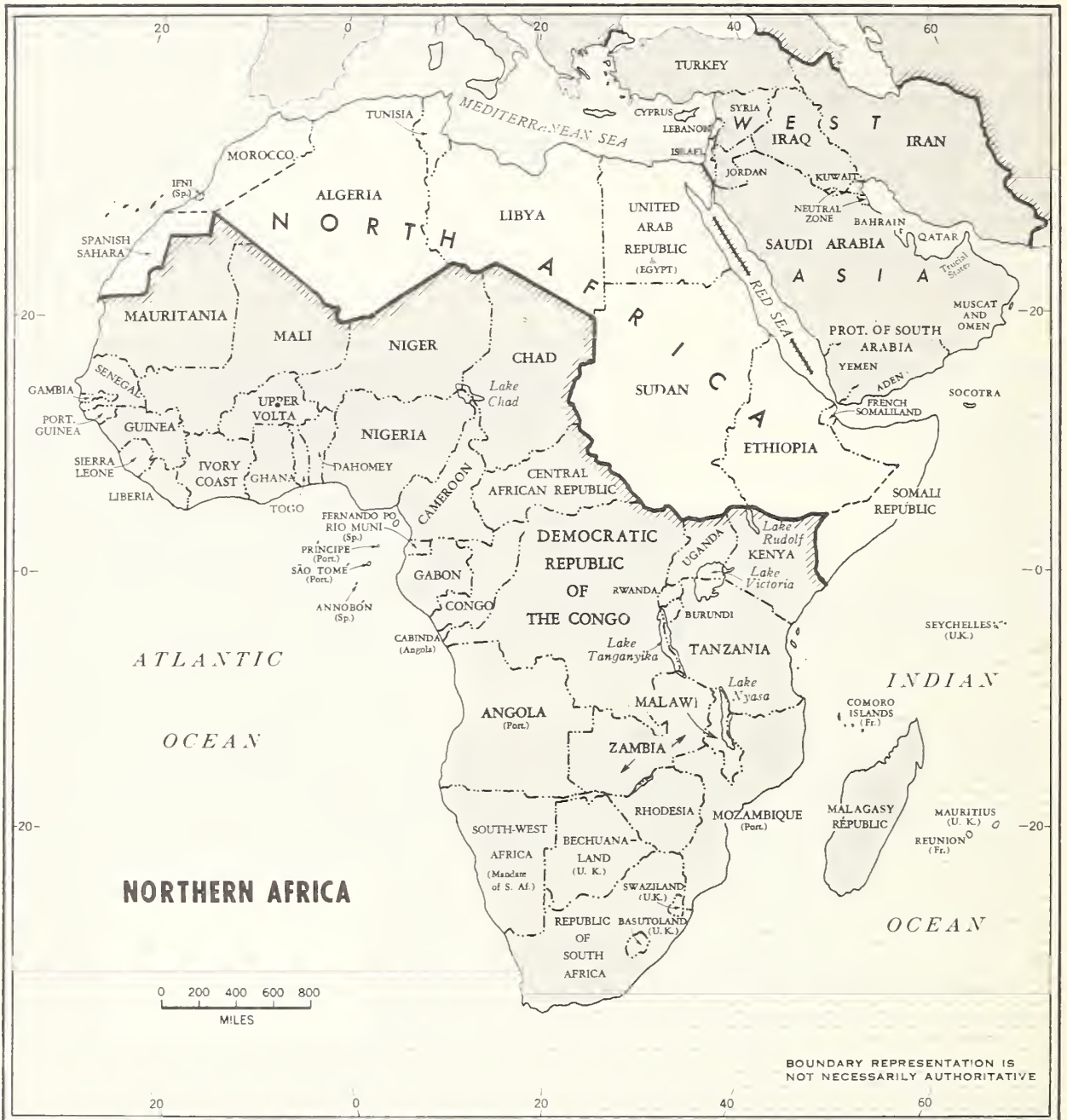
Over the last decade, the volume of agricultural exports from the region has risen steadily. But total export earnings from agriculture have remained fairly stable due to continuous declines in world prices for agricultural products. Also, a series of drought years, along with the rising demand for cereals within the region, have led to a drop in the share of grains in total export earnings. Petroleum has become an important export earner. At present, however, its benefits are restricted to a few countries.

Northern Africa's agricultural imports have increased approximately 45 percent by value since 1955. The region has provided a growing outlet for U. S. farm exports. Because of the dollar shortage in most of the countries, the largest percentage of U. S. imports moves under special Government programs.

In addition to sizable imports of livestock products, vegetable oils, and feed-grains, the area imported close to 2.5 million tons of breadgrain in 1964. Although several development programs are underway to improve and expand agricultural production, even larger food imports will likely be required in the future to maintain present consumption levels. The area's average daily per capita supply of slightly over 2,200 calories is dominated by grains and equals only 69 percent of the level for the United States.

Northern Africa, as used in this report, comprises basically the countries lying astride or north of a line from Rabat to Mogadiscio. More specifically, the following 11 countries are included: Algeria, Ethiopia (including Eritrea), French Somaliland, Ifni, Libya, Morocco, Somali Republic, Spanish Sahara, Sudan, Tunisia, and the United Arab Republic (fig. 1). The abbreviation UAR is used extensively for the United Arab Republic in this report.

Analyses and comparisons in this report suffer from a lack of reliable statistics. These are almost nil for Ifni, Spanish Sahara, and the Somalilands. Large gaps and deficiencies exist in statistics for other countries of the area. This study, however, attempts to point out these weaknesses; by doing so, it should encourage future improvement in statistical information.



AGRICULTURE OF NORTHERN AFRICA

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ECONOMIC SETTING

Nature of Economy

Economic activities in North African countries are predominantly agricultural and pastoral. Known mineral deposits are limited; except for petroleum, they are worked on a very small scale. Apart from public utilities and establishments for processing agricultural and pastoral products, industry is still in a very early stage of development. Even in the United Arab Republic (UAR) and Algeria--the area's most industrially developed countries--agriculture accounted for a substantial part (35 percent) of the gross national product in 1962. The percentage ranged upwards for other countries to a high of 80 percent for Ethiopia.

Agriculture in these countries can be divided into two distinct groups--the traditional or subsistence, and the modern. The traditional sector is generally believed to occupy the larger portion of the active population, but it makes the smaller contribution to total domestic product. Traditional agriculture is basically organized for subsistence; the crops grown are chiefly the staple foods of the community. Participation in exchange is incidental and is directly dependent on marketable surpluses above family needs. Except in the UAR, subsistence crop production is based mainly on rainfed cultivation.

Level of Income

The gross national product (GNP) aggregate value of all goods and services produced in the area in 1962 amounted to approximately \$12 billion. This was slightly over 2 percent of that for the United States in the same year. Yet, the area's combined population is nearly half that of the United States. A large proportion of Northern Africa's population lives at an extremely low income level.

Individual incomes vary widely within and among the countries of the region. Per capita income in the agricultural sector is substantially lower than that in the non-agricultural sector, and approximately two out of every three North Africans are classified as rural dwellers. Barter, while on the decline, is still significant in much of the area. For important segments of the populace, personal wealth and income are often not reflected in elaborate dwellings and furnishings but rather in the number of cattle owned, the amount of land held, and the frequency of feasts.

The availability of natural resources and the degree to which they have been developed vary greatly throughout the region. For example, Ethiopia is believed to have an abundance of natural resources, but they remain virtually undeveloped. Accordingly, the average per capita GNP in Ethiopia is little more than one-third of that for the region and less than 15 percent of that for Libya, where the petroleum industry is being developed.

The modern farming sector involves only a relatively small percentage of the population, but accounts for most of the agricultural production directed toward the money economy. The modern group is generally considered of fairly recent origin, but it was well-established prior to the wave of independence that has swept Northern Africa within the last decade.

Table 1.--Northern Africa: Selected economic indicators

Country	Gross national product, 1962 ^{1/}	Agricultural share of GNP	Per capita GNP, 1962	Annual growth in GNP, 1960-62
	Million dollars	Percent	Dollars	Percent
Algeria.....	2/3,253	35	281	3/
Ethiopia.....	890	80	46	6
Libya.....	365	3/	296	27
Morocco.....	2,005	40	163	1
Somali Republic ^{4/}	54	3/	40	3/
Sudan.....	2/1,241	70	100	4
Tunisia.....	750	40	175	6
UAR.....	3,370	35	123	5
Total or average.....	11,928	43	132	5

^{1/} 1961 prices. ^{2/} 1962 prices. ^{3/} Not available. ^{4/} 1959 only.

Source: Summary of Basic Data, Agency for International Development, 1964.

Recently, the large gap between high-income and low-income groups has begun to be filled to a limited extent by a middle class. Also, movements toward social equality and higher levels of living have been reducing this gap in several of the countries. To hasten the removal of these inequalities, programs for agrarian reform are underway or planned by most of the governments.

Table 1 shows that the UAR ranked first in GNP in 1962, but on a per capita basis, was below the average for the region due to its large population. Highest per capita incomes were reported for Libya and Algeria; the lowest were for Ethiopia and the Somali Republic. Although data are not available, it is believed that income levels for Ifni and Spanish Sahara are even below the Somali Republic's \$40 per capita.

An average annual economic growth rate of 5 percent was reported for the area during 1960-62. The Libyan economy has been the most dynamic within the last few years due to a boom in its petroleum industry. A series of crop failures accounted for the low rate of growth reported for Morocco.

POPULATION

Number, Distribution, and Growth Rate

In 1937, Northern Africa had a population of 56.2 million. By 1962, it had 90.5 million; by 1975, a rise to 122 million is expected. In less than 40 years, then, the population will have more than doubled. This rapid rate tends to highlight one of the area's main economic problems--its inability to expand agricultural production fast enough to keep abreast of population growth.

In contrast with Central Europe and the Far East, most of Northern Africa is not densely populated. The region has less than 3 percent of the world's population and about 3 percent of its arable land. However, chronic population pressure exists--most acutely in the Nile Valley. The situation in the UAR gives an idea of the magnitude of this

problem. The country now has less than one-fourth of an acre of cultivated land per person, and the proportion has been shrinking each year.

In addition to the Nile Valley, a major share of Northern Africa's population is concentrated close to the Mediterranean and Atlantic coasts. In contrast, there are wide inland areas where few people live and where rainfall is insufficient for crop production.

The area's population growth rate is estimated at 2.3 percent annually (table 2). In general the most rapid rates of growth have been in countries with the largest populations.

Improved health and medical facilities in recent years have prolonged life expectancy. Future modifications in population growth could come with the use of birth control methods more fully accepted and promoted.

There is not a close correlation in these countries between size of population and arable land. The widest discrepancy exists in the UAR. It alone accounts for 30 percent of the region's population but for less than 6 percent of its arable land (table 3).

Most North Africans are predominantly of Arab or Berber stock; Arabic is their principal language. Ethiopia, however, is a major exception, where Amharic is the official language. Most of Ethiopia's population is of Semitic and Hamitic origin. The influence of Arabs, Indians, and Negroid tribes is also apparent. Except in Ethiopia where the Coptic Church, a branch of the Christian Church, dominates, most North Africans are Moslems. There are some pagans in various parts of the area, the largest number in southern Sudan. There are small and declining numbers of Europeans and Jews throughout the region.

While there are increasing efforts to expand school facilities throughout the area, few North African farmers have had any formal education. A large percentage of the male population over 15 years of age is illiterate. Training in agriculture is more readily provided in the UAR than in the other countries. There is, however, in all countries a growing tendency to provide agricultural training at the secondary school level.

NATURAL ENVIRONMENT

Topography

Relief (topography), an important physical factor affecting agriculture in Northern Africa, largely explains the various types of farming in the region. In general, mountainous terrain and desert areas restrict agriculture to the Nile Valley, the narrow coastal and river plains, and the high plateaus.

The Atlas Mountain Ranges stretch across the northwest. Their westernmost massifs border the Atlantic littoral in Morocco and come to land's end at Cap Blac and Cap Bon in Tunisia. Although sizable peaks with heights of 5,000 to 10,000 feet above sea level are common in Morocco, and at one point 14,000 feet is reached, they generally range from 2,000 to 5,000 feet. They slope down to the Atlantic Ocean in the northwest, to the Mediterranean Sea on the north, and to the Sahara Desert on the south. These high areas enclose fairly well-watered forests, grazing lands, and snow fields. Where possible, they are intensively farmed. There are plateaus, slopes, and flat areas suitable for producing grain, grapes, and olives. Livestock raising

Table 2.--Northern Africa: Population in 1937, 1962, and projected to 1975; annual rate of growth, and rural share of total population, by country

Country	Population			Estimated	Rural
	1937	1962 ^{1/}	Projected	current	share
	Thousands	Thousands	Thousands	annual rate	of total
			Percent	of growth	population
Algeria.....	7,330	11,530	15,893	2.5	66
Ethiopia.....	13,670	19,350	23,183	1.4	95
French Somaliland...	47	2/68	77	3/1.0	3/60
Ifni.....	40	2/50	55	3/.8	3/85
Libya.....	860	1,235	1,497	1.5	80
Morocco.....	4/7,253	12,334	18,111	3.0	80
Spanish Sahara.....	5/	2/25	28	3/.8	3/95
Somali Republic.....	1,440	1,924	2,161	.9	90
Sudan.....	6,880	12,448	17,822	2.8	90
Tunisia.....	2,664	4,295	5,626	2.1	60
UAR.....	6/16,008	27,257	37,572	2.5	32
Total or average..	56,192	90,516	122,025	2.3	67

1/ Midyear 1962. 2/ Midyear 1961. 3/ Estimated. 4/ Includes Spanish Sahara.

5/ Included with Morocco.

6/ Excluding alien armed forces stationed in the area and the small nomad population.

Table 3.--Northern Africa: Population and arable land, 1962

Country	Population ^{1/}		Arable area		Arable
	Number	Regional	Acres	Regional	area per
	Thousands	Percent	Thousands	Percent	capita
					Acres
Algeria.....	11,530	12.7	17,453	15.6	1.5
Ethiopia.....	19,350	21.4	28,370	25.3	1.5
French Somaliland..	2/68	.1	3/390	.3	3/5.7
Ifni.....	2/50	.1	4/	--	--
Libya.....	1,235	1.4	5/6,197	5.5	5/5.0
Morocco.....	12,334	13.6	21,153	19.0	1.7
Spanish Sahara....	2/25	6/	3/362	.3	3/14.5
Somali Republic...	1,924	2.1	2,364	2.1	1.2
Sudan.....	12,448	13.8	17,537	15.6	1.4
Tunisia.....	4,295	4.7	12,133	10.8	2.8
UAR.....	27,257	30.1	6,128	5.5	.2
Total or average:	90,516	100.0	112,087	100.0	1.2

1/ Midyear 1962 unless otherwise indicated.

2/ Midyear 1961.

3/ Total agricultural area, including pastures and permanent meadows.

4/ Not available. 5/ In agricultural holdings. 6/ Less than .05 percent.

is also important. Elevation, location, nearness to the sea, and variation in rainfall help determine agricultural productivity.

The coastal plains, the areas between the mountain ranges and the sea, are by far the most important cropland areas in northwest Africa. Immediate coastal areas are mainly used for extensive market gardens, orchards, and vine crops. Further inland are plains and valleys planted in vineyards, cereals, citrus, olives, and forage crops. The rough and higher-altitude areas closer to the mountains are devoted mainly to livestock raising; yet, vine and tree crops are of importance.

South of the Atlas Mountains lies the Sahara Desert, extending eastwards from the Atlantic Ocean for more than 3,000 miles into Western Asia. Its great stretch of steppeland, sand dunes, rim rock, and gravel protrudes northeastward and meets the Mediterranean coastline in Libya. It extends southwards to the region formerly known as French West Africa and to Khartoum in the Sudan.

Most of this arid plateau is less than 1,000 feet in elevation and is too barren to support cattle, though camels and goats may subsist there. Even so, life is usually restricted to the sparsely populated, scattered oases. The only outstanding exception is where the Nile River traverses the Sahara and nurtures the garden area of the Nile Valley--a paradox within an otherwise barren sea of land.

The extensive highlands of Ethiopia, extending into Kenya and Uganda help explain the types of agriculture in the southern Sudan and Ethiopia. Most of this extensive plateau is over 2,000 feet in elevation; much of it reaches 4,000 feet. Many sharp rift valleys cut through these highlands. Towering mountains and deep crevices provide a wide variety of climate, vegetation, and environmental zones. Water originating in these uplands supplies the swamplands of the Sudan and the Nile River and its tributaries.

Throughout Northern Africa there are also several intermittent streams, lakes, and oases that provide or offer the possibilities for irrigation of rather large areas. Compared with other parts of the region, Morocco is abundantly supplied with underground and surface water.

Rainfall and Temperature

Large areas of Northern Africa are affected by summer droughts. The absence of rain at the very time when warmth for plants is available is a great adverse factor, considerably affecting the whole agricultural pattern. Even when precipitation is sufficient for crop production, it is most often unevenly distributed. Thus irrigation is of growing importance to the expansion of crop production.

Coastal Northern Africa enjoys a Mediterranean-type climate with two contrasting seasons--one hot and dry, and the other cool and rainy. The rainy season usually lasts from September to May but varies greatly among localities and years. Substantial portions of the coastlands of Morocco, Algeria, and Tunisia receive 30 inches of rainfall a year but rainfall for the countries averages only about 20 inches.

Semidesert and desert climates mainly prevail on the inland side and south of the Atlas ranges. Melting snow supplements the many streams originating in these highlands, thus making irrigation water available during the dry season.

Insufficient rainfall is the major physical limitation of agriculture in Libya, UAR, and that portion of the Sudan north of Khartoum. Except for small areas farmed by nomads of the desert and scattered sections along the coast, all crops in this region depend on irrigation. However, relatively high humidity and heavy early-morning fogs are of some importance to crop production in the Egyptian Delta. The humidity of the area has seasonal aspects; from a minimum in the spring--the early growing months for cotton--it increases to a maximum in the fall.

Unusually high temperatures prevail in the United Arab Republic and northern Sudan. Spring and fall, as experienced in more temperate lands, are unknown; no trees shed their leaves in winter. Throughout the summer, temperatures in excess of 100°F are recorded over wide areas. Due to the vastness of the desert, hot, dry, sand winds are frequent. These mainly occur in late spring and early summer, and can cause much damage to crops.

South of Khartoum the amount of rainfall increases sharply to an annual range of 60 to 75 inches on the western parts of the Ethiopian plateau. Here, rainfall not only is more than adequate for crop production, it is intermittent during most of the crop year. The principal wet season may start in April or as late as July, and continue after mid-September.

To the east of these highlands the rainfall pattern reverses. In the lower altitudes of the Somalilands, annual rainfall averages little more than 4 inches.

ORGANIZATION OF AGRICULTURAL RESOURCES

Land Utilization

Northern Africa's area of nearly 4 million square miles--some 9 percent larger than that of continental United States, Alaska, and Hawaii combined--covers slightly more than 41 percent of the African continent. Including land in fallow, less than 1 percent is under cultivation. The entire area used for livestock and crop production is estimated at only 515 million acres; over three-fourths of this is classified as permanent meadow and pasture. On the other hand, land of no value for agriculture accounts for 60 percent or more of the regional total.

Table 4 shows that almost 60 percent of Ethiopia's land is suitable for agricultural production, accounting for one-third of all regional land that can be used for agricultural purposes. Nearly 40 percent of Tunisia's small area is arable; 19 percent of Morocco's land is arable. Although a much smaller percentage of their land is classified as arable, Algeria and the Sudan are next in importance to Ethiopia in total acreage suitable for farming purposes. Even though arable land represents a relatively high percentage of the total land area in a country, the country does not necessarily dominate in agricultural production. For example, the UAR accounted for approximately one-fourth of Northern Africa's total agricultural output in 1964, although it has little more than 5 percent of the region's arable land.

The dominant feature of Northern Africa's land utilization picture is the extremely large proportion of wasteland--well over 60 percent. Nevertheless, there are also sizable unused areas of potentially productive land. Although a thorough land survey in the Sudan has not been made, various estimates place its potentially productive land at close to 100 million acres. There are some indications that potentially productive lands in Ethiopia may equal or surpass those of the Sudan. The use of much of this land, however, is limited by inadequate transportation facilities and by the shortage of usable water.

Table 4.--Northern Africa: Land utilization, 1960^{1/}

Country	Agricultural area		:Potentially		: Wasteland,		: Percentage	
	: Cropland and orchards : 1,000 : acres	: Meadows and: : natural : pastures : 1,000 : acres	: productive : land, now : unused : 1,000 : acres	: Forests and woodlands : 1,000 : acres	: built on : area, and : other : 1,000 : acres	: Total area : 1,000 : acres	: agricultural : area of : total	: Percent
Algeria.....	17,453	94,863	2/	7,534	468,440	588,290	19.1	
Ethiopia.....	28,370	145,051	2/	10,903	108,203	292,527	59.3	
French Somaliland.....	3/390	603	2/	296	4,145	5,434	18.3	
Libya.....	6,197	21,677	2/	1,181	405,552	434,607	6.4	
Morocco.....	21,153	24,799	2/	13,301	50,336	109,589	41.9	
Somali Republic.....	2,364	50,803	42,286	35,570	26,478	157,501	33.8	
Spanish Sahara.....	3/362	4,940	2/	2/	60,400	65,702	8.1	
Sudan.....	17,537	59,280	93,900	226,005	222,216	618,938	12.4	
Tunisia.....	12,133	259	7,417	2,421	8,689	30,919	40.1	
UAR.....	6,128	217	1,344	--	239,311	247,000	2.6	
Total.....	112,087	402,492	144,947	297,211	1,593,770	2,550,507	20.2	
Percentage of total.....	4.4	15.8	5.7	11.7	62.4	100.0	--	

^{1/} Where 1960 data were not available, the latest available data were used.

^{2/} Not available.

^{3/} Estimated

Source: Food and Agriculture Organization Production Yearbook, Rome, 1962, Vol. 16.

The arable area of Northern Africa in 1962 was calculated at 1.2 acres per person compared with 2.5 acres in the United States. On an individual country basis, however, the ratio varies widely--from less than 0.2 acre per capita in the UAR to 2.8 acres in Tunisia.

In agricultural production, cereal crops are most important. Wheat is the most widely grown crop. Although surpassed by sorghum in the Sudan, teff in Ethiopia, and in some years by barley in Morocco, wheat is by far the preferred cereal in the North African diet. Fruit (mainly citrus) is important in Morocco, Algeria, and Tunisia. Cotton in the UAR and the Sudan, and coffee in Ethiopia are the region's most important industrial crops. Dry legumes in general are not very important since demand for them is restricted. The climate excludes dry-farmed corn, and oats do not grow well. Thus, wheat, barley, the olive tree, citrus, and vineyards are the mainstays in Northern Africa.

Only in Morocco, Algeria, and the Sudan do forestry products contribute importantly to gross national products. The northern coastal highlands of Morocco and Algeria have small areas of deciduous and large areas of coniferous forest, and there are fine stands of mixed broadleaf and coniferous forest in the higher mountain ranges. Cork exports are important in Morocco, Algeria, and Tunisia. Although there are small areas of coniferous forest south of the Mediterranean vegetation zone in the arid steppe, the principal growths are alfa grass and semidesert shrubs.

The hashab tree is found throughout much of the central Sudan and in small areas of the Somalilands. It produces a semiwild forest product, gum arabic, that has become an important source of foreign exchange earnings. Only in recent years have efforts been made to prevent the burning of forests in the clearing of land close to heavy growths of hashab trees. No attempt to produce the gum under cultivation has been reported.

Since most of Northern Africa is within the zone of summer drought, irrigated land accounts for a sizable portion of the area's total agricultural production. Where water is available for irrigation, crops such as citrus fruits, cotton, sugar cane, corn, and rice are often produced.

Ownership and Land Tenure

There are great similarities in the various forms of land tenure in the North African countries. The land tenure system has been greatly influenced, except in Ethiopia, by the Islamic religion. It is not only a religion; it is a total way of life, and it permeates many aspects of culture in these countries.

The best farmland is often owned by very few people. In addition, many of these are absentee owners. At the same time, most of the working class have undersized holdings so small that they cannot be considered sufficient or economic units. Many North African farmers do not own land but are tenants. Prior to the UAR's agrarian reform program, for example, reportedly well over 60 percent of its agricultural area was in some form of tenancy. Such practices have made for political unrest and economic stagnation. Thus, governments of the area have recently taken considerable interest in promoting farmland redistribution.

The right to individual ownership of land is recognized in Islamic law, and the native farmer is accustomed to it. Ownership or individual share interest in land customarily derives from continuous possession, or receipt of rent or profit or regularity of cultivation. Islamic law also holds that individual ownership can be established through inheritance.

Settlement of rights in agricultural land, followed by registration, has not been extended to large areas of the Sahara, Ethiopia, or southern Sudan. Instead, there is general acceptance of the idea that governments hold these areas in trust for the people who habitually exercise rights of tenure over the land.

Vacant lands and areas used by nomadic tribes are considered state-owned. Where a pastoral economy prevails, however, all land is usually considered common grazing land and is used by all the herdsmen who possess it.

As a general rule, transactions in land are subject to official consent in all countries, and lately ownership or freehold title in agricultural land by foreigners has not been allowed. Furthermore, several governments of North African countries within the last decade have increasingly tended to nationalize foreign holdings.

Land measurement and registration, together with the gradual application of a system of cash taxation, have been slow. In areas where such programs are underway, the result has generally been a more uniform system of cash taxation and a more uniform system of land tenure. Land surveys and registration are more complete for the UAR than for the other countries.

Lack of reliable information makes it impossible to obtain little more than a vague picture of the land tenure system in Ethiopia. Tenure varies largely according to local customs, type of agriculture, and degree of governmental influence. Probably not more than 10 percent of the total land is owned by persons approximating a group of individual freeholders. This ratio is believed considerably below that for other countries in the area. Instead, large areas of Ethiopia's land are held by the church--perhaps 25 to 40 percent of the country's total area. Most of the remainder is owned by provincial chiefs, the high nobility class, and the Emperor's family.

Land tenure practices in the Gezira and related schemes in the Sudan are unique in Northern Africa. The Gezira lies between the Blue Nile and White Nile rivers from their juncture southward; it covers approximately 5 million acres of which over 3 million acres are irrigable. The Sudanese Government holds the land on a long-term lease and has established a triple partnership for operating the scheme. Originally, this involved the Government, tenant farmers, and a concession company in charge of management. More recently, management has been vested in the Sudan Gezira Board. There are about 35,000 tenants in the Gezira plantation. Their work is closely controlled and supervised. Tenancy is on an annual basis, but no tenant is evicted unless he fails in his obligation as a partner in the project. Since former land-owners of the area were given preference in the cooperative project, some found themselves in the unique position of being tenants on their own land.

Recently, a new procedure under which large production units are being formed has been instituted in the UAR and Morocco. These units are organized generally along the lines of collective farms and are worked by small farmers grouped into collectives or cooperatives. The area allotted each farmer varies according to the types of farming practiced. Machinery, equipment, and trained advisory personnel are provided by local work centers charged with full management of the units. This type of land settlement has often been used instead of division into small holdings, where large tracts have been expropriated under agrarian reform programs. In addition, this type may well become more widely used as more of the area's productive land comes under state control.

There are various forms of share-rental arrangements throughout Northern Africa. These have often been so heavily weighted in favor of absentee landowners that efforts are being made in some countries to standardize all forms of tenancy. Cash tenancy is generally on a small scale and only near larger cities, where truck farming is common.

Land Reform

Agrarian reform in one form or another has been undertaken by several North African countries within recent years. The UAR has the most far-reaching program. In 1952, its land reform law was put into effect to correct maldistribution of land. It provided, with a few exceptions, that no person could own more than 200 feddans (1 feddan equals 1.038 acres) of agricultural land. This total has since been decreased to 100 feddans. Reportedly, the number of Egyptian landowners rose by some 300,000 families as a result of the land redistribution program.

The 1952 law also fixed the maximum rent ceiling at 7 times the basic land tax. For sharecropping rents, the law decreed that the landlord's share should not exceed one-half after allowance for all production expenses. This provision caused large rent reductions. It is generally held that a larger segment of the rural population benefited from this section of the program than from the redistribution phase.

The Egyptian reform program emphasized formation of cooperatives to handle problems of small holdings and fragmented farms, and made membership in them compulsory for those who received land under the program.

Algeria undertook an agrarian reform program in 1956. It mainly involved plans for the division of larger estates and consolidated lands then being cultivated by European farmers and agricultural corporations. These lands were to have been resettled by chosen Muslem families, but because of administrating difficulties and rebel objections to Muslem participation in the program, no appreciable redistribution was carried out. Since independence, several large holdings, including those of both Europeans and Muslem Algerians, have been nationalized and placed under control of "management committees." In 1963, however, the Algerian Government signed an agreement with France implying that further nationalization was not contemplated. More recent Algerian action suggests that this agreement has not been fully implemented; almost all large estates formerly owned by Europeans have been taken over and are being operated on a cooperative basis, with management by the Algerian Government.

Agrarian reform programs in Tunisia have promoted new intensive farming. The current Three-Year Plan for economic development, begun in 1963, emphasizes withdrawal of economic privileges for Europeans in Tunisia, purchase of European-owned land, redirection of trade from France, and expansion of agricultural industries. The plan is to replace some low-value traditional crops with specialty fruits and vegetables and industrial crops for home use and export. The livestock industry also is being developed.

Early work was mainly on construction of a water control system and large-scale reclamation and land redistribution projects in the Medjerda Valley, where dryland grains had been grown for centuries. More recently, improved cultivation techniques and increased irrigation have been projected for drier sections in central and southern Tunisia. Here, where subsistence farming and livestock raising are most difficult, many projects using spring water, artesian wells, pump wells, and water-spreading are going forward. There have been continuing programs for building broadbase terraces and small dams for subsoiling, strip-cropping, and controlled grazing. Reforms are underway in agricultural extension and research services and in farm credit. Facilities for agricultural training and education are being expanded.

Agrarian reform in Morocco has mainly taken the forms of land redistribution and consolidation. The Moroccan Government has announced plans to use close to 2 million acres of public lands for its redistribution program. In addition, much of the foreign-owned land--estimated at about 2.2 million acres in 1957--has been nationalized and made available for redistribution. Supervisory management and credit have been made available. Under the system, selected farm recipients may remain on newly received farmland as long as it is cultivated in a manner satisfactory to the government. But neglected holdings are subject to reallocation.

The Moroccan Government has also had to regroup individual landholdings too small for viability and subsequently to establish collective farms large enough for efficient mechanization. Landowners or tenants who formerly worked scattered parcels of land in irrigated areas have been required to exchange them for other land, so that holdings might become more economic units for canal irrigation water.

Several attempts at land reform have been made in Ethiopia. As a part of a program for economic reform begun in 1954, the Emperor distributed state lands among certain categories of unemployed persons. Fifty-acre tracts in the fertile Kaffa Province were given to each of a thousand landless Ethiopians. Although these tracts of land lie principally in a coffee-growing district, the recipients may use them as they desire as long as they are cultivated and progressively improved.

Although Ethiopia has announced plans for additional redistribution of farmland, the basic problem of private farmland ownership remains to be solved. Efforts to change the age-old patterns of tenancy have encountered many difficulties and delaying tactics. Foremost among advocates of resistance to change are large landowners. The situation is further aggravated by the fact that most of the best agricultural land is owned by the Coptic Church.

FARMING PRACTICES

North African farming methods vary greatly by country, and often between various parts of the same country. Generally, rather primitive methods are used. Most farms are small and represent the traditional agricultural economy in which land is worked by the farmer and his family to meet their own needs. Consistent with this subsistence farming, extremely limited amounts of capital expenditure have been made for tools and equipment.

By contrast, some larger private holdings and government projects practice very intensive farming. This includes annual crop rotation and use of chemical fertilizers, and modern machinery and equipment. While the magnitude of such practices varies widely, they are found in all countries. Usually, the modern farming sector accounts for only a small portion of economic activity. Yet, the output of these holdings often accounts for the greater part of the region's agricultural exports.

Much farming in the modern sector, if not now, was at one time owned or operated by Europeans. Independence, however, has accelerated European emigration and increased the rate at which farmland in the modern sector has come under land management and redistribution programs. Even so, the impact of European farmers on the North African agricultural economy is still strong.

This dual structure must be borne in mind in all discussion of North African agricultural methods. It is also well to note other factors greatly changing traditional farming practices--recent programs of agrarian reform, the trend towards cooperative farming, and the nationalization of foreign holdings.

The potential for multiple cropping is good in several North African countries. However, it is now of greatest importance in the UAR. As there is no great seasonal variation in Egyptian climate, farm crops can be grown throughout the year. For example, each cultivated acre produces an average of 1.5 crops each year. Thus, the UAR's 6.5 million cultivated acres give an annual crop area of well over 10.6 million acres.

Lack of water is a chief factor limiting agricultural development in Northern Africa. In most of the countries, agricultural progress and irrigation development are intimately associated and interdependent. In most instances, any significant increase in cultivated area must come from new irrigation projects, the improvement of existing ones, and more rational use of available water. Only the Sudan and Ethiopia offer great possibilities for expanded dry farming.

Despite its importance to agricultural progress in most of the region, irrigation development has varied widely between countries. Egyptian agriculture is totally dependent upon irrigation; highly efficient irrigation practices are followed. Latest available data on irrigated area by country are in table 5.

Unlike farmers south of the Sahara, North African farmers cannot rely upon fire to clean the bush, destroy insects and their eggs, kill weeds and their seeds, and loosen the soil so that hand tools can be used to plant seed. Only in limited areas of the Sudan and Ethiopia are such practices possible. Instead, small farms are generally planted to crops year after year. Continuous land use without the addition of organic matter helps explain the low crop yields usually received.

Table 5.--Northern Africa: Agricultural area, planted area, and irrigated area, by country, 1960

Country	Agricultural land ^{1/}	Cropland and orchards	Irrigated land	
			Area	Percentage of planted area
	Thousand acres	Thousand acres	Thousand acres	Percent
Algeria.....	112,316	17,453	417	2.4
Ethiopia.....	173,421	28,370	<u>2</u> /74	.2
French Somaliland.....	993	390	--	--
Libya.....	27,874	6,197	321	5.2
Morocco.....	45,952	21,153	1,284	6.1
Somalia, Rep.....	53,164	2,364	<u>3</u> /408	17.3
Spanish Sahara.....	5,302	362	--	--
Sudan.....	76,817	17,537	1,951	11.1
Tunisia.....	12,392	12,133	<u>4</u> /110	9.1
UAR.....	6,345	6,128	6,100	99.5
Total.....	514,579	112,087	10,665	9.5

^{1/} Cropland, orchards, meadows, and natural pastures, not including potentially productive land not being used.

^{2/} Data for Eritrea only.

^{3/} For former Italian Somaliland only.

^{4/} Estimated.

Source: Food and Agriculture Organization Production Yearbook, Rome, 1962, Vol. 16.

Size of Farms

There are great variations in the size of farmholdings in Northern Africa. Size is largely determined by the availability of agricultural land. Where adequate farmland is available, size is determined by the total area needed to supply the families' food requirements under the farming methods used. Along the banks of the Nile and other irrigated areas, land is held in very small units; in 1961, close to 95 percent of all Egyptian farmholdings averaged only a little more than 1 acre each. Irrigated holdings of 10 acres are common along the Nile in the Sudan. Where larger areas of agricultural land are available--as in parts of the Sudan, Ethiopia, Morocco, and Algeria--holdings in excess of 15 acres are not uncommon. A sizable number of farms in Algeria, Morocco, and Tunisia exceed 1,000 acres each.

Detailed information on size of farmholdings is available only for the UAR and the former southern zone of Morocco (table 6).

Table 6.--Number and size of farms in the UAR and Morocco, 1961

Country and range	Number of farms	Average size
	Thousands	Acres
UAR:		
Less than 5.0 acres.....:	2,919	1.1
5.1 to 10.4 acres.....:	80	6.8
10.5 to 51.9 acres.....:	91	16.6
52.0 to 103.4 acres.....:	6	74.3
103.5 acres ^{1/}:	5	103.5
Total.....:	3,101	--
Morocco		
Less than 25.0 acres.....:	848.3	6.0
25.1 to 246.9 acres.....:	101.5	30.8
247.0 to 1,234.9 acres.....:	5.2	611.7
1,235.0 acres and over.....:	.9	2,298.8
Total ^{2/}:	955.9	--

^{1/} Under the second phase of the Agrarian Reform Program, individual holdings could not exceed 100 feddans (103.5 acres).

^{2/} Former southern zone only.

Fertilizer

Consumption of inorganic fertilizers is increasing in Northern Africa but is still extremely low. The amount used per acre of cultivated land is almost negligible--not enough to replace even a small part of the nutrients extracted each year from the soil through cultivation. A large proportion of the fertilizers is applied only to a few major crops, and only then in the more advanced areas. This is well illustrated in the Sudan, where fertilizer is almost totally limited to the Gezira area.

The UAR is an exception to the general trend. With only 1.3 percent of the region's agricultural land, it accounts for approximately four-fifths of all nitrogenous fertilizers in use (table 7). This was equivalent to 37.4 pounds of nitrogen per crop acre in 1960 and 40.7 pounds in 1961. However, the UAR's agricultural area produces an average of 1½ crops annually; thus, approximately 60 pounds of nitrogen were available for each cultivated acre in 1960. This is a much higher rate of application than those in the United States and the United Kingdom.

Despite substantial gains in recent years, use of phosphate and potassic fertilizers by North Africans is even below that of nitrogenous fertilizers. The UAR, again, is the region's leading consumer of P₂O₅; Algeria is next in importance. In most years, Algeria alone accounts for 60 percent or more of all potassic fertilizers used in Northern Africa.

A regional trend toward increasing consumption of fertilizer has been evident since the first postwar years. Further increases are expected, since new promotional programs are underway in several countries. In most countries, the increases recorded and expected are significant in relation to previous use. But use is still extremely low; for the area, it seems insufficient to have much effect on crop yields, except in the UAR.

Dependence on foreign sources of supply undoubtedly has been one of the major obstacles to wider use of fertilizers. In the region, the UAR produces the only nitrogenous fertilizer. In 1961, its production accounted for only a little more than half its total domestic consumption. However, if present and planned projects are completed, the UAR will soon produce most of its own fertilizers. The UAR, Algeria, and Tunisia often export small quantities of phosphate fertilizers. The region will likely continue as a net importer for some time.

Farm Mechanization

Available data indicate that the number of tractors used for agricultural purposes nearly doubled between 1950 and 1960 (table 8). Despite this growth, capital investment in machinery in relation to total cropped acreage remains low. And over much of the area, mechanization is at such a low level that it has not contributed significantly to increased agricultural production.

Use of tractors for farming has increased most rapidly in Morocco, Algeria, and Tunisia. These countries have close to 75 percent of the tractors on North African farms, and even a higher percentage of the area's other modern farm implements. This is basically due to European influence and the fact that these countries lead in grain production, which is more readily mechanized than most other crop production.

Regional manufactures of farm machinery are small; requirements are satisfied almost wholly by imports. Algeria reportedly has one small manufacturer of tractors; production of other farming implements is limited to rather simple items such as plows, sprayers, cultivators, and general hand tools. There is much scope for increased local production of this equipment.

The size of holdings and the final situation of farmers have been factors seriously limiting greater mechanization. To correct these ills, several governments have undertaken agrarian reform and promoted machinery cooperatives, which provide essential services and requisites for improved mechanization.

Table 7.--Northern Africa: Consumption of plant food nutrients, average 1948-53, annual 1955-62

Country	1948-53 : average	1955	1956	1957	1958	1959	1960	1961	1962
		Metric tons							
Nitrogenous Fertilizer (N):									
Algeria.....	7,100	7,700	9,100	12,500	15,400	13,602	16,624	5/	5/
Libya 1/.....	100	700	1,200	817	2,152	2,200	5/	5/	5/
Morocco.....	2/ 3,500	2/ 6,102	2/ 4,413	2/ 4,135	7,499	6,520	9,162	8,600	5/
Sudan.....	4,700	9,801	14,824	15,760	16,680	11,405	18,575	24,450	18,700
Tunisia.....	1,100	859	1,200	3/ 1,600	2,148	1,777	5/	5/	5/
UAR.....	98,200	122,586	115,210	157,345	177,074	105,733	176,633	191,872	5/
Total.....	114,700	147,748	145,947	192,157	220,953	141,237	--	--	--
Phosphate Fertilizers (P₂O₅):									
Algeria.....	4/22,300	22,700	22,500	26,500	25,400	26,640	24,900	5/	5/
Libya 1/.....	200	1,100	1,461	1,463	1,427	1,400	5/	5/	5/
Morocco.....	2/15,900	2/18,268	2/ 9,311	2/15,736	18,747	17,142	17,407	14,568	5/
Sudan.....	3/ 65	175 3/	230	350	464	147	315	257	523
Tunisia.....	4/ 8,600	6,165	6,200	6,200	5,795	9,179	5/	5/	5/
UAR.....	16,700	20,558	23,688	27,494	27,676	24,990	35,961	48,407	5/
Total.....	61,765	68,966	63,390	77,743	79,509	79,498	--	--	--
Potash Fertilizers (K₂O):									
Algeria.....	4/12,900	8,800	9,800	16,300	15,800	16,768	16,200	5/	5/
Libya 1/.....	3/ 175	400	501	497	307	300	5/	5/	5/
Morocco.....	2/ 2,500	6,164	2,913	3,939	4,804	5,193	6,303	5,800	5/
Sudan.....	--	--	--	--	--	82	360	1,200	5/
Tunisia.....	4/ 700	1,274	1,580	1,700	2,083	2,212	5/	5/	5/
UAR.....	4/ 600	120	112	1,507	2,264	3/ 3,010	3,250	5/	5/
Total.....	16,875	16,758	14,906	23,943	25,258	27,565	--	--	--

1/ For Tripolitania only. 2/ Former Southern zone only. 3/ Estimated. 4/ Average for 3 years.
 5/ Not available.

Table 8.--Northern Africa: Tractors used for agricultural purposes, average 1949-52, annual 1959-62

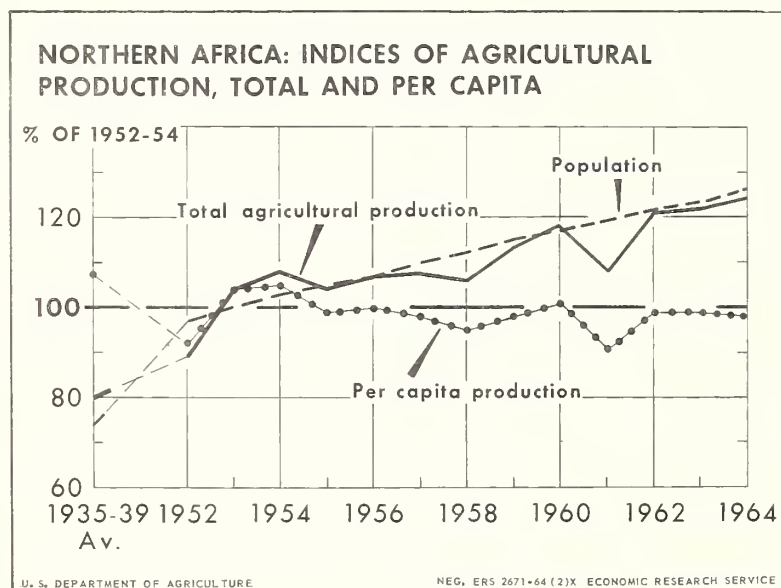
country	1949-52 average	1959	1960	1961	1962
	----- <u>Number</u> -----				
Algeria.....	13,062	26,119	26,800	n.a.	n.a.
Ethiopia ^{1/}	46	112	118	122	122
Libya.....	142	1,740	2,508	<u>2/2,550</u>	<u>2/2,629</u>
Morocco.....	<u>3/7,280</u>	13,526	14,026	11,454	10,915
Somali Republic.....	<u>4/ 312</u>	<u>2/400</u>	<u>2/420</u>	n.a.	n.a.
Sudan.....	89	1,250	<u>5/1,745</u>	<u>5/1,761</u>	n.a.
Tunisia ^{5/}	7,203	11,102	12,299	12,565	12,923
UAR.....	8,550	10,994	5/17,967	n.a.	n.a.
Total.....	36,684	65,243	75,883	--	--

1/ Eritrea only. 2/ Partly estimated. 3/ Former southern zone. 4/ Former Italian Somaliland. 5/ For all purposes.

Source: Food and Agricultural Organization Production Yearbook, Rome, 1963, Vol. 17

AGRICULTURAL PRODUCTION

Allowing for substantial fluctuation, Northern Africa's overall agricultural production is apparently increasing at an average of slightly over 2 percent annually. Thus the region's total production index in 1964 was 24 points above the 1952-54 base period. This was a slightly higher growth rate than reported for the 15 years prior to the base period. Available data indicate that agricultural production from 1937 through 1953 increased an average of about 1.5 percent a year.



Annual variations in Northern Africa's farm output are mainly due to climatic conditions which affect both yields and the acreage planted. The series in table 9 indicates that variations of 20 percent in total crop output are not uncommon, and the variations in some countries have been much larger. For example, Tunisian crop output in 1961 was little more than half the 1960 level. In drought years, famines are prevented only by supplementary imports. Even so, during such years, consumption levels are low.

Figure 2

Population growth has outpaced expansion in agricultural production in the past decade. As a result, the area's per capita production index has remained below the base-period level (figure 2). This growth of population helps explain the large volume of food imports required to maintain consumption levels.

Progress in agricultural production has varied widely by country. Since 1958, only Morocco's total production has failed to progress significantly over the base period; its agricultural output in 1962 and 1964 was some 5 percent below a decade earlier. Likewise, there has been little improvement in Algerian output. On the other hand, the Sudan and Libya account for the area's most remarkable progress. Notable gains have also been made by the UAR. Production in Ethiopia and Tunisia has little more than kept pace with population growth.

The relationship between population growth and agricultural production in Northern Africa is shown in table 10. Since population growth rates are rather steady, wide fluctuations in per capita indices mainly reflect climatic variations from year to year.

As in subsistence or near-subsistence economies, food production is of first importance in all of Northern Africa. Only in the UAR and the Sudan, the area's main cotton producers, did nonfood items account for more than 6 percent of total agricultural production in 1962. Even in these countries, nonfood items make up only about one-fifth of total farm output (table 11).

There has been no major shift in the area's agricultural production pattern in recent years. Perhaps the most strategic relationship in the pattern is the one between what might be called commercial and noncommercial commodities. Over the past decade, the production of export crops or items earning foreign exchange appears to have gained at the expense of commodities grown almost entirely for local consumption. An example is the production of rice compared with that of other grains. Rice, grown mostly in the UAR, is becoming an important export crop. Such a trend is also evident when cotton, oilseed, and citrus production are compared with grains produced almost entirely for local use.

Expansion of cultivated area in most of Northern Africa is very expensive and extremely slow. Even so, the area allotted to 14 of the region's main crops showed a 10 percent increase within the last decade. An increase in area was necessary to help meet growing food requirements; little progress has been made in improving yields of most crops.

The increased area has been used mainly for oilseeds, rice, cotton, sorghum, and millet; there has been some gain in wheat and corn acreages.

Appreciable shifts in the area's total pattern of agricultural production appear unlikely in the immediate future. The present rate of population growth leaves little room for flexibility. Unless this growth rate is checked, or much greater use is made of technology to increase agricultural output, major economic activities must continue to be directed at meeting food needs.

Grains

Wheat.--Northern Africa accounts for approximately 2 percent of the world's wheat production. While other grains are significant in several local areas, wheat is most important as a staple food for the majority of the region's people. Although wheat is produced throughout the area, the UAR, Algeria, and Morocco account for approximately 80 percent of the area's production (Appendix table 21).

Table 9.--Northern Africa: Indices of agricultural production, by country, average 1935-39, annual 1958-64.

(1952/53-1954/55 = 100)								
Country	: 1935-39 : average	: 1958	: 1959	: 1960	: 1961	: 1962	: 1963	: 1964 ^{1/}
Algeria.....	94	96	104	109	81	103	110	102
Ethiopia.....	76	107	112	115	118	118	121	123
Libya.....	74	142	146	131	160	138	147	160
Morocco.....	70	84	87	93	71	94	101	95
Sudan.....	59	130	141	131	162	149	138	150
Tunisia.....	74	140	110	131	81	96	129	116
UAR.....	83	118	123	126	113	134	129	137
Regional total..	79	110	115	118	108	121	122	124

^{1/} Preliminary.

Table 10.--Northern Africa: Indices of per capita agricultural production, by country, average 1935-39, annual 1958-64

(1952/53-1954/55 = 100)								
Country	: 1935-39 : average	: 1958	: 1959	: 1960	: 1961	: 1962	: 1963	: 1964 ^{1/}
Algeria.....	119	86	89	92	67	83	96	89
Ethiopia.....	95	99	102	104	104	104	103	105
Libya.....	95	133	134	118	142	120	126	134
Morocco.....	95	72	74	77	57	73	77	71
Sudan.....	95	113	118	107	130	116	104	110
Tunisia.....	101	130	101	118	72	84	110	97
UAR.....	114	105	107	107	93	108	102	105
Regional total..	108	96	99	101	91	99	99	98

^{1/} Preliminary.

Table 11.--Northern Africa: Food and nonfood commodities as percentage of total agricultural production, by country, 1962^{1/}

Country	: Food commodities : Percent	: Nonfood commodities : Percent
Algeria.....	98.2	1.8
Ethiopia ^{2/}	94.3	5.7
Libya.....	95.7	4.3
Morocco.....	97.1	2.9
Sudan.....	79.1	20.9
Tunisia.....	97.7	2.3
UAR.....	73.6	26.4
Total.....	87.0	13.0

^{1/} "Food commodities" is confined to foods which are edible and which yield calories. Coffee, for example, is not considered a food crop.

^{2/} Partly estimated.

A much larger acreage is planted to wheat than to any other crop. Practically all the wheat is fall sown; without irrigation, little is grown in areas with less than 10 inches of annual precipitation. Wheat produced in the region is of two types "ble dur" and "ble tendre". Ble dur is durum wheat while ble tendre, "soft wheat", is similar to hard winter wheats such as those produced in the United States and other countries. Soft wheat, such as soft red winter wheat grown in the United States and soft white wheat, such as grown in the United States and Australia, are not significant in the region. Although small, acreage in the Sudan, Ethiopia, and Libya has shown some increase in recent years. The UAR is the largest producer as well as the largest importer of wheat and wheat flour in Northern Africa. Morocco, Algeria, and Tunisia are usually exporters of hard wheat, even in years when additional supplies of soft wheat must be obtained from abroad.

Yields are among the world's lowest. Only in the UAR, where all production is under irrigation, do yields surpass those of the United States and Canada. Egyptian yields have improved continuously the last decade; no significant progress has occurred elsewhere in Northern Africa.

UAR's wheat production is limited to soft varieties; in other North African countries, a much larger area is planted to durum wheat. Prior to independence, soft wheat production in western-tier countries was mostly on European farms. As the number of Europeans has declined in these countries, so has the importance of soft wheat varieties. Nevertheless, demand continues to expand due to the rapid expansion of the Muslim population and by their growing preference for soft wheat products rather than traditional barley.

To insure needed production, Egyptian farmers are required to plant at least one-third of their cultivated land to wheat each year. As a result, wheat production is distributed more evenly in UAR's agricultural areas than in those of other North African countries.

Sudan and Ethiopia have the greatest potential for increased wheat production, but they are not now large producers. However, only limited opportunities for expansion in the other countries mean that increased production is not likely to keep pace with growing demand. As a result, Northern Africa is likely to become an even larger importer of wheat and wheat flour in the near future than it has been in the past.

Barley.--Barley is a fall crop and a major competitor of wheat for acreage planted in cereals. But generally, wheat acreage has been expanded at the expense of barley. Nevertheless, barley continues as the region's second largest grain crop. In fact, the region accounts for approximately 5 percent of the world's total barley acreage. But North African production accounts for only about 3 percent. Yields only in the UAR exceed those of the United States and compare favorably with those of most European countries.

Northwest African countries use barley for both food and feed. Consumption elsewhere in the region is almost entirely for feed. In times of breadgrain shortage, however, it is not uncommon for barley to be mixed with wheat and other breadgrains to fill human needs.

Most barley is grown farther inland from the seacoasts than wheat. This is mainly because barley has a shorter growing season than wheat and also required less moisture. Only in the UAR is a significant amount of barley produced under irrigation.

Since 1952, regional barley production has increased very little (Appendix table 22). Barley exports from the area have decreased in importance in recent years. The production outlook in Northern Africa depends heavily on more extensive use for livestock feed. Substantial quantities will continue to be used for human food, but the trend towards barley's replacement by wheat as a food is likely to continue.

Sorghum.--Many varieties of grain sorghum are grown throughout Northern Africa. And in most cases, they are commonly known as durra. Some are natural hybrids; although sorghum is largely self-fertilized, considerable natural crossing has taken place through insect and wind pollination. On the other hand, limited natural crossing has produced straight-line color types in isolated areas of Ethiopia. In fact, recent findings indicate that some pericarp or seed coats in these areas may well have world-wide value in sorghum hybridization work.

Where available, statistics for sorghum production are often combined with those for millet. Thus, it is difficult to estimate Northern Africa's share of world sorghum production. The share would appear to be approximately 15 percent of the continent's total. The Sudan produces most of Northern Africa's sorghum; UAR is next (Appendix table 23). Production is confined mainly to the fringe areas of the Sahara. Yields fluctuate in accordance with the rainfall and often vary widely for the same year in different parts of the region.

When other grains are available for food, much of the sorghum is used for livestock feed. Successful storage of sorghum in ground pits for as long as 5 years has been reported in central parts of the Sudan.

Rice.--Rice is a minor crop in Northern Africa (Appendix table 24). Most production is in the UAR, where output has about doubled within the last decade. In 1964, the Egyptian rice crop amounted to over 2 million metric tons; after cotton, rice is the UAR's second export crop.

Programs are underway in other North African countries to expand rice production. Experiments have shown that rice can be grown economically on much of the swampland in the southern Sudan. Favorable results have also been reported in Ethiopia. Small quantities have been grown in Morocco, Algeria, and Tunisia for many years, but only within recent years have efforts been made to place production on a commercial basis. At most, these countries are expected to become only self-sufficient in rice in the near future.

Several countries in the region import small quantities of rice. But Egyptian exports far exceed the total annual quantity imported by other North African countries.

Corn.--Northern Africa's output of corn amounts to only a fraction of U. S. production. The UAR is the area's largest producer (Appendix table 25).

Corn is the principal food in the UAR's rural areas. Production is mostly for home consumption, with relatively small quantities entering commercial trade. Although all of the crop is produced under irrigation, annual average yields have only ranged between 30 and 40 bushels per acre during the last decade. It is widely believed that Egyptian corn yields would be greatly improved if the grain were allowed to mature fully before the leaves are removed from the stalk to be fed to livestock, a practice now common in many areas.

A large number of mixed varieties are grown. There is only a small acreage of hybrid corn, although it is being tried experimentally in several countries.

Some increase in production has been reported for the Sudan and Ethiopia. Nevertheless, corn will not likely increase much in importance throughout the region. Cultural requirements seriously limit the growing area, and corn is generally considered an inferior food.

Other grain.--Small quantities of several other grains are produced throughout the area. Teff, or teff lovegrass (Eragrostis abyssinica), is the principal foodgrain in Ethiopia. It is an annual indigenous grass cultivated for its seed, which is highly prized for making injera--the Ethiopian bread. In 1961, Ethiopia had an estimated area of 8 million acres planted to teff and produced 1.8 million tons.

Oats have not been very important in Northern Africa, although limited amounts have been grown, chiefly by Europeans, for livestock feed. Oats are likely to be even of less significance in the future.

Very limited amounts of millet and rye are also produced. Rye is grown in the coastal areas as a windbreak for vines. Some millet is grown for food and also for forage and industrial use in several countries. As it provides a small but certain yield, millet is sometimes grown in extremely dry periods when other crops fail.

Oilseeds

A variety of edible and inedible oilseeds are grown in Northern Africa. Most important are peanuts, sesame, cottonseed, nigerseed, linseed, and castor beans. Most oilseeds are produced in countries of the Nile Valley basin--the UAR, Sudan, and Ethiopia. For centuries, the western-tier countries of the region have preferred olive oil to other vegetable oils. Since World War II, however, seed oil has been used more extensively than olive oil, because it is much lower priced.

The area and production of most oilseeds have expanded considerably within the last decade (Appendix table 26). There were 264,000 metric tons of peanuts, sesame, and cottonseed exported from the region in 1961. In the same year, over 40,000 tons of cottonseed, peanut, and soybean oils were imported and the same amount of olive oil exported.

Sesame.--Sesame production in Northern Africa amounts to approximately 15 percent of the world's supply. After India, the Sudan is the second-ranking world producer. Northern Africa is likely to become even more important as a producer of sesame. In recent years, increasing foreign exchange has come from sesame and sesame cake exports, and the crop is fast becoming one of the area's more important cash crops.

Cottonseed.--Cottonseed is an important byproduct of the cotton industry in the UAR and Sudan. With the growth of this industry, output of cottonseed has increased in recent years. Production in these two countries is now equivalent to 25 percent of total U. S. output; this compares with less than 20 percent in 1952-54. The cotton industry is yet in its infancy in other North African countries, and so is the production of cottonseed.

Other oilseeds.--Ethiopian nigerseed (Guizotia abyssinica) is an indigenous oil crop grown generally in Ethiopia. It accounts for about half of all the country's oilseed production and provides the principal oil for cooking and making soap. Production is estimated at close to 110,000 metric tons a year. Peanuts have traditionally been produced in the Nile Valley; in recent years they have been grown in larger quantities throughout the region; only a small part of the crop is crushed for oil. Flaxseed and castorbeans are the principal inedible oilseeds. Both are produced in most North African countries, but Ethiopia leads in production of each. Partly this is because both crops are cultivated most commonly at elevations above 2,000 feet.

Fiber

Several types of fiber are grown in Northern Africa. But with the exception of cotton, output is small and of little importance in world trade. An estimated 9,000 metric tons of flax were produced in the area in 1962--mostly in the UAR. The region's production of sisal and hemp is even smaller than that of flax.

Northern Africa produced about 5 percent of the world's cotton crop of 49.7 million bales (10.8 million metric tons) in 1963. The bulk of the cotton crop is for export; the producing countries have limited textile and other cotton-using industries. The UAR, with annual production of over 2 million bales (435,000 metric tons), is the leading regional producer. The Sudan is next, with average production of 722,000 bales (157,700 metric tons) during 1961-63; 10 years earlier the Sudan's production was little more than one-half this amount (Appendix table 27). Of equal importance to the rate at which the Sudan has increased its cotton production lately is its potential for even greater expansion. Total production in both countries is limited almost entirely to long-staple cotton.

Programs are underway to expand the small cotton crops of Ethiopia and Morocco. Both countries import cotton and will continue to do so in the foreseeable future.

Fruits

Citrus.--Northern Africa accounts for approximately 6 percent of the world's citrus production and the industry is growing rapidly; production in 1961 was 1.3 million metric tons. Listed in order of quantities produced are: oranges, tangerines, clementines, lemons, and grapefruit. Morocco is the area's largest producer; Algeria is next in importance. However, should recent increases in UAR citrus production be maintained this country could well move into second place within the next few years.

Northern Africa's production should continue to increase for some years unless unfavorable climate or some other force should destroy producing acreage. Notable increases in citrus acreage within the last decade are reported for Morocco and the United Arab Republic. Due to political unrest, Algeria has made less progress. Present citrus production in Tunisia is thought to be near the country's capacity.

As production is expanded, exports from the area should continue to increase. Northern Africa is in a more favorable export position than most other major citrus-producing areas because of its nearness to the European market. More important is the climatic advantage which makes it possible for this area to have earlier maturing citrus.

Grapes and wine.--Northern Africa accounts for close to 10 percent of the world's grapes produced for wine. Commercial grape production is limited to countries bordering the Mediterranean Sea. Algeria is first in output (Appendix table 28). The largest percentage of Algerian grapes is made into wine locally and the wine is exported to Europe--mainly to France. In fact, Algeria alone accounts for 50 percent of all wine entering international trade. Many of the larger groves owned by Europeans prior to independence have since been nationalized, divided, and redistributed.

Olives and olive oil.--Production of olives fluctuates in a regular biennial cycle. Northern Africa's exports of olive oil are substantial in "on" years; imports are required in seasons of reduced yields.

The largest portion of the olive crop is used for making oil; pressing methods have improved greatly. Some primitive oil presses are still in use, but these are being replaced by modern hydraulic presses.

Due to the relative high price for olive oil on the world market, a larger portion of the annual crop is usually exported and increasing quantities of vegetable oils imported to meet local needs. After Spain, Tunisia is usually the world's leading exporter of olive oil and among the largest producers. Appendix table 29 gives data on Northern Africa's olive and olive oil production

Fruits and nuts.--Northern Africa is among the world's leading producers of dates. The main centers of production are along the Nile and in the oases scattered throughout the region. Only a small quantity enters international trade.

In the 5 years ending in 1964, the UAR had an average annual date production of 376,000 metric tons. Most of the large quantity produced is consumed locally. The area as a whole is on a net export basis, due mainly to Algeria's annual exports.

Other fruits and nuts grown in parts of Northern Africa include figs, bananas, almonds, apricots, plums, peaches, cherries, and apples. Production of all is on a small scale and of little importance in commercial trade. Except for bananas in Somalia, they are grown mostly to meet local needs. Small quantities of deciduous fruits are often imported for sale in city markets.

Coffee

While most countries of Northern Africa are coffee importers, the product is Ethiopia's chief cash crop and leading export. Coffee production in Ethiopia has more than doubled the pre-World War II output and still can be greatly expanded. Ethiopia produces close to 10 percent of all coffee grown in Africa, or 2 percent of the world total. Ethiopia is believed to be the original home of Coffea arabica, and a large percentage of the crop comes from wild trees; only a few plantations are cultivated.

Livestock

Northern Africa's livestock industry is generally considered to be far below its potential. In most countries of the region, livestock population is large in relation to the number of inhabitants. But output in all countries is low; the condition of livestock is usually poor. This is particularly true during and after the rainless summer months. Serious droughts often cause enormous animal losses. Although the expansion of cultivated area during the past decade has reduced the area of pastureland, the number of animals has become larger, and most grassland is seriously overgrazed. But with improved pasture management--including provision for additional watering points, rotation of grazing area to prevent overgrazing, and conservation of feed to provide for periods of shortage--the available grazing area could support many more animals than at present.

Exact numbers of the livestock population in individual countries are generally not known. For the most part, facilities for making an accurate census of livestock numbers are not available. Thus, data in Appendix table 33 must be considered as rough approximations. Some are based on tax records; in other cases, these figures probably do not include livestock numbers in the Sahara territories.

With about half of its land area in meadows and natural pastures, Ethiopia has a livestock population estimated at close to 65 million head (mainly cattle, sheep, and goats). This is believed to be nearly one-third of the region's total. The Sudan has an estimated total of about 24 million head. Yet, various studies have emphasized that with improved practices the livestock industry in both countries could be greatly upgraded and expanded.

Most North African farmers combine crop cultivation with livestock grazing, and are totally dependent on neither the agricultural nor the pastoral economy. However, nomadic tribes, on a smaller scale than those found in West Asian countries, are common throughout the Somalilands and parts of Ethiopia, Libya, Morocco, and the Sudan. Even settled farmers often find it necessary to graze their livestock on collective pastureland many miles from their village.

In most countries of Northern Africa, sheep lead by far in livestock numbers. Wool and meat are the primary products; sheep's milk is of considerable importance in the diet of the herdsmen and their families. In the UAR, however, sheep numbers are only about half of those for cattle and buffaloes. This is partly explained by the fact that Egyptian livestock are without a natural grazing area and must depend almost entirely upon a single forage crop--berseem, the high-yielding Egyptian clover grown under irrigation--and crop residues for feed. As a result, all livestock numbers must be kept to a minimum. With an extremely limited agricultural area and under the prevailing climatic conditions, the Egyptian farmer has found that cattle and buffaloes best serve the multiple purposes of providing milk, meat, and draft power.

Throughout much of Northern Africa, precipitation is so limited and vegetation so sparse that sheep and goats are the only practicable livestock. Moreover, their grazing area must be confined to the rougher lands; much of this area is adequate for grazing only during the rainy season. Fat-tailed sheep dominate; they are hardy and well adapted. Small quantities of their coarse wool are exported, but most of it is used locally. Most of the goats are of a small native breed, with long brown or black hair.

Although usually outnumbered by sheep, cattle are first in economic importance. For centuries, the cow has been the main source of draft power in Northern Africa. Cattle have not made as great an economic contribution as they might have. Many herdsmen consider cattle as a symbol of wealth and are loath to part with them.

Since busses and trucks now link up villages, the traditional camel caravan has become a thing of the past. However, after the donkey, the camel is still important in helping move supplies and commodities about the village. In addition, donkeys and camels are used for draft purposes on many farms. Camels continue to play their greatest role in areas where grazing and water supplies are inadequate for other classes of livestock.

Poultry are found wherever there is settled farming. Swine are of little economic importance in Northern Africa, since Islam (the Moslem religion) forbids the raising as well as the consumption of pork.

Exports of hides and skins make a decided contribution to various North African countries' foreign exchange earnings. Trade in live animals to countries outside the area is predominately with Saudi Arabia. On the other hand, the UAR provides a sizable market for live animals from the Sudan and Libya. Several attempts have been made within recent years to establish a market in southern Europe for meat produced in Northern Africa.

INTERNATIONAL TRADE IN AGRICULTURAL PRODUCTS

Northern Africa has been a traditional exporter of agricultural commodities. These exports, although not of sufficient magnitude to accommodate the area's growing needs, are helping several countries modernize their economies. By broadening foreign exchange reserves, agricultural exports have helped to stabilize and extend the money economy. In addition, they have provided capital both for the purchase of consumer goods of foreign manufacture and for the extension of economic development projects.

Although petroleum is becoming an important export earner for the region, its benefits are restricted to a few countries. Exports of most countries of the area, especially those with large populations, are derived from agriculture. Three countries, the UAR, the Sudan, and Ethiopia, contain approximately two-thirds of the area's total population, and each depends upon agriculture for over 75 percent of all export earnings. Moreover, a single commodity accounts for the largest portion of these exports in each country. This situation in turn helps to illustrate some of the urgent problems faced by Northern Africa in maintaining economic stability.

Over the last decade, the volume of agricultural exports from the region has risen steadily. On the other hand, total export earnings from agriculture have remained fairly stable due to a continuous decline in world prices of agricultural products (Appendix table 34). Also, a series of drought years, along with the rising demand for cereals within the region, has led to a sharper fall in the share of grains in total export earnings during this period.

Composition of Foreign Trade

Exports.--Northern Africa's position as a net exporter of agricultural products is entirely based on the importance of agricultural raw materials, mainly cotton, in the export structure. In total, about two-thirds by value of all goods exported from Northern Africa has been of agricultural origin. Cotton has continuously been the principal export commodity. While fruits, vegetables, and oilseeds have grown in importance, their gains have been offset by smaller exports of grain. Thus, there has been little change in the region's overall returns from agricultural exports during the past 10 years. The total value of agricultural shipments from Northern Africa in 1961 was placed at \$1.1 billion, or at the same level as was reported for 1955.

Although table 12 gives data only for 1961, except for the previous trends indicated it gives a fairly accurate picture of the export situation by country and principal commodity that has prevailed since 1955. Cotton exports from the UAR and the Sudan accounted for 36 percent by value of the region's total agricultural exports in 1961. Wine, mostly from Algeria, was next in importance, accounting for slightly over 20 percent of the agricultural total. Fruits (mainly citrus), olive oil and oilseeds, and fresh vegetables, in that order, were next of importance. They were followed by coffee, Ethiopia's main foreign exchange earner. Hides and skins accounted for only 2 percent of regional exports of farm products. But on an individual country basis--as in Algeria, Ethiopia, and the Sudan--they were much more significant.

The United Arab Republic accounted for 35 percent of all the region's agricultural exports in 1961, compared to 33 percent in 1955. Next in importance in 1961 was Algeria, with some 27 percent, and the Sudan, with 16 percent.

Table 12.--Northern Africa: Exports of principal agricultural commodities, by country, 1961

Country	Cotton	Wine	Fresh : vege- : tables	Fruit	Oil : : and oil- : seeds l/	Feed : : and : grains	Coffee	Wheat : : and wheat : : flour	Hides : : and : skins	Other : : agri- : cultural	Total : : agri- : cultural	Total : : exports	Agricultural as : percentage of : total exports	Percent
						Million dollars								
Algeria.....	.4	189.5	17.0	33.5	2/	4.5	--	5.6	8.0	27.0	285.5	675.0	42	
Ethiopia.....	--	--	.1	1.3	9.7	--	37.8	--	8.7	13.2	70.8	72.4	98	
Libya.....	--	--	--	.4	3.4	--	--	--	1.2	.6	5.6	18.3	31	
Morocco.....	1.8	11.3	30.8	42.5	.2	3.7	--	.3	--	16.4	107.0	342.5	31	
Sudan.....	89.5	--	.7	.3	39.7	5.9	--	--	3.0	29.2	168.3	178.5	94	
Tunisia.....	--	19.1	.3	5.6	23.1	--	--	5.3	1.3	5.5	60.2	110.3	55	
UAR.....	300.2	--	16.8	1.8	4.2	3/20.7	--	--	--	31.0	374.7	484.7	77	
Total 1/..:	391.9	219.9	65.7	85.4	80.3	34.8	37.8	11.2	22.2	122.9	1,072.1	1,861.7	57	

1/ Includes olive oil, cottonseed oil, and oilseeds.

2/ If any, not listed separately.

3/ Includes rice exports.

4/ Omits French Somaliland, Somali Republic, Ifni, and Spanish Sahara.

Table 13.--Northern Africa: Imports of principal agricultural commodities, by country, 1961

Country	Wheat & wheat : flour	Dairy : products	Tea	Oil : and : oilseeds	Meat	Coffee	Tobacco	Vege- : tables	Other : : cultural	Total : : agri- : cultural	Total : : imports	Agricultural as : percentage of : total imports	Percent
						Million dollars							
Algeria.....	36.8	40.7	2.8	30.2	14.5	16.6	5.9	8.7	27.6	220.2	1,024.0	22	
Ethiopia.....	.8	.9	.7	.2	--	--	--	--	6.3	9.2	91.9	10	
Libya.....	4.6	1.6	4.0	1.9	.6	.3	.3	.9	4.1	20.7	149.2	14	
Morocco.....	23.3	5.6	11.2	3.7	--	2.9	1.7	2.2	6.7	93.8	445.7	21	
Sudan.....	6.3	--	10.2	--	--	3.4	--	1.6	3.4	36.5	237.8	15	
Tunisia.....	26.9	3.2	4.4	1/	1.1	1.2	1.1	1.5	14.1	60.0	210.6	28	
UAR.....	78.1	1.7	24.0	5.9	5.4	4.0	14.4	1.2	24.2	165.6	683.3	24	
Total 2/..:	176.8	100.4	54.3	42.1	21.7	28.4	23.4	16.1	85.5	606.0	2,842.5	21	

1/ If any, not listed separately.

2/ Omits French Somaliland, Somali Republic, Spanish Sahara, and Ifni.

A significant development in the region's trade pattern in recent years has been the expanding volume of bilateral trade with East European countries and Communist China, and a declining proportion of exports to Western Europe, formerly the traditional market for Northern Africa's agricultural exports. The most outstanding change has been for cotton. In 1955, slightly less than 25 percent of Northern Africa's cotton exports were to East European countries and Communist China, as compared with close to 60 percent for 1960-61. While the proportional change for other commodities has not been this great, increasing reliance has been placed on the Sino-Soviet Bloc as a market for the region's other surplus agricultural products.

Imports.--Northern Africa's total imports increased 40 percent, by value, between 1955 and 1961. During this period, agricultural commodities accounted for approximately 20 percent of all imports, and showed practically the same rate of increase as that for total imports (Appendix table 35).

The region's food deficit has continued to increase ever since World War II. Table 13 illustrates the current pattern of agricultural imports into principal North African countries. Wheat and wheat flour constitute the most important group, followed by sugar, dairy products, and tea. In 1961, these items accounted for almost two-thirds of the value of all food and agricultural imports. Other usual imports include a wide variety of products; however, the relative value of individual items or groups is small.

The UAR is the region's largest importer of breadgrains, although by value, Algeria led in imports of all agricultural products between 1955 and 1961. On a per capita basis, Libya with its small population is second to Algeria. With growing foreign exchange holdings from increased petroleum sales, Libya is likely to take the lead soon. Ethiopia, practically self-sufficient in food production, imports the least, by value. The value of trade on a per capita basis is given in table 14.

A large part of regional grain imports, mostly wheat and wheat flour, comes from the United States under special Government programs. Imports of U. S. feed grains, dairy products, and vegetable oils are increasing. In addition to the United States, Southern European countries have traditionally been the main suppliers of agricultural products to Northern Africa. Far Eastern countries have been the leading source of tea. Ethiopia and several other African countries have been the main suppliers of coffee.

Intraregional trade.--Lack of data hampers analysis of trade among North African countries. Even so, it is known to be at a low level. Although efforts are being made to promote regional economic cooperation, intraregional trade has made less than satisfactory progress in recent years. Lack of progress results partly from inadequate communication and transport facilities in the area. Present facilities largely reflect those established in the past to serve international rather than regional trade.

Trade in cereals appears to provide the best opportunity for expanded intraregional trade. The Sudan, Morocco, Algeria, and Tunisia often have grains for export. Import requirements for cereals in the UAR have been rapidly expanding in recent years. At the same time, grain harvests in major surplus-producing countries are often greatly reduced as a result of total or partial crop failures. Thus, sharp fluctuations in export supplies of the main grain-producing countries of the region apparently constitute a serious obstacle to the development of intraregional trade. The availability of breadgrains from the United States under special Government programs in recent years has also tended to reduce the need for intraregional trade in these commodities.

Table 14.--Northern Africa: Value of trade, per capita, 1961

Country	Exports		Imports	
	Agricultural:	Total	Agricultural:	Total
	Dollars			
Algeria.....	25	33	20	91
Ethiopia.....	4	4	1/	5
Libya.....	5	15	17	124
Morocco.....	9	23	8	37
Sudan.....	14	15	3	20
Tunisia.....	14	26	14	50
UAR.....	14	17	6	26

1/ Less than \$1.

Probably the largest flow of trade within the region is in live animals for slaughter. This still is largely border trade between neighboring countries; it fluctuates considerably from year to year according to pasture conditions. The most constant trade in live animals is from the Sudan and Libya to the UAR. In addition to livestock, these countries supply the UAR with oilseeds and in return receive rice. A noticeable trade pattern has developed between Morocco and Algeria. Morocco supplies Algeria with vegetables, citrus, grains, fruit, and wool in return for Algerian tobacco, dates, and hides and skins.

Market for and Competition with U. S. Farm Products

Northern Africa has provided a growing outlet for U. S. agricultural exports. The region took close to 5 percent of total U. S. farm exports in 1963, or an amount valued at \$241.4 million. This compares with shipments valued at only \$43.2 million in 1955. In 1963, some 70 percent of these exports were composed of wheat and wheat flour. Of lesser importance were vegetable oils and fats, feedgrains, tobacco, and tallow. The breakdown by country for commodities from the United States in 1963 is given in table 15. Similar data for 1955-63 are in Appendix table 36.

Because of the dollar shortage in most countries of Northern Africa, the largest percentage of the imports from the United States moves under special Government programs. The total market value, excluding the cost of ocean transportation, of all shipments under Title I, Public Law 480, from July 1, 1954, through June 30, 1964, amounted to \$794.0 million. The value of commodities received on a country basis during this period is given in table 16.

North African countries have also received substantial quantities of food through relief or charity programs (provided through grants under Title III, Public Law 480). For fiscal 1964, these shipments were valued at \$49.7 million.

The special concessions under which these commodities were made available have undoubtedly helped establish a market for U. S. farm products in Northern Africa. However, it is doubtful that U. S. shipments to the area could be maintained at present levels should they not continue to be made available under the Food for Peace program. This is particularly true in view of the worsening financial position of the UAR, the area's major recipient of U. S. agricultural exports. On the other hand, increased oil exports from Algeria and Libya, along with continued economic progress in the Sudan and Ethiopia, should make for an expanded dollar market in the area. The net result is likely to be a gradual expansion in dollar sales to the area.

Table 15.--U. S. agricultural trade with Northern Africa, by country, 1963 1/

Exports to	Wheat		Other		Tallow	Cotton	Tobacco	Veg.		Oilseeds	Dairy		Other	Total		Total
	& wheat flour	grain	grain	prep.				oil & fat	products		agri-cultural	agri-cultural		agri-cultural	agri-cultural	
	1,000 dollars															
Algeria.....	20,901	--	19	76	85	--	18	4,182	--	1,932	2,220	29,433	15,132	144,565		
Ethiopia.....	233	--	294	--	1,725	--	--	14	--	229	249	2,744	9,277	12,021		
Fr. Somaliland..	90	--	34	--	--	--	--	--	--	--	76	200	778			
Libya.....	5	--	58	--	--	--	173	35	1	44	1,603	1,919	41,466	43,385		
Morocco.....	17,079	--	18	1,399	1,168	--	317	11,357	815	568	3,838	36,559	19,601	56,160		
Somali Rep. 2/..	--	--	370	--	--	--	--	18	--	18	52	458	1,758	2,216		
Sudan.....	5,976	--	13	--	--	--	--	--	4	29	68	6,090	9,932	16,022		
Tunisia.....	8,947	--	836	--	229	--	445	3,682	--	239	316	14,748	11,152	25,900		
UAR.....	115,481	--	11,480	8,217	--	--	10,220	641	--	2,293	933	149,265	60,161	209,426		
Total.....	168,712	--	13,122	9,692	3,207	11,173	19,929	820	5,406	9,355	241,416	169,257	410,672			

Imports from	Coffee	Cotton	Hides		Wool & animal		Drugs, herbs and spices	Beeswax	Sesame seed	Other		Total		Total
			and skins	and skins	hair	hair				agri-cultural	agri-cultural	agri-cultural	agri-cultural	
	1,000 dollars													
Algeria.....	--	--	--	63	--	--	193	--	--	25	281	561	842	
Ethiopia.....	31,953	--	1,150	--	--	2	275	269	123	123	33,772	1,493	35,265	
Fr. Somaliland..	182	--	--	--	--	7	10	--	25	224	45	269		
Libya.....	--	--	--	--	1	--	--	--	--	--	1	15,985	15,986	
Morocco.....	--	--	107	197	664	460	7	0	599	2,034	4,553	6,587		
Somali Rep.....	--	--	180	--	--	--	--	--	--	180	464	644		
Sudan.....	--	692	313	--	--	78	15	--	--	1,098	3,858	4,956		
Tunisia.....	--	--	--	699	7	35	--	--	4	745	234	979		
UAR.....	--	10,828	176	--	32	4	91	--	306	11,437	9,775	21,212		
Total.....	32,135	11,520	1,926	959	704	779	398	269	1,082	49,772	36,968	86,740		

1/ Includes shipments under food for relief or charity.
 2/ Includes data for former British and Italian Somaliland.
 -- = None, negligible, or not applicable.

Except for coffee, the United States generally has surplus quantities of the agricultural products normally exported by Northern Africa. As a result, the value of U. S. farm imports from the region has been small. Such shipments had an average annual valuation of \$53.4 million during 1955-57. This compared with \$49.8 million in 1963 (Appendix table 37). The value by commodities imported during 1963 is given in table 15. While there has been some variation among various commodity groups, the overall picture has remained practically unchanged, except for a continued decline in the value of cotton imported from Northern Africa.

Coffee alone has accounted for 64 percent of U. S. agricultural imports by value in recent years and has come solely from Ethiopia. Cotton from the UAR and the Sudan has been next in importance, followed by hides and skins and olive oil.

Northern Africa offers competition to U. S. farm products in world markets mainly in cotton, citrus, oilseeds, and vegetable oils. Although the area normally exports small quantities of grain, in recent years they have provided little competition to U. S. foreign trade. Vegetable oil exports from the area are limited almost solely to olive oil, the quantity of which varies greatly from year to year. Sizable quantities of oilseeds are exported from Northern Africa to Europe. Even so, the region remains not only a net importer of vegetable oils and animal fats, but also of breadgrains.

Competition between Egyptian and American upland-type cotton is indirect and occurs usually when extra-long staple cotton prices are severely depressed, as in 1959. Egyptian cotton has a longer staple length than the U. S. upland crop, and thus is usually more expensive. Nevertheless, if severe difficulties are encountered in the world's cotton markets in the future, the UAR and the Sudan might be encouraged to undersell cotton from the United States, due to the great dependence of their economies upon cotton exports. On the other hand, the small quantity of short-staple cotton exported annually by the Sudan is competitive with U. S. cotton on the world market.

Northern Africa's citrus industry provides limited competition to U. S. fruit exports to Europe. The area enjoys certain export advantages in West European markets because of its geographical location; climatic conditions in the citrus-producing areas of North Africa are such that early-maturing varieties can be produced.

Table 16.--Northern Africa: Value of farm commodities received from the United States under Title I, Public Law 480, July 1, 1954, through June 30, 1964

Commodity	Ethiopia	Morocco	Sudan	Tunisia	UAR	Total
	Million dollars					
Wheat and wheat flour....:	--	12.7	19.8	20.3	532.5	585.3
Feedgrain.....:	--	--	--	4.5	53.1	57.6
Rice.....:	--	--	--	--	5.3	5.3
Cotton.....:	.9	.8	--	.9	--	2.6
Tobacco.....:	--	.2	--	--	47.7	47.9
Dairy products.....:	--	--	--	--	2.7	2.7
Fats and oils.....:	--	6.0	--	7.8	75.2	89.0
Other.....:	--	--	--	.1	3.5	3.6
Sub total.....:	.9	19.7	19.8	33.6	720.0	794.0
Ocean transportation ^{1/}:	--	2.3	4.1	4.3	95.6	106.3
Market value ^{2/}:	.9	22.0	23.9	37.9	815.6	900.3
Estimated CCC Cost ^{2/}:	1.5	29.6	34.1	50.7	1,129.7	1,245.6

^{1/} Includes only ocean transportation to be financed by the Commodity Credit Corp.

^{2/} Includes ocean transportation.

Table 17.--Northern Africa: Approximate quantities of farm commodities under Title I, Public Law 480, agreements signed, calendar years 1962 and 1963

Commodity	1962				1963				
	Morocco	Tunisia	UAR	Total	Ethiopia	Sudan	Tunisia	UAR	Total
	: - - - - - 1,000 metric tons - - - - -								
Wheat and wheat flour..	204	146	5,253	5,603	--	76	--	--	76
Feedgrain.....	--	33	500	533	--	--	--	--	--
Rice.....	--	--	--	--	--	--	--	--	--
Cotton.....	1.1	--	--	1.1	1.3	--	--	--	1.3
Tobacco.....	.2	--	4.5	4.7	--	--	--	1.2	1.2
Dairy products:	--	--	1.8	1.8	--	--	--	--	--
Fats and oils..	25.3	18.3	27.3	70.9	--	--	14	--	14
Poultry.....	--	--	2.1	2.1	--	--	--	--	--
Dry edible beans.....	--	--	--	--	--	--	--	1/	1/

1/ Less than 50 metric tons.

Source: The White House's Twentieth Semi-annual Report on Public Law 480 to Congress.

DOMESTIC FOOD CONSUMPTION

The provision of an adequate diet for its people is one of the major problems of North African governments. A study by the U. S. Department of Agriculture indicates a regional average daily per capita supply of slightly over 2,200 calories for the 1959-61 period (table 18). This compares with a U. S. level of about 3,200 calories daily--about 50 percent greater.

Recommended minimum levels of consumption for various North African countries average about 2,350 calories per capita daily. Only two countries--Libya and Algeria--approach or exceed the minimum. Although progress is evident in a few countries, little improvement has been made within recent years in the region's overall consumption pattern. Food availability is likely to increase both from greater imports and higher indigenous production, but much of the gains will be absorbed by population growth. At present, net food imports supply over 25 percent of the region's daily per capita calorie supply. Furthermore, this percentage is expanding steadily; presently, only Ethiopia and Sudan import less than 10 percent of their food needs.

Table 18.--Northern Africa: Daily calorie consumption per capita, by food classes, by country, average 1959-61

Country	Cereal	Starchy	Sugar	Pulses	Other	Fats &	Meat,	Milk &	Total
	products	crops	:	:	fruits & vegetables	oils	fish & eggs	cheese:	
	: - - - - - Calories - - - - -								
Algeria.....	1,495	61	207	65	156	148	71	123	2,330
Ethiopia.....	1,432	8	30	243	24	91	129	153	2,110
Libya.....	1,284	39	266	59	385	178	66	80	2,360
Morocco.....	1,312	16	295	101	93	166	126	98	2,210
Sudan.....	1,300	37	127	140	57	228	82	196	2,170
Tunisia.....	1,092	18	197	71	239	123	89	74	1,900
UAR.....	1,627	31	136	88	181	121	66	49	2,300
Total ^{1/} ..	1,446	28	147	127	119	140	92	111	2,210

1/ Weighted average.

NORTHERN AFRICA: Food Consumption Compared With the United States

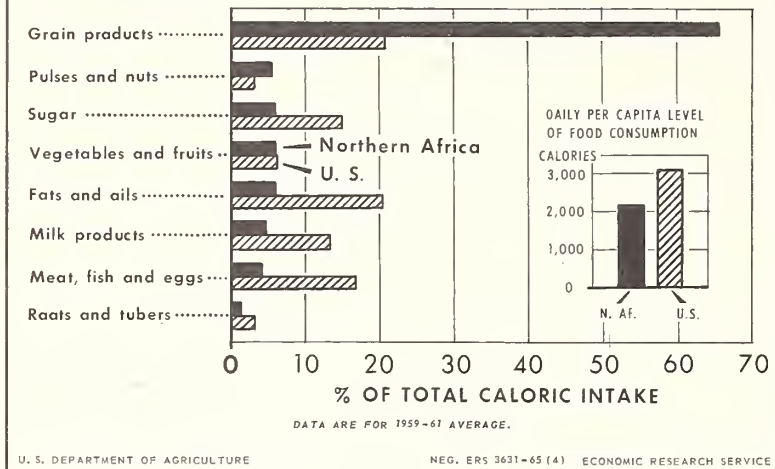


Figure 3

proteins in the daily North African diet comes from livestock products as compared with 65 percent of the 95.3 grams of protein in the average American's daily diet. In contrast, proteins from pulses are more important in the North African diet than in the United States. The widest difference, however, is in the amount of fat in each diet--40.6 grams in Northern Africa compared with 146.3 grams in the United States. Nutritional deficits--calories, proteins, and fats--for individual North African countries are given in table 20.

Table 19.--Northern Africa: Population, average daily food supply per person, by country, average 1959-61

Country	Population Million	Calories Number	Protein			Fat Grams
			Total Grams	Animal Grams	Pulses Grams	
Algeria.....	11.0	2,330	63.7	12.6	3.3	46.1
Ethiopia.....	18.8	2,110	70.0	25.6	13.8	31.4
Libya.....	1.2	2,360	57.5	9.4	3.4	52.5
Morocco.....	11.6	2,210	66.6	15.6	5.6	45.0
Sudan.....	11.8	2,170	72.2	20.8	9.1	57.3
Tunisia.....	4.2	1,900	50.9	9.8	3.2	46.7
UAR.....	25.9	2,300	70.2	12.9	5.5	33.8
Total and average.....	84.8	2,210	68.0	17.0	7.4	40.6
United States....	179.9	3,190	95.3	63.8	4.8	146.3

Lacking both variety and abundance, the diet of the majority of North Africans is dominated by grains (fig. 3). Cereal products alone account for two-thirds of the total calories consumed as compared with less than 25 percent in the United States. Sugar, fats and oils, and pulses are next in importance. Wheat is the predominant grain for all except the Sudan and Ethiopia. Durra, a grain sorghum, is the principal food in the Sudan; teff, a native grain, is of first importance in Ethiopia (table 19).

The poor quality of the North African diet is further indicated by the low protein level and the small percentage of animal protein. Only 25 percent of the 68.0 grams of

Table 20.--Northern Africa: Daily nutritional deficits per person, by country, average 1959-61.

Country	Calories	Protein			Fat
		Animal	Pulse	Other	
	Number	Grams	Grams	Grams	Grams
Algeria.....	20	0	4.1	0	0
Ethiopia.....	240	0	0	0	13.1
Libya.....	0	0.6	7.2	0	0
Morocco.....	140	0	0	0	0
Sudan.....	180	0	0	0	0
Tunisia.....	450	0.2	7.0	1.9	0
UAR.....	50	0	1.6	0	6.0
Weighted average:	140	0.1	1.5	0.1	3.7

Since production of commercial crops for export has received greater attention in recent years, much of the area's rural population does not raise sufficient food for its own consumption. Likewise, the growing movement of people to urban centers has made for larger food imports.

Although complete data on food consumption over an extended period of time are not available, it is, nevertheless, possible to observe some of the more obvious shifts in the present consumption pattern.

The production pattern remained quite steady for years prior to World War II. The area, then a net exporter of breadgrains, is now a net importer of foodgrains, largely wheat. The importance of wheat in the diet has increased relative to coarse grains and other staples. This trend is likely to continue, creating a need for increased quantities from abroad.

As per capita income in the region rises, other pronounced shifts are likely. According to recently established coefficients of income elasticities for the area, greatest increases can be expected for meats, dairy products, and eggs. Some rise is also anticipated for fruits and vegetables, though at a more modest rate than for livestock products. Increased local production of livestock products is not likely to keep pace with growing demand; thus, larger imports will be needed.

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Table 21.--Northern Africa: Wheat production, acreage and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 : average :	1955 :	1956 :	1957 :	1958 :	1959 :	1960 :	1961 :	1962 :	1963 :	1964 1/
Algeria:												
Production.....	1,000 M.T.:	1,225	1,306	1,536	1,359	1,129	1,105	1,497	659	1,495	1,580	1,200
Acreage.....	1,000 acres:	4,545	4,688	4,950	4,745	4,409	4,300	4,742	4,159	4,630	4,990	2/
Yield per acre....	Bushels :	9.9	10.2	11.4	10.5	9.4	9.6	11.6	5.8	11.9	11.6	--
Ethiopia:												
Production.....	1,000 M.T.:	168	184	181	154	151	180	147	165	255	260	2/
Acreage.....	1,000 acres:	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Yield per acre....	Bushels :	--	--	--	--	--	--	--	--	--	--	--
Libya:												
Production.....	1,000 M.T.:	12	20	16	45	44	38	37	41	33	38	27
Acreage.....	1,000 acres:	2/	49	124	161	380	452	448	259	314	2/	2/
Yield per acre....	Bushels :	--	15.4	4.7	10.3	4.2	3.1	3.0	5.8	3.9	--	--
Morocco:												
Production.....	1,000 M.T.:	1,074	964	1,055	695	1,281	955	1,067	634	1,247	1,195	1,195
Acreage.....	1,000 acres:	3,786	4,110	3,594	3,532	4,520	4,226	4,063	3,772	3,677	4,084	3,917
Yield per acre....	Bushels :	10.3	8.4	10.8	7.3	10.4	8.3	9.6	6.2	12.5	10.7	11.2
Sudan:												
Production.....	1,000 M.T.:	17	17	18	14	20	27	27	30	27	30	37
Acreage.....	1,000 acres:	30	30	30	25	27	35	40	40	2/	2/	2/
Yield per acre....	Bushels :	20.9	20.9	22.0	20.5	27.2	28.3	24.8	27.5	--	--	--
Tunisia:												
Production.....	1,000 M.T.:	630	395	477	498	520	525	452	245	395	653	351
Acreage.....	1,000 acres:	2,747	2,532	2,934	3,199	3,169	3,280	3,347	2,327	2,095	2,790	2,600
Yield per acre....	Bushels :	8.5	5.9	5.9	5.9	6.0	5.9	5.0	3.7	6.9	8.6	6.2
UAR:												
Production.....	1,000 M.T.:	1,455	1,451	1,541	1,467	1,417	1,442	1,499	1,437	1,593	1,500	1,600
Acreage.....	1,000 acres:	1,724	1,581	1,630	1,571	1,480	1,531	1,512	1,436	1,510	1,453	1,557
Yield per acre....	Bushels :	30.9	33.8	34.7	34.2	35.1	34.5	36.4	36.8	38.9	37.9	37.8

1/ Preliminary.

2/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 22.--Northern Africa: Barley production, acreage and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 : average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/
Algeria:												
Production.....	1,000 M.T.:	958	693	1,023	616	780	642	849	327	800	950	2/
Acreage.....	1,000 acres:	3,317	3,302	3,418	3,152	2,974	2,692	2,882	2,200	2,420	2,965	2/
Yield per acre....	Bushels	13.3	9.6	13.8	9.0	11.9	11.0	13.3	6.9	14.0	14.7	--
Ethiopia:												
Production.....	1,000 M.T.:	222	300	350	294	519	552	551	570	590	590	525
Acreage.....	1,000 acres:	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Yield per acre....	Bushels	--	--	--	--	--	--	--	--	--	13.6	--
Libya:												
Production.....	1,000 M.T.:	36	73	126	153	109	109	120	100	111	113	87
Acreage.....	1,000 acres:	247	494	593	573	1,008	1,163	1,776	936	958	700	680
Yield per acre....	Bushels	6.9	6.9	9.6	12.4	5.1	4.1	3.1	4.9	5.3	7.4	5.9
Morocco:												
Production.....	1,000 M.T.:	1,791	1,248	1,634	796	1,590	1,096	1,136	544	1,197	1,459	996
Acreage.....	1,000 acres:	5,427	4,826	4,604	3,853	4,834	4,293	4,594	3,825	3,793	4,779	4,497
Yield per acre....	Bushels	15.2	11.9	16.3	5.9	15.1	11.7	11.4	6.5	14.3	14.0	10.2
Sudan:												
Production.....	1,000 M.T.:	1	2	2	1	1	1	1	2	2	2	2
Acreage.....	1,000 acres:	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/	2/
Yield per acre....	Bushels	--	--	--	--	--	--	--	--	--	--	--
Tunisia:												
Production.....	1,000 M.T.:	234	81	156	185	282	235	146	87	103	260	130
Acreage.....	1,000 acres:	1,810	1,339	1,798	2,001	1,986	1,949	1,736	1,000	800	1,450	1,500
Yield per acre....	Bushels	6.0	2.9	4.1	4.1	6.5	5.5	3.9	4.1	5.9	8.2	4.0
UAR:												
Production.....	1,000 M.T.:	112	127	129	131	135	141	155	133	146	161	135
Acreage.....	1,000 acres:	128	141	136	138	141	146	153	126	135	125	129
Yield per acre....	Bushels	40.0	41.3	43.6	43.6	44.1	44.6	46.0	48.7	49.4	59.2	48.1

1/ Preliminary.

2/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 23.--Northern Africa: Sorghum and millet production, acreage and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 : average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964
Algeria:												
Production.....	1,000 M.T.:	10	8	9	8	4	2	1	1	1	1	1
Acreage.....	1,000 acres:	42	35	35	32	15	7	7	3/	3/	3/	3/
Yield per acre....	Bushels	10.8	10.3	11.7	11.2	12.2	13.2	6.3				
Ethiopia:												
Production 2/.....	1,000 M.T.:	1,586	1,714	1,680	1,695	1,892	1,815	1,960	2,100	2,095	2,095	3/
Acreage.....	1,000 acres:	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Yield per acre....	Bushels	--	--	--	--	--	--	--	--	--	--	--
Libya:												
Production.....	1,000 M.T.:	.2	1.2	4.3	3.0	2.8	1.3	5.0	5.2	5.3	5.3	3/
Acreage.....	1,000 acres:	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Yield per acre....	Bushels	--	--	--	--	--	--	--	--	--	--	--
Morocco:												
Production.....	1,000 M.T.:	52	43	20	106	82	81	40	76	98	98	69
Acreage.....	1,000 acres:	417	217	225	370	311	3/	267	309	405	405	300
Yield per acre....	Bushels	5.4	9.0	4.0	13.0	11.9	--	6.7	11.2	9.5	9.5	9.1
Sudan:												
Production.....	1,000 M.T.:	923	1,417	1,235	1,329	1,589	1,330	1,600	1,590	1,625	1,625	1,638
Acreage.....	1,000 acres:	3,083	4,811	4,308	4,542	4,192	4,150	4,273	4,211	4,236	4,236	4,200
Yield per acre....	Bushels	13.5	13.0	13.0	13.0	17.1	14.4	16.7	17.1	17.1	17.1	17.9
Tunisia:												
Production.....	1,000 M.T.:	1	3	3	3	5	3*	2	4	4	4	4
Acreage.....	1,000 acres:	7	45	45	39	39	37	40	40	39	39	40
Yield per acre....	Bushels	6.3	2.7	2.7	3.6	5.8	3.6	2.2	4.4	4.7	4.7	5.8
UAR:												
Production.....	1,000 M.T.:	551	537	566	543	630	603	631	630	675	675	663
Acreage.....	1,000 acres:	477	455	467	440	485	470	474	472	539	539	474
Yield per acre....	Bushels	51.8	53.1	54.4	55.4	58.3	57.6	59.8	60.0	55.2	55.2	64.3

1/ Preliminary.
2/ Mostly teff.
3/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 24.--Northern Africa: Rice production, acreage and yield, 1952-54 and annual 1955-64 1/

Country	Unit	1952-54 : average :	1955 :	1956 :	1957 :	1958 :	1959 :	1960 :	1961 :	1962 :	1963 :	1964 2/ :
Algeria:												
Production.....	1,000 M.T.:	3/ 8	8	7	6	6	8	8	10	8	4	4/
Acreage.....	1,000 acres:	3/ 5	5	6	5	4	4	4	4	5	2	--
Yield per acre....	Pounds	3,527	3,640	2,633	2,480	3,275	4,150	4,525	5,500	3,527	3,550	--
Morocco:												
Production.....	1,000 M.T.:	23	30	22	22	22	24	18	13	14	20	17
Acreage.....	1,000 acres:	15	18	12	12	14	12	10	5	10	12	10
Yield per acre....	Pounds	3,373	3,672	3,950	3,950	3,543	4,409	3,971	5,732	3,086	3,675	3,748
U.A.F.:												
Production.....	1,000 M.T.:	762	1,244	1,495	1,624	1,027	1,535	1,486	1,142	2,146	1,500	2,100
Acreage.....	1,000 acres:	487	623	716	758	538	757	734	559	862	950	1,050
Yield per acre....	Pounds	3,439	4,409	4,607	4,718	4,211	4,475	4,464	4,523	5,489	3,481	4,410

1/ Rough basis.

2/ Preliminary.

3/ Less than 3-year average.

4/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 25.--Northern Africa: Corn production, acreage and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/
Algeria:												
Production.....	1,000 M.T.:	11	10	11	7	7	11	9	6	7	7	3/
Acreage.....	1,000 acres:	20	20	20	17	15	15	17	15	16	15	3/
Yield per acre....	Bushels	22.7	19.7	22.7	16.1	18.5	28.7	20.9	15.7	16.5	18.5	--
Ethiopia:												
Production.....	1,000 M.T.:	150	160	136	152	180	165	165	170	190	200	205
Acreage.....	1,000 acres:	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Yield per acre....	Bushels	--	--	--	--	--	--	--	--	--	--	--
Libya:												
Production.....	1,000 M.T.:	1	1	1	1	1	2	1	2	2	2	2
Acreage.....	1,000 acres:	2	2	5	2	2	5	2	3/	3/	3/	3/
Yield per acre....	Bushels	19.7	19.7	19.7	19.7	19.7	15.7	19.7	--	--	--	--
Morocco:												
Production.....	1,000 M.T.:	286	286	261	206	369	343	400	180	347	397	350
Acreage.....	1,000 acres:	1,240	1,223	1,168	1,141	1,184	1,267	1,245	1,010	1,104	1,141	1,112
Yield per acre....	Bushels	9.0	9.1	8.7	7.1	12.2	10.6	12.6	7.0	12.2	13.1	12.4
Somalia 2/:												
Production.....	1,000 M.T.:	21	54	50	49	47	45	55	3/	3/	3/	3/
Acreage.....	1,000 acres:	52	195	178	190	165	198	222	5/	5/	5/	5/
Yield per acre....	Bushels	15.7	11.0	11.0	10.2	11.0	9.1	9.8	--	--	--	--
Sudan:												
Production.....	1,000 M.T.:	30	24	26	38	41	56	36	35	38	40	42
Acreage.....	1,000 acres:	17	45	42	45	47	3/	47	49	50	3/	3/
Yield per acre....	Bushels	22.4	20.9	24.4	33.1	34.3	--	30.3	28.0	29.9	--	--
Tunisia:												
Production 4/.....	1,000 M.T.:	4	5	2	3	3	5	4	3	4	2	3/
Acreage.....	1,000 acres:	32	45	3/	3/	3/	3/	3/	3/	3/	3/	3/
Yield per acre....	Bushels	4.7	4.3	--	--	--	--	--	--	--	--	--
UAR:												
Production.....	1,000 M.T.:	1,704	1,714	1,652	1,495	1,758	1,500	1,691	1,617	2,004	2,150	2,000
Acreage.....	1,000 acres:	1,946	1,902	1,904	1,835	2,028	1,929	1,890	1,663	1,901	1,920	1,750
Yield per acre....	Bushels	34.6	35.4	34.3	31.9	34.3	30.7	35.0	38.2	38.7	44.1	41.9

1/ Preliminary.
2/ Former Italian Somaliland.
3/ Not available.
4/ Probably includes some sorghum.

Source: USDA data used when available; otherwise, FAO data.

Table 26.--Northern Africa: Oilseed production, average 1952-54, annual 1955-64

Commodity and country	1,000 metric tons											
	1952-54 average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/	
Cottonseed:												
Algeria.....	4	4	3	1	1	1	1	1	2	3/	3/	1/
Ethiopia.....	3	5	5	5	7	12	6	6	4	7	8	9
Morocco.....	3	4	4	4	4	4	3	5	5	7	8	9
Sudan.....	164	189	232	90	211	245	220	409	304	191	191	250
UAR.....	706	648	639	777	852	850	888	666	897	819	819	835
Peanuts:												
Ethiopia.....	20	20	20	19	21	22	26	26	26	38	3/	3/
Libya.....	6	8	10	12	10	12	8	6	7	16	16	16
Somali Republic.....	2/	1	1	3	2	1	2	2	2	2	2	2
Sudan.....	2/	65	146	129	138	140	186	177	150	150	150	181
UAR.....	23	28	29	31	33	34	35	25	49	45	45	49
Sesame:												
Ethiopia.....	36	35	35	34	40	41	38	41	42	43	43	45
Somali Republic.....	3/	5	3	7	7	7	9	9	8	9	9	3/
Sudan.....	88	150	153	132	132	150	127	160	145	150	150	170
UAR.....	15	17	18	14	15	15	15	10	17	15	15	16
Linseed:												
Ethiopia.....	50	50	50	48	47	49	53	56	45	45	45	45
Morocco.....	38	14	15	10	19	20	4	4	15	2	2	3/
Tunisia.....	1	3/	1	1	1	1	3	1	1	3/	3/	3/
UAR.....	4	6	8	4	5	6	9	11	11	10	11	14
Sunflower seed:												
Ethiopia.....	3/	10	10	10	9	10	12	12	12	14	14	15
Morocco.....	3/	1	1	1	2	2	2	3/	2	9	9	3/

1/ Preliminary.

2/ Less than 3-year average.

3/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 27.--Northern Africa: Cotton production, acreage and yield, average 1952-54, annual 1955-64.

Country	Unit	1952-54 : average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/
Algeria:												
Production.....	1,000 M.T.:	2	2	1	1	1	1	1	1	2/	2/	2/
Acreage.....	1,000 acres:	22	25	20	17	10	5	5	15	2/	2/	2/
Yield per acre....	Pounds	198	173	110	132	220	441	441	154	--	--	--
Ethiopia:												
Production.....	1,000 M.T.:	2	2	3	2	2	2	3	2	3	3	4
Acreage.....	1,000 acres:	2/	10	2/	10	15	17	15	20	20	22	2/
Yield per acre....	Pounds	--	441	--	441	287	265	441	220	331	309	--
Morocco:												
Production.....	1,000 M.T.:	1	2	2	2	2	2	2	2	4	5	7
Acreage.....	1,000 acres:	10	10	10	17	20	15	17	20	22	37	42
Yield per acre....	Pounds	220	441	441	265	220	287	265	220	397	298	315
Sudan:												
Production.....	1,000 M.T.:	85	95	128	50	125	127	114	212	158	102	163
Acreage.....	1,000 acres:	652	598	763	729	887	941	940	1,176	1,106	1,100	1,100
Yield per acre....	Pounds	287	353	375	154	309	287	265	397	309	205	327
UAR:												
Production.....	1,000 M.T.:	371	335	325	406	446	457	478	336	457	442	501
Acreage.....	1,000 acres:	1,682	1,885	1,714	1,887	1,976	1,825	1,944	2,062	1,720	1,689	1,672
Yield per acre....	Pounds	385	397	419	463	507	551	551	353	595	577	661

1/ Preliminary.

2/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 28.--Northern Africa: Grape production, acreage and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 : average :	1955 :	1956 :	1957 :	1958 :	1959 :	1960 :	1961 :	1962 :	1963 :	1964 1/
Algeria:												
Production.....	1,000 M.T.:	2,280	1,852	2,392	1,964	1,777	2,386	2,035	2,200	2,300	2,178	2,206
Acreage.....	1,000 acres:	995	986	958	929	906	904	909	904	910	912	3/
Yield per acre....	Metric tons:	2.29	1.88	2.50	2.11	1.96	2.64	2.24	2.43	2.53	2.39	--
Libya:												
Production.....	1,000 M.T.:	3	6	6	10	11	12	6	6	6	8	2/
Acreage.....	1,000 acres:	3	5	6	7	7	7	10	10	10	10	3/
Yield per acre....	Metric tons:	1.00	1.20	1.00	1.43	1.57	1.71	.60	.60	.60	.80	--
Morocco:												
Production.....	1,000 M.T.:	145	297	398	375	362	428	364	338	300	417	420
Acreage.....	1,000 acres:	52	143	151	160	183	178	170	173	173	3/	--
Yield per acre....	Metric tons:	2.79	2.08	2.63	2.34	1.98	2.40	2.14	1.95	1.73	--	--
Tunisia:												
Production.....	1,000 M.T.:	128	157	188	227	230	245	209	225	230	221	225
Acreage.....	1,000 acres:	99	104	101	101	104	116	124	123	128	130	3/
Yield per acre....	Metric tons:	1.29	1.51	1.86	2.25	2.21	2.11	1.69	1.83	1.80	1.70	--
UAR:												
Production.....	1,000 M.T.:	90	75	81	91	88	99	102	106	120	105	130
Acreage.....	1,000 acres:	20	20	20	20	20	22	22	22	25	3/	--
Yield per acre....	Metric tons:	4.50	3.75	4.05	4.55	4.40	4.50	4.64	4.82	4.80	--	--

1/ Preliminary.
2/ Partly estimated.
3/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 29.--Northern Africa: Olive and olive oil production, average 1952-54 and 1954-57, annual 1957-64

Country	1952-54 : average	1954-57 : average	1957	1958	1959	1960	1961	1962	1963	1964 1/
Olives: 2/										
Algeria.....	213	175	185	147	157	131	150	145	165	5/
Morocco.....	3/ 4/ 73	6/ 3/ 82	5/	198	113	180	140	148	140	5/
Tunisia.....	5/	3/155	5/	5/	5/	625	180	225	450	5/
Libya.....	4/ 8	15	10	34	3	29	57	20	38	35
UAR.....	5/	5	5	5	7	7	8	8	11	15
Olive oil:										
Algeria.....	26	21	21	18	20	19	14	17	18	24
Morocco.....	18	21	9	35	22	14	19	24	18	26
Tunisia.....	54	54	50	131	45	125	34	45	96	86
Libya.....	5	6	13	3	6	3	15	5	3	14

1,000 metric tons

- 1/ Preliminary.
- 2/ Year beginning November, of year shown.
- 3/ Former Southern zone only.
- 4/ Less than 3-year average.
- 5/ Not available.
- 6/ Less than 4-year average.

Source: USDA data used when available; otherwise, FAO data.

Table 30.--Northern Africa: White potatoes, production, acreage, and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 average	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964 1/
Algeria:												
Production.....	1,000 M.T.:	247	212	220	243	233	272	268	218	270	252	260
Acreage.....	1,000 acres:	62	64	59	62	62	67	72	74	3/	3/	3/
Yield per acre....	Metric tons:	3.98	3.31	3.73	3.92	3.76	4.06	3.72	2.95	--	--	--
Ethiopia:												
Production.....	1,000 M.T.:	1	2	1	13	17	17	17	18	20	22	24
Acreage.....	1,000 acres:	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/	3/
Yield per acre....	Metric tons:	--	--	--	--	--	--	--	--	--	--	--
Libya:												
Production.....	1,000 M.T.:	--	11.5	12.2	18.0	18.2	21.0	25.2	25.8	28.0	28.0	27
Acreage.....	1,000 acres:	--	2	2	5	5	5	5	5	5	5	3/
Yield per acre....	Metric tons:	--	5.75	6.10	3.60	3.64	4.20	5.04	5.16	5.60	--	--
Morocco:												
Production.....	1,000 M.T.:	41	86	70	85	155	126	135	140	142	225	284
Acreage.....	1,000 acres:	20	3/	20	3/	30	45	35	36	3/	3/	3/
Yield per acre....	Metric tons:	2.05	--	3.50	--	5.17	2.80	3.86	4.00	--	--	--
Tunisia:												
Production.....	1,000 M.T.:	18	20	25	32	30	34	41	42	41	36	40
Acreage.....	1,000 acres:	2	3/	5	5	5	5	6	5	3	3/	3/
Yield per acre....	Metric tons:	9.00	--	5.00	6.04	6.00	6.08	6.83	8.40	13.7	--	--
UAR:												
Production.....	1,000 M.T.:	188	182	235	240	232	374	390	392	354	420	430
Acreage.....	1,000 acres:	30	30	35	35	40	54	57	57	59	2/	3/
Yield per acre....	Metric tons:	6.27	6.07	6.71	6.86	5.80	6.93	6.84	6.88	6.02	7.00	--

1/ Preliminary.

2/ Estimated

3/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 31.--Northern Africa: Tomato production, average 1952-54, annual 1955-64

Country	1952-54 : average :	1955 :	1956 :	1957 :	1958 :	1959 :	1960 :	1961 :	1962 :	1963 :	1964 1/
		----- 1,000 metric tons -----									
Algeria.....	2/	120	140	150	138	154	60	110	108	114	
Ethiopia.....	2/	2/	7	6	8	6	9	3/ 10	2/	2/	
Morocco.....	106	2/	177	172	193	270	198	210	175	167	
Tunisia.....	22	28	30	35	55	59	58	93	64	65	
UAR.....	508	568	583	604	701	770	842	869	989	1,055	1,060

1/ Preliminary.
2/ Not available.
3/ Estimated.

Source: USDA data used when available; otherwise, FAO data.

Table 32.--Northern Africa: Tobacco production, acreage, and yield, average 1952-54, annual 1955-64

Country	Unit	1952-54 : average :	1955 :	1956 :	1957 :	1958 :	1959 :	1960 :	1961 :	1962 :	1963 :	1964 1/
Algeria:												
Production.....	1,000 M.T.:	24	19.0	15.0	15.0	12.0	17.0	15.4	2.4	3.0	9.0	11.0
Acreage.....	1,000 acres:	79	72	35	49	52	54	54	22	24	19	2/
Yield per acre..:	Pounds :	661	573	926	683	507	683	639	241	265	1,036	--
Libya:												
Production.....	1,000 M.T.:	.9	1.4	1.0	1.0	1.0	1.0	1.1	.8	.9	1.0	1.0
Acreage.....	1,000 acres:	2	2/	2	2	2	2	2	2	2	3	2/
Yield per acre..:	Pounds :	992	--	1,543	1,102	1,102	1,102	1,213	882	993	728	--
Morocco:												
Production.....	1,000 M.T.:	2.0	2.0	2.0	2.0	3.0	2.0	2.5	1.5	2.1	.9	2.0
Acreage.....	1,000 acres:	5	2	5	5	5	5	2	2	3	3	3/
Yield per acre..:	Pounds :	882	2,205	441	882	1,323	882	2,756	1,653	1,543	661	--
Tunisia:												
Production.....	1,000 M.T.:	2.0	1.5	2.0	2.0	2.0	2.0	1.9	.7	.6	2.0	2.0
Acreage.....	1,000 acres:	2/	5	2	5	5	5	5	2	3	5	3/
Yield per acre..:	Pounds :	--	661	1,102	882	882	882	838	772	1,102	882	--

1/ Preliminary.
2/ Not available.
3/ Estimated.

Source: USDA data used when available; otherwise, FAO data.

Table 33.--Northern Africa: Livestock and poultry numbers, average 1948-52, annual 1958-62 1/

Country and year	Cattle	Sheep	Goats	Camels	Horses, mules, donkeys	Poultry
----- 1,000 -----						
Algeria:						
1948-52 ave.....	784	3,990	2,685	144	742	11,040
1958.....	826	6,632	3,100	194	756	10,067
1959.....	645	5,478	2,014	120	903	10,067
1960.....	664	5,460	1,879	103	882	8/
1961.....	624	5,360	2,350	210	714	8/
1962.....	611	4,995	1,946	146	627	8/
Ethiopia:						
1948-52 ave.....	18,937	19,830	15,281	855	5,000	50,000
1958.....	21,250	18,900	14,400	600	5,805	50,000
1959.....	21,450	19,850	15,950	680	5,820	8/
1960.....	22,500	19,850	15,950	8/	5/ 5,756	55,000
1961.....	22,400	19,650	15,800	8/	8/	8/
1962.....	22,500	19,650	15,850	690	5,811	55,000
Fr. Somaliland:						
1948-52 ave.....	10	100	180	6/ 10	6	8/
1958.....	10	8/	8/	18	8/	8/
1959.....	10	8/	455	18	3	8/
1960.....	10	80	455	18	3	8/
1961.....	12	80	455	18	3	8/
1962.....	8/	8/	8/	8/	8/	8/
Ifni:						
1948-52 ave.....	8/	32	141	--	4	8/
1958.....	23	39	8/	--	7	8/
1959.....	17	40	8/	--	7	8/
1960.....	18	41	400	--	6	8/
1961.....	8/	8/	8/	--	8/	8/
1962.....	8/	8/	8/	--	8/	8/
Libya:						
1948-52 ave.....	101	5/ 1,197	1,084	147	5/ 96	8/
1958.....	111	1,436	1,334	8/	136	7/ 782
1959.....	100	1,220	2,463	8/	129	7/ 782
1960.....	111	1,254	1,195	255	113	8/
1961.....	125	5/ 1,050	5/ 1,252	5/ 258	5/ 117	8/
1962.....	144	5/ 1,728	5/ 1,582	5/ 264	143	8/
Morocco:						
1948-52 ave.....	2,160	11,196	8,609	193	1,092	7/8,000
1958.....	2,883	14,390	7,059	225	1,638	8/
1959.....	2,560	12,924	6,489	208	1,654	8/
1960.....	8/	8/	8/	8/	8/	8/
1961.....	2,500	12,000	9,000	230	1,400	8/
1962.....	2,500	12,000	9,000	230	1,460	8/
Somali Republic:						
1948-52 ave.....	6/ 1,314	4,200	3,733	6/ 2,476	8/	3,000
1958.....	1,119	8/	5/ 4,315	8/	8/	8/
1959.....	1,119	8/	5/ 4,300	8/	8/	8/
1960.....	1,119	8/	5/ 4,300	5/ 2,531	8/	8/
1961.....	1,119	8/	8/	8/	8/	8/
1962.....	1,119	8/	8/	8/	8/	8/
Sudan:						
1948-52 ave.....	3,957	5,660	4,440	1,550	521	8/
1958.....	7,247	7,846	6,288	2,080	650	8/
1959.....	7,000	8/	8/	2,000	5/ 594	8/
1960.....	7,000	7,846	6,288	2,000	596	8/
1961.....	7,000	7,846	6,290	2,000	598	8/
1962.....	7,000	7,851	6,320	2,002	601	8/

- Continued

Table 33.--Northern Africa: Livestock and poultry numbers, average 1948-52, annual 1958-62 1/ - cont.

Country and year	Cattle	Sheep	Goats	Camels	Horses, mules, donkeys	Poultry
	----- 1,000 -----					
Tunisia:						
1948-52 ave.....:	395	2,463	1,719	186	257	8/
1958.....:	563	3,410	1,447	212	314	8/
1959.....:	604	3,793	1,276	216	339	5,000
1960.....:	622	3,930	845	171	309	5,000
1961.....:	561	2,566	8/	157	288	8/
1962.....:	464	2,635	8/	141	274	8/
UAR:						
1948-52 ave.....:	2/ 2,568	1,254	812	165	865	8/
1958.....:	3/ 2,785	1,259	723	157	1,006	7/62,067
1959.....:	4/ 2,958	1,418	778	173	1,036	8/
1960.....:	4/ 2,969	8/	8/	189	8/	8/
1961.....:	4/ 3,112	1,578	833	8/	1,059	8/
1962.....:	4/ 3,188	1,596	848	8/	1,087	8/

1/ Date of enumeration, October to September and ending in year shown.

2/ Includes 1.2 million buffaloes.

3/ Includes 1.4 million buffaloes.

4/ Includes 1.5 million buffaloes.

5/ Partly estimated.

6/ Less than 4-year average.

7/ Chickens only.

8/ Not available.

Source: USDA data used when available; otherwise, FAO data.

Table 34.--Northern Africa: Exports of principal agricultural commodities, by country, annual 1955-61 1/

Country and year	Cotton	Wine	Fresh vegetable	Fruits	Oil and 2/ oilseeds	Feed grains	Coffee	Wheat & flour	Hides and skins	Other agri-cultural	Total exports	Total agri-cultural exports	Share of total	Agricultural
Algeria														
1955	1.9	178.1	21.5	42.4	7.1	4.8	--	28.5	5.6	25.5	315.4	463.0	68.1	
1956	1.2	164.0	29.0	40.2	8.4	1.1	--	18.5	6.6	28.4	297.4	428.9	69.3	
1957	.7	222.1	19.9	54.0	3.3	3.4	--	17.1	7.4	16.2	344.1	455.6	75.5	
1958	.5	265.9	23.4	46.0	2.6	5.6	--	18.0	6.8	18.9	387.7	488.5	79.4	
1959	.3	181.7	17.6	36.3	1.0	5.8	--	7.5	9.5	14.0	273.7	366.3	74.7	
1960	.3	212.7	22.9	31.0	4.4	3.1	--	8.5	8.3	8.7	299.9	558.0	54.0	
1961	.4	189.5	17.0	33.5	--	4.5	--	5.6	8.0	27.0	285.5	675.0	42.0	
Ethiopia														
1955	--	--	--	--	4.1	--	34.1	--	6.2	11.6	56.0	60.4	92.7	
1956	--	--	--	--	8.3	--	32.7	--	6.3	10.7	58.0	60.8	95.4	
1957	--	--	--	--	6.5	--	51.5	--	6.1	10.1	74.2	77.3	96.0	
1958	--	--	--	--	5.4	--	43.5	--	5.8	7.8	62.5	68.0	91.9	
1959	--	--	--	--	5.5	8/	37.6	8/	8.9	14.2	66.2	72.1	91.8	
1960	--	--	.9	--	7.1	2.9	45.4	--	8.7	13.2	78.2	80.3	97.4	
1961	--	--	3/	1.3	9.7	--	37.8	--	8.7	13.2	70.8	72.4	97.8	
1962	--	--	.6	.9	7.8	--	42.8	--	9.9	10.9	72.9	78.5	92.9	
Libya														
1955	--	--	--	1.0	1.8	--	--	--	.7	6.8	10.3	12.1	85.1	
1956	--	--	--	.6	2.4	--	--	--	.6	4.9	8.5	10.8	78.7	
1957	--	--	--	.4	5.7	--	--	--	.6	3.4	10.1	13.3	75.9	
1958	--	--	--	.8	4.8	--	--	--	.8	4.2	10.4	12.1	86.0	
1959	--	--	--	.4	3.3	--	--	--	.8	2.9	7.4	10.3	71.8	
1960	--	--	--	.7	3.4	--	--	--	1.1	2.1	7.3	8.7	83.9	
1961	--	--	--	.4	3.4	--	--	--	1.2	.6	5.6	18.3	30.6	
Morocco														
1955	1.5	7.9	9.8	21.1	4.0	26.8	--	21.7	--	42.3	135.1	327.9	41.2	
1956	1.7	9.5	13.3	23.0	8.0	33.8	--	18.0	--	38.5	145.8	339.3	43.0	
1957	1.9	10.5	12.9	28.8	11.2	5.0	--	4.2	--	16.2	90.7	280.3	32.4	
1958	2.1	18.3	21.8	38.5	1.0	8.7	--	7.4	--	17.8	115.6	345.2	33.5	
1959	1.2	16.5	16.1	28.8	3.0	7.1	--	7.1	--	22.9	102.7	285.6	36.0	
1960	1.2	11.9	37.3	37.5	7.0	9.1	--	9.9	--	7.8	121.7	354.2	34.4	
1961	3/	11.3	30.8	42.5	3/	3.7	--	.3	--	18.4	107.0	342.5	31.2	
1962	2.5	14.1	27.2	40.4	.7	2.0	--	6.4	--	21.5	114.8	348.3	33.0	
Sudan														
1955	87.1	--	--	--	20.6	--	--	--	2.5	28.4	138.6	140.2	98.9	
1956	119.8	--	--	--	30.2	--	--	--	2.6	31.7	184.3	192.1	95.9	
1957	61.0	--	--	--	34.4	--	--	--	2.8	31.1	129.3	138.1	93.6	
1958	63.9	--	--	--	20.9	1.2	--	--	2.4	25.4	113.8	114.2	99.6	
1959	115.2	--	--	--	32.0	--	--	--	3.1	29.2	179.5	181.7	93.6	
1960	95.2	--	1.1	--	33.8	8.7	--	--	2.9	30.5	172.2	181.0	95.1	
1961	89.5	--	.7	.3	39.7	5.9	--	--	3.0	29.2	168.3	178.5	94.3	

- Continued

Table 34.--Northern Africa: Exports of principal agricultural commodities, by country, annual 1955-61 1/ - continued

Country and year	Cotton	Wine	Fresh vegetable	Fruits	Oil and 2/ oilseeds	Feed grains	Coffee	Wheat & flour	Hides and skins	Other agri-cultural	Total exports	Share of total	Agricultural
Tunisia													
1955	--	7.7	--	2.7	5/ 9.3	1.5	--	13.1	2.9	8.5	45.7	106.8	42.8
1956	--	8.3	--	4.9	11.1	1.8	--	1.6	2.4	9.6	39.7	112.3	35.4
1957	--	18.9	.6	5.6	22.1	1.0	--	9.4	3.0	8.8	69.4	130.0	53.4
1958	--	31.4	1.6	7.0	22.0	5.9	--	11.1	3.0	10.8	92.8	154.6	60.0
1959	--	17.9	.7	6.1	34.3	6.7	--	8.2	.8	--	74.7	141.8	52.7
1960	--	17.3	1.0	6.5	13.7	4.1	--	12.4	2.2	--	57.2	119.6	47.8
1961	--	19.1	.3	5.6	23.1	--	--	5.3	1.3	5.5	60.2	110.3	54.6
1962	--	18.4	1.0	8.7	32.3	2.7	--	3.4	1.2	8.5	76.2	116.8	65.2
UAR 9/													
1955	308.2	--	9.1	--	1.8	--	--	--	--	7/32.7	351.9	393.2	89.5
1956	283.8	--	17.0	--	2.9	--	--	--	--	7/36.5	340.2	404.3	84.1
1957	356.3	--	11.8	--	3.6	--	--	--	--	7/44.8	416.5	488.7	85.2
1958	315.3	--	14.0	1.5	.9	--	1.0	--	--	7/52.2	384.9	466.9	82.4
1959	316.1	--	15.6	1.7	.4	--	--	--	--	18.2	352.0	442.7	79.5
1960	386.7	--	16.1	3.3	3.7	4/28.2	--	--	--	8.3	446.3	549.8	81.2
1961	300.2	--	16.8	1.8	4.2	4/20.7	--	--	--	31.0	374.7	484.7	77.0
Total 6/													
1955	398.8	193.7	40.4	67.2	48.7	33.1	34.1	63.3	17.9	155.8	1,053.0	1,503.6	70.0
1956	406.5	181.8	59.3	68.7	71.3	36.7	32.7	38.1	18.5	160.3	1,073.9	1,548.5	69.4
1957	419.9	251.5	45.2	88.8	86.8	9.4	51.5	30.7	19.9	130.6	1,134.3	1,583.3	71.6
1958	381.9	315.6	60.8	93.8	57.6	21.4	43.5	37.5	18.6	137.1	1,167.8	1,649.5	70.8
1959	432.8	216.1	50.0	73.3	79.5	19.6	37.6	22.8	23.1	101.4	1,056.2	1,510.5	69.9
1960	483.4	244.9	78.3	79.0	73.1	56.1	45.4	30.8	21.0	73.8	1,182.8	1,690.9	70.0
1961	391.9	219.9	65.7	85.4	80.3	34.8	37.8	11.2	22.2	122.9	1,072.1	1,881.7	57.0

1/ Also given for 1962 where available. 2/ Includes olive oil, cottonseed oil and oilseeds. 3/ If any, not listed separately.

4/ Includes rice exports. 5/ Data for 1954. 6/ Total for the 7 listed countries. 7/ Over 50 percent rice. 8/ Less than \$50,000.

9/ Includes also trade with Syrian Arab Republic and Sudan. -- = None, negligible, or not applicable.

Table 35.--Northern Africa: Imports of principal agricultural commodities, by country, annual 1955-61 1/

Country & year	Million dollars											Total : imports : total	:Agricultural : share of : total
	Wheat : & wheat : flour :	Sugar : products :	Dairy : products :	Tea :	Oil : and : oilseeds :	Meat :	Coffee :	Tobacco :	Vegetable :	Other : agri- : cultural :	Total : agri- : cultural :		
Algeria	1955 : 35.2	20.3	3.3	12.8	10.5	19.9	.3	5.8	15.6	123.7	697.1	17.7	
	1956 : 35.7	26.1	3.4	19.2	15.3	21.0	3.4	8.4	42.2	181.5	779.1	23.3	
	1957 : 42.3	29.8	3.4	22.1	24.5	22.6	4.3	9.2	36.0	198.7	1,015.5	19.6	
	1958 : 39.8	33.4	4.2	24.7	13.2	23.2	4.5	18.5	39.2	210.0	1,140.0	18.4	
	1959 : 56.3	34.7	4.5	17.9	19.5	20.4	4.3	15.8	47.0	254.2	1,143.1	22.2	
	1960 : 44.7	39.0	2.9	31.8	27.8	18.8	3.8	14.8	38.3	261.9	1,274.5	20.5	
	1961 : 36.4	40.7	2.8	30.2	14.5	16.6	5.9	8.7	27.6	220.2	1,024.0	21.5	
Ethiopia	1955 : 1.4	.2	.6	--	--	--	--	.3	3.8	6.3	65.0	9.7	
	1956 : 1.7	.6	.6	--	--	--	--	.3	3.2	6.4	67.0	9.6	
	1957 : .5	.3	.5	--	--	--	--	.4	4.0	5.7	66.1	8.6	
	1958 : .7	.4	.5	--	--	--	--	--	3.6	5.2	77.8	6.7	
	1959 : .3	--	.7	--	--	--	--	--	6.9	7.9	84.1	9.4	
	1960 : .6	.3	.6	.2	--	--	--	--	7.4	9.8	84.3	11.6	
	1961 : .3	.9	.7	.2	--	--	--	--	6.3	9.2	91.9	10.0	
	1962 : .9	.4	.7	.3	--	--	--	--	4.1	7.1	102.8	6.9	
Libya	1955 : 3.2	1.7	3.5	1.4	--	.2	--	--	3.6	13.6	40.6	33.5	
	1956 : 4.1	1.6	2.4	1.7	--	.2	--	--	3.7	14.4	47.0	30.6	
	1957 : 4.2	3.2	3.7	.8	--	.3	--	--	2.4	15.4	78.6	19.6	
	1958 : 3.0	2.2	2.8	.6	--	.3	--	--	4.0	13.9	96.6	14.4	
	1959 : 4.2	2.0	3.2	1.2	--	.3	--	1.1	3.4	16.8	113.6	14.8	
	1960 : 5.7	1.8	3.3	1.2	.5	.2	--	.5	4.0	18.7	169.1	11.1	
	1961 : 4.6	2.4	4.0	1.9	.6	.3	--	.9	4.1	20.7	149.2	13.9	
Morocco	1955 : 1.6	45.6	21.8	10.0	--	5.1	--	1.9	18.1	115.5	497.1	23.2	
	1956 : 1.9	40.1	18.1	15.7	--	5.3	--	2.2	16.3	110.7	444.6	24.9	
	1957 : 39.2	10.3	14.0	12.5	--	4.0	1.9	1.7	13.2	96.8	344.8	28.1	
	1958 : 1.6	26.2	18.7	12.0	--	5.4	1.5	2.1	6.4	84.8	397.4	21.3	
	1959 : 1.1	32.9	7.6	9.3	--	3.0	.2	1.2	7.1	69.0	286.8	24.1	
	1960 : 13.5	24.1	9.9	11.1	--	4.2	1.2	1.9	5.2	79.5	412.3	19.3	
	1961 : 23.3	36.5	11.2	3.7	--	2.9	1.7	2.2	6.7	93.8	445.7	21.0	
	1962 : 23.5	25.1	10.9	9.9	--	3.6	2.0	4.2	10.1	96.9	425.0	22.8	
Sudan	1955 : 5.0	9.2	9.1	--	--	4.3	--	--	7.1	34.7	140.1	24.8	
	1956 : 3.8	13.3	5.0	--	--	5.5	--	--	5.3	32.9	129.9	25.3	
	1957 : 5.9	16.6	8.0	--	--	5.9	--	--	5.9	42.3	180.8	23.4	
	1958 : 2.6	10.9	7.4	--	--	3.7	--	--	1.2	25.8	170.7	15.1	
	1959 : 5.5	10.7	10.0	--	--	6.3	--	--	4.9	37.4	163.7	22.8	
	1960 : 4.7	10.5	5.7	--	--	2.7	--	.9	2.5	27.0	180.0	15.0	
	1961 : 6.3	11.6	10.2	.2	.1	3.4	--	1.6	2.5	36.5	237.8	15.3	

- Continued

Table 35.--Northern Africa: Imports of principal agricultural commodities, by country, annual 1955-61 1/ - continued

Country and year	Wheat	Wheat	Sugar	Dairy	Tea	Oil	Meat	Coffee	Tobacco	Vegetable	Other	Total	Total	Agricultural	
	& wheat	flour	products	products	Tea	and	Meat	Coffee	Tobacco	Vegetable	agri-	agri-	agri-	share of	
						oilseeds					cultural	cultural	total	total	
	Million dollars														Percent
Tunisia	1955	2.1	11.6	3.8	3.5	.6	1.1	1.6	1.4	2.5	5.6	33.8	63.3	53.4	
	1956	12.9	12.0	4.1	4.8	5.4	1.3	1.6	2.0	3.2	7.8	55.1	68.0	81.0	
	1957	7.3	9.2	3.1	4.8	-.4	1.0	1.4	1.1	2.6	5.1	36.0	152.0	23.7	
	1958	2.2	8.6	2.8	3.5	-.8	1.0	1.6	2.9	2.3	5.5	30.2	155.7	19.4	
	1959	5.0	7.7	2.9	4.2	-.7	.7	1.5	1.7	.8	-.8	24.5	152.8	16.0	
	1960	10.8	7.4	2.8	4.1	-.8	.8	1.2	1.8	.8	1.5	31.2	190.6	16.4	
	1961	26.9	6.5	3.2	4.4	-.8	.1	1.2	1.1	1.5	14.1	60.0	210.6	28.5	
	1962	19.5	6.6	3.5	4.4	.3	.4	1.3	2.3	1.4	10.2	49.9	218.1	22.9	
UAR 2/	1955	7.9	-.8	3.2	28.1	4.9	3.8	3.5	13.8	4.1	22.8	92.1	525.0	17.6	
	1956	23.3	-.8	2.4	18.8	17.5	2.4	3.7	14.7	4.2	26.9	113.9	534.2	21.3	
	1957	62.4	3.1	2.0	19.9	24.5	2.1	3.9	15.7	4.7	29.0	167.3	524.0	31.9	
	1958	69.4	2.1	2.1	22.0	7.5	3.8	6.3	15.4	-.8	44.5	173.1	685.9	25.2	
	1959	78.9	3.1	1.6	19.1	5.5	1.9	3.7	14.4	1.4	35.6	165.2	615.4	26.8	
	1960	75.9	1.7	4.6	22.0	2.7	3.1	1.4	14.5	2.0	35.9	163.8	646.0	25.4	
	1961	78.1	6.7	1.7	24.0	5.9	5.4	4.0	14.4	1.2	24.2	165.6	683.3	24.2	
Total 3/	1955	19.8	104.7	38.9	69.9	29.7	15.4	34.6	15.5	14.6	76.6	419.7	2,028.2	20.7	
	1956	52.8	104.4	45.0	53.1	59.5	19.0	37.3	20.1	18.3	105.4	514.9	2,069.8	24.9	
	1957	84.3	114.1	46.3	54.3	60.3	27.6	38.1	23.0	18.6	95.6	562.2	2,361.8	23.8	
	1958	88.1	90.5	50.6	59.1	44.8	17.8	40.5	24.3	22.9	104.4	543.0	2,724.1	19.9	
	1959	151.0	91.4	45.9	49.3	33.9	22.1	35.2	21.0	20.3	104.9	575.0	2,559.5	22.5	
	1960	155.9	84.8	58.0	48.5	47.0	31.4	28.5	21.3	20.9	94.8	591.1	2,556.8	20.0	
	1961	176.8	100.4	54.3	57.3	42.1	21.7	28.4	23.4	16.1	85.5	606.0	2,842.5	21.3	

1/ Also given for 1962 where available.

2/ Includes trade with Syrian Arab Republic and Sudan.

3/ Total of the 7 listed countries.

-- = None, negligible, or not applicable.

Table 36.--U. S. agricultural exports to Northern Africa, by country, 1955-63 - continued

Country and year	Wheat & flour		Barley		Other grain & prep.		Tallow		Cotton		Tobacco		Vegetable: oil & fats		Oilseeds		Dairy products		Other agri-cultural		Total agri-cultural		Total exports	
	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/	1/	2/		
	1,000 dollars																							
Somali Rep. 2/	1955	4																1	4	5	542	547		
	1956																			31	2,967	2,998		
	1957																	60	29	89	2,993	2,992		
	1958				23													3	44	70	1,766	1,836		
	1959				1													2	11	14	799	813		
	1960				140														5	145	692	837		
	1961				144													1	1	146	3,939	4,085		
	1962				788													29	45	994	3,588	4,582		
	1963				370													18	52	458	1,758	2,216		
Sudan	1955	464																	542	1,006	464	1,470		
	1956					42												4	4	50	789	839		
	1957																		3	3	4,474	4,477		
	1958																		4	7	2,137	2,144		
	1959																	35	3	90	2,136	2,226		
	1960					291												4	25	320	6,227	6,547		
	1961					64												11	20	103	11,495	11,598		
	1962	3,484				138												12	18	58	3,710	9,187		
	1963	5,976																29	68	6,090	9,932	16,022		
Tunisia	1955	2																	5	149	319	3,909	4,228	
	1956	5,088			3/															11	5,741	3,691	9,432	
	1957	2,568																782	48	3,615	3,313	6,928		
	1958	2,549																1,029	15	3,934	2,519	6,483		
	1959	4,356																399	19	4,830	4,452	9,282		
	1960	10,237																324	24	11,681	9,569	21,250		
	1961	25,934			223													512	269	32,019	7,493	39,512		
	1962	24,960			2,333													1,730	359	33,235	12,621	45,856		
	1963	8,947			2,032													293	316	14,748	11,152	25,900		
UAR	1955	1,745																		21,219	33,842	44,635	78,477	
	1956	32,876																		6,161	48,527	48,041	96,568	
	1957	1,476																		729	13,448	26,634	40,082	
	1958 1/	2,122																		331	15,275	36,591	51,866	
	1959 1/	46,871																		1,610	77,382	28,409	105,791	
	1960 1/	73,545																		882	99,136	51,454	150,590	
	1961 1/	72,165																		4,414	97,135	64,684	161,819	
	1962 1/	103,720																		4,960	171,218	63,167	234,385	
	1963 1/	115,481																		933	149,265	60,161	209,426	
Total	1955	4,770																		23,141	43,156	96,217	139,373	
	1956	44,389																		9,090	73,547	102,717	176,262	
	1957	7,700																		5,717	37,617	110,781	148,388	
	1958	6,987																		2,093	32,263	130,866	163,129	
	1959	57,987																		3,346	107,613	117,897	225,510	
	1960	91,943																		2,622	137,264	149,861	287,125	
	1961	150,386																		6,349	208,192	151,153	362,345	
	1962	175,868																		13,056	281,581	186,386	467,967	
	1963	168,712																		9,355	241,416	169,257	410,673	

1/ Includes significant identifiable shipments under food for relief or charity. 2/ Includes data for former British and Italian Somaliland.
 3/ If any, listed under wheat and wheat flour.
 -- = None, negligible, or not applicable.

Table 37.--U. S. agricultural imports from Northern Africa, by country, 1955-63

Country and year	Coffee	Cotton	Hides and skins	Olives and animal hair	Mool & animal hair	Drugs, spices & herbs	Beeswax	Sesame seed	Other		Total		Non-agri-cultural	Total imports
									agri-cultural	agri-cultural	agri-cultural	agri-cultural		
1,000 dollars														
Algeria	1955	--	--	1,128	--	222	--	--	370	1,720	4,085	5,805		
	1956	--	--	134	--	289	--	--	308	731	2,038	2,769		
	1957	--	--	455	--	222	--	--	198	875	591	1,466		
	1958	--	--	241	--	207	--	--	15	476	338	814		
	1959	--	--	386	--	429	--	--	41	870	279	1,149		
	1960	--	--	13	--	461	--	--	21	527	847	1,374		
	1961	--	--	37	--	26	--	--	22	85	175	260		
	1962	--	--	66	--	376	--	--	38	480	4,833	5,313		
	1963	--	--	63	--	193	--	--	25	281	561	842		
Ethiopia	1955	27,520	--	2,899	--	--	319	--	321	31,059	165	31,224		
	1956	20,744	--	2,642	--	--	394	--	177	23,957	309	24,266		
	1957	29,743	--	1,875	--	107	94	--	60	32,318	261	32,579		
	1958	25,446	--	2,153	--	--	307	--	308	28,214	389	28,603		
	1959	11,670	--	3,180	--	--	184	--	176	15,210	318	15,528		
	1960	24,669	--	1,102	--	--	286	29	131	26,217	757	26,974		
	1961	29,453	--	778	--	--	268	--	121	30,620	786	31,406		
	1962	26,577	--	1,130	--	--	317	69	119	28,212	1,247	29,459		
	1963	31,928	--	1,150	--	81	275	269	69	33,772	1,493	35,265		
Fr. Somaliland	1955	--	--	20	--	--	--	--	5	25	3	28		
	1956	13	--	--	--	28	--	--	2	43	7	50		
	1957	--	--	16	--	--	20	--	--	36	2	38		
	1958	135	--	6	--	--	--	--	5	146	8	154		
	1959	386	--	--	--	--	--	--	1	387	7	394		
	1960	524	--	--	--	--	--	--	--	524	9	533		
	1961	148	--	61	--	--	21	--	--	230	18	248		
	1962	536	--	17	--	--	10	--	1	564	10	574		
	1963	182	--	--	--	7	10	--	25	224	45	269		
Libya	1955	--	--	--	--	--	--	--	1	1	3	4		
	1956	--	--	1	3	--	--	--	--	4	27	31		
	1957	--	--	--	1	--	--	--	--	1	90	91		
	1958	--	--	--	--	--	--	--	--	--	135	135		
	1959	--	--	--	--	--	--	--	--	--	242	242		
	1960	--	--	--	--	--	--	--	18	18	301	319		
	1961	--	--	--	--	--	--	--	2	2	457	459		
	1962	--	--	--	--	--	--	--	1/	1/	11,779	11,779		
	1963	--	--	--	1	--	--	--	--	1	15,985	15,986		
Morocco	1955	--	--	252	--	72	--	--	2,051	3,411	9,375	12,786		
	1956	--	--	446	--	374	--	--	2,019	2,839	7,021	9,860		
	1957	--	--	360	22	246	--	--	1,010	2,751	8,421	11,172		
	1958	--	--	423	--	46	--	--	955	1,479	4,997	6,476		
	1959	--	--	554	144	353	45	--	922	2,218	8,024	10,242		
	1960	--	--	249	834	179	44	--	916	2,416	7,724	10,140		
	1961	--	--	203	792	565	57	--	1,045	2,882	8,142	11,024		
	1962	--	--	213	467	528	41	--	782	2,214	8,370	10,584		
	1963	--	--	107	664	460	7	0	599	2,034	4,553	6,587		

- Continued

Table 37.--U. S. agricultural imports from Northern Africa, by country, 1955-63 - continued

Country and year	Cotton	Coffee	Hides and skins	Olives and animal hair	Wool & animal hair	Drugs, spices & herbs	Beeswax	Sesame seed	Other		Total		Non-agricultural imports
									agri-cultural	cultural	agri-cultural	cultural	
1,000 dollars													
Somali Rep. 2/													
1955			618						367	985	120	1,105	
1956			778						332	1,110	147	1,257	
1957			313						86	399	232	631	
1958			491							491	192	683	
1959			641							648	87	735	
1960			407						156	563	352	915	
1961			206							206	230	436	
1962			257						54	311	345	656	
1963			180							180	464	644	
Sudan													
1955	230		515			8			1	754	2,605	3,359	
1956	358		694				7		61	1,120	2,799	3,919	
1957	5		555				18		95	673	3,039	3,712	
1958	111		778				10		51	950	3,169	4,119	
1959	210		671				14	1	75	971	3,943	4,914	
1960	8		770			106	8	25	9	926	4,152	5,078	
1961	4		618			28		195	4	849	3,475	4,324	
1962	490		540			12				1,042	3,300	4,342	
1963	692		313			78	15			1,098	3,858	4,956	
Tunisia													
1955				1,602					45	1,647	572	2,219	
1956				68					6	75	686	761	
1957				3,503		4			30	3,537	276	3,813	
1958				2,831					37	2,860	349	3,229	
1959				2,392					2	2,406	197	2,603	
1960				244					1	245	423	668	
1961				568					5	573	84	657	
1962				1,118					16	1,134	276	1,410	
1963				699	7	35			4	745	234	979	
UAR													
1955	21,445		90		232		210	126	569	22,672	2,915	25,587	
1956	10,998		204		44		157	83	563	12,049	2,752	14,801	
1957	14,113		135		53		89	47	814	15,288	1,771	17,059	
1958	13,257		44			63	72	21	1,268	14,725	1,681	16,406	
1959	11,468		100				111	1	630	12,310	2,067	14,377	
1960	12,911		89				88	25	321	13,434	11,275	24,709	
1961	14,404		143		44		31	20	601	15,243	6,782	22,025	
1962	11,814		252				49	7	1,160	13,282	9,773	23,055	
1963	10,828		176		32		91		306	11,437	9,775	21,212	
Total													
1955	27,520		4,394	3,766	232	302	529	126	3,730	62,274	19,843	82,117	
1956	20,757		4,765	202	47	692	558	83	3,468	41,928	15,786	57,714	
1957	29,743		3,254	5,071	76	616	566	141	2,293	55,878	14,683	70,561	
1958	25,581		3,368	3,127		316	389	21	2,639	49,361	11,258	60,619	
1959	12,056		11,678	2,978	144	782	354	2	1,854	35,020	15,164	50,184	
1960	25,193		12,919	451	834	746	79	79	1,573	44,870	25,810	70,710	
1961	29,601		14,408	825	836	619	377	215	1,800	50,690	20,149	70,839	
1962	27,113		12,304	1,367	467	916	417	76	2,170	47,239	39,933	87,172	
1963	32,135		11,520	959	704	779	398	269	1,082	49,772	36,968	86,740	

1/ Less than \$500.

2/ Includes data for former British and Italian Somaliland.

-- = None, negligible, or not applicable.

