Saudi Arabia:

SUPPLY and DEMAND PROJECTIONS for FARM PRODUCTS to 1975, with Implications for U. S. Exports

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PREFACE

In 1963 the U.S. Department of Agriculture contracted with the American University of Beirut, Lebanon, to prepare a projection of supply, demand, and trade in Saudi Arabia. Results of the study were published in Lebanon in 1965 under the title "Saudi Arabia: Long-Term Projections of Supply of and Demand for Agricultural Products."

This research (hereafter referred to as the "AUB Report") constitutes part of the Department's efforts to evaluate the long-term prospects for agricultural products throughout the world. The major findings of the study are summarized in this shorter report, along with the conclusions and implications of the projections for U.S. agriculture.

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SUMMARY

Saudi Arabia's hard currency, growing petroleum revenues, general lack of import restrictions, and large gold and foreign exchange reserves make the country's markets most attractive.

Because of the country's intemperately hot and dry climate, plus scarcity of rainfall and of underground water, only about 0.13 percent of its total area is cultivated. Consequently, Saudi Arabia is a food-deficit country. Dates are the only major staple food whose production has been sufficient to meet local demand.

Detailed import figures for Saudi Arabia are not available for recent years. As of early 1966, the last publication of the Saudi Customs showing imports of commodities by country of origin covered the year ending June 1962. In 1961/62, Saudi Arabia's imports of agricultural commodities totaled $76 million compared with $45.6 million in 1954/55. Imports of the agricultural products specifically dealt with in this report totaled $52 million in 1961/62.

U.S. trade data show that agricultural exports to Saudi Arabia totaled $10 million in 1962, $13.5 million in 1963, and $14.1 million in 1964. However, such exports consist almost entirely of two commodities--rice and wheat flour. During 1962-64, each of these commodities represented about 40 percent of the value of U.S. agricultural exports to Saudi Arabia.

Saudi Arabia's imports of rice are projected to increase from around 109,000 tons in 1965 to 127,000 tons in 1970 and 144,000 tons by 1975. The U.S. share of the market is expected to increase from around 33 percent in 1965 to 40 percent by 1975. Consequently, Saudi Arabia's purchases of U.S. rice are expected to increase from around 36,000 tons in 1965 to 44,000 tons in 1970 and 58,000 tons by 1975.

Wheat production in Saudi Arabia is increasing, but not at a rate sufficient to meet total demand. Saudi Arabia has been importing most of its wheat flour from the United States and most of its wheat grain needs from Canada. Wheat flour imports constituted nearly three-fourths of the wheat imports, grain equivalent basis, during 1956/57-1961/62. The Saudi Government intends to increase its milling capacity; thus, imports will switch from wheat flour to wheat grain. The U.S. share of the wheat market is projected to decline from 65 percent in 1965 to 50 percent in 1970 and 1975, or in grain equivalent, from 90,000 tons in 1965 to 78,000 tons by 1970 and 80,000 tons by 1975.

The United States sells small quantities of meat, primarily poultry, and canned vegetables to Saudi Arabia. U.S. meat exports are projected to increase from 900 tons in 1965 to 2,000 tons by 1975. Canned vegetable exports from the United States to Saudi Arabia are projected to increase from 1,000 tons to 1,800 tons during 1965-75.

Imports of canned fruits and fruit products are projected to increase from 6,000 tons in 1965 to 11,000 tons by 1975. U.S. exports to Saudi Arabia are placed at 1,800 tons in 1965 and 4,500 tons in 1975. U.S. exports of this commodity have consisted primarily of concentrated frozen fruit juices. Should North African countries begin exporting frozen fruit juices, the United States could lose a good portion of this market.

Saudi Arabia is expected to substantially increase its imports of feed grains, fresh fruits and vegetables, dairy products, and vegetable oils through 1975. However, the United States has been an insignificant supplier of all these commodities.

Unless there is a shift in present trends the United States will continue to be an insignificant supplier through 1975. Well-planned promotional efforts would probably have positive effects on U.S. sales of agricultural commodities to Saudi Arabia. But if U.S. suppliers are to capitalize on the strong demand for agricultural products in Saudi Arabia, their products must be competitively priced, acceptable, and available in the local markets.

SAUDI ARABIA: SUPPLY AND DEMAND PROJECTIONS FOR FARM PRODUCTS TO 1975, with Implications for U.S. Exports

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GENERAL PROCEDURE

Methods used in assessing the future demand for and domestic supply of agricultural products in Saudi Arabia were limited by the scarcity of reliable data and the absence of numerous statistical time series.

In calculating the future demand for food items, total demand (imports plus domestic production) for each food item was estimated in terms of quantity for the year 1961/62. This period then served as the base year for projecting demand to 1975. The volume of demand for various foodstuffs in the base year was increased in proportion to the estimated rise in population in the projection years. It was additionally increased to allow for the effect of the rise in private per capita consumption expenditures.

Total output is a product of cultivated area and yields. Future cultivated area was estimated by adding the area to be developed under planned agricultural projects to the existing area, after making allowance for possible shortfalls from targets. The yield projections were essentially based on the long-term yield trends in countries with comparable economies, and checked by available rough indications of past experience in Saudi Arabia.

Estimates of future net imports of agricultural products were arrived at as the difference between the projected future demand and projected future domestic supply.

The projections are neither targets to be aimed at nor forecasts of what will actually take place. Rather, they are estimates of the probable future supply of and demand for agricultural products, based on specific assumptions. The assumptions used are meant, of course, to be as realistic as possible, and actual past experience is their point of departure. Where no data are available, past experiences of countries comparable to Saudi Arabia have been drawn upon. Therefore, the projections supply the basis for their own amendment in the future, should the underlying assumptions be changed as a result of new information or new policies.

The theoretical shortcomings of the methods used in projecting future demand for imports into Saudi Arabia are of smaller practical significance than the inherent weakness of the data on which the projections are built. Little is known about the Saudi Arabian economy in general and its agriculture in particular. Thus, a large part of the research effort of the AUB report was devoted to collecting, checking, and adjusting data which only then could be used with a degree of confidence in the projections.

The AUB report made high and low projections for demand and supply and consequently for imports. In that report the high demand and low supply projections were said to be the most probable. They are the projections presented in this study(table 1).

Table 1.--Saudi Arabia: Demand, domestic production, and imports of selected agricultural commodities for 1961/62, and projections for 1965, 1970, and 1975

Commodity	Total demand				Domestic production			
	1961/62	1965	1970	1975	1961/62	1965	1970	1975
	1,000 metric tons 1/							
Wheat 2/	245	278	336	395	129	140	180	235
Rice	104	114	137	162	4	5	10	18
Sorghum	16	18	22	26	16	16	18	20
Barley	75	86	131	180	48	52	67	88
Millet	56	64	77	91	35	35	40	46
Meat	47	58	70	82	36	38	40	44
Canned fruit	4	6	9	11	--	--	--	--
Fresh fruit	116	150	203	249	86	38	116	155
Canned vegetables	12	15	21	26	--	--	--	--
Fresh vegetables	370	477	647	795	342	370	548	812
Canned milk	5	8	12	15	--	--	--	--
Butter and fats	28	11	15	18	19	--	--	--
Vegetable oils	2	2	3	4	--	--	--	--

	Total imports				Imports from United States			
	1,000 metric tons 1/							
Wheat 2/	116	133	156	160	70.7	90.0	78.0	80.0
Rice	3/100	109	127	144	17.2	36.0	44.0	58.0
Sorghum	--	2	4	6	5/	6/	6/	6/
Barley	4/ 27	34	64	92	.3	6/	6/	6/
Millet	21	29	37	45	5/	6/	6/	6/
Meat	11	20	30	38	.3	.9	1.5	2.0
Canned fruit	4	6	9	11	.9	1.3	2.7	4.5
Fresh fruit	30	62	87	94	5/	6/	6/	6/
Canned vegetables	12	15	21	26	.6	1.0	1.5	1.8
Fresh vegetables	28	107	99	--	.2	6/	6/	6/
Canned milk	5	8	12	15	.2	6/	6/	6/
Butter and fats	9	11	15	18	5/	6/	6/	6/
Vegetable oils	2	2	3	4	5/	6/	6/	6/

1/ All tonnages referred to in this report are metric tonnages.
2/ Grain equivalent.
3/ Average imports, 1959/60-1961/62.
4/ Average imports, 1960/61-1961/62.
5/ Less than 100 tons.
6/ Not projected. The United States is not expected to be a significant source of supply.

Data on Saudi Arabia are based on the Arabic calendar, which is a lunar reckoning from The Year of the Hegira (the flight of Mohammed from Mecca), A.D. 662. Thirty of its years constitute a cycle, of which 11 have 355 days and the others 354. For the sake of simplicity, however, years such as 1377 or 1381 are converted to the Gregorian calendar years 1957/58 and 1961/62.

Even though the projections for 1965 are of slight value at this date, they are presented to show the magnitude of changes projected from 1961/62 to 1965 and 1975. Values projected for 1965 can only be thought of as averages for 1964-66, since no account can be taken of the random disturbances which vary from year to year. Thus, the degree to which actual values corresponded to the 1965 projections will not be known until late in 1967, when the 1966 returns may become available.

DEMAND FOR AGRICULTURAL PRODUCTS

Population

The growth of population can be expected to lead approximately to a proportional growth in the demand for food. This underlines the great importance of obtaining realistic estimates of population increase for use in projecting future demand for food.

A simple and direct relation between the size of population and total food consumption is assumed to apply to Saudi Arabia in the future. Lack of an official definitive figure of population does not allow a meaningful calculation of consumption on a per capita basis. Estimates of population in Saudi Arabia vary between 3.2 and 6.4 million for 1962. The AUB report adopts the 3.2 million estimate. However, if total demand for food is determined for a base period, the rate of population growth can be used to project total demand.

The probable rate of population increase has been estimated by utilizing available patchy information on birth rates, death rates, and age structure of the population, and by comparing the population characteristics of Saudi Arabia with those of other countries.

Upon consideration of the above factors, it was projected that population would rise steadily from 2.0 percent per year in 1965 to 2.9 percent per year in 1975. It was assumed that a declining mortality rate would bring the rate of increase near the higher figure by 1975.

The projected population increase in relation to the base year (mid-1962) is as follows:

Midyear	Index of size of population
1962	100
1965	106
1970	118
1975	135

Income

The demand for food in a given country bears a direct relationship to private consumption expenditure. The rate of growth of private consumption expenditure is directly related to growth in the gross national product (GNP). To construct a GNP growth model it is first necessary to determine the past trend. Unfortunately, there

is little information available regarding Saudi Arabia's GNP in past years. To fill the gaps in available information, an estimate of the GNP was worked out in detail for the year 1960/61 and an index of the growth of GNP during 1950/51-1960/61 was constructed.

Growth models have used various economic variables to set limits to the rate of growth. In advanced countries which operate near full employment, growth of the labor force and rise in productivity have been used to determine the rate of production growth. In underdeveloped countries which suffer from capital shortage but have unemployed labor, investment and the ratio of capital investment to output may set limits to growth in GNP.

For Saudi Arabia, neither the size of the labor force nor capital expenditures can realistically be considered major determinants of income growth, since there is no shortage of capital and labor is underemployed. Development of the oil sector, which is by far the largest single sector in the economy, is likely to be the main determinant of total income growth. Development in the oil sector affects income primarily through two channels. The first is the direct local expenditures incurred by oil companies for exploration, production, and marketing. The second is the royalties and taxes paid to the Government, particularly that part which the Government spends locally on goods and services.

Government expenditure is the largest single generator of income in the country. The general trend of Government expenditure will obviously continue to be determined by receipts from oil companies, as such receipts represented about 83 percent of the total revenue in the 1962-64 budgets.

Oil revenue and local expenditure of the major oil company in Saudi Arabia were both found to be closely related to production in the past. Hence, the two major components of GNP could be estimated by projecting oil production.

Other significant components of GNP in Saudi Arabia include agricultural production and, to a lesser extent, services to the pilgrims who visit Moslem shrines and whose stay in Saudi Arabia may extend over a month. These could not be used in projecting GNP, however--the first because of the unreliability of past production figures, and the second because of the speculative nature of any projection of the number and expenditures of pilgrims.

The rate of increase in per capita income in absolute terms is not presented since neither the size of the population nor the level of income is reliably known. The GNP was estimated at approximately $945 million in 1960/61. Assuming a population of 3.2 million, the average per capita income is $294.

Saudi Arabia has had a most favorable balance of trade in recent years (table 2). The country borrowed heavily from abroad in the early 1950's, but since 1963 foreign debts have been fully repaid and foreign assets expanded. In 1964 the country held more than $600 million in gold and foreign exchange reserves.

During 1950/51-1960/61, GNP rose at an average rate of 14.5 percent per year. Projections for later years reveal a slowdown to 9.5 percent up to 1965, 8.2 percent from 1965 to 1970, and 5.5 percent from 1970 to 1975. Stepped-up development and defense expenditures of the Government are expected to restrain growth in the future.

In addition, the trend towards more equal distribution of income will probably lead to a decline in private savings and a corresponding rise in consumption. The ratio of private consumption expenditure to GNP, 53 percent in 1960/61, is assumed to rise to 56, 59, and 62 percent in 1965, 1970, and 1975, respectively.

Table 2.--Saudi Arabia: Balance of trade, 1954/55-1962/63

Year		Exports	Imports	Surplus
Gregorian	Arabic			
		Million dollars		
1954/55	1374	560.3	200.7	359.6
1955/56	1375	710.7	270.9	439.8
1956/57	1376	655.1	284.5	370.6
1957/58	1377	773.1	232.9	540.2
1958/59	1378	781.9	255.9	526.0
1959/60	1379	737.0	203.9	940.9
1960/61	1380	864.1	233.9	630.2
1961/62	1381	940.2	256.7	683.5
1962/63	1382	1/ 978.9	1/ 307.9	1/ 671.0

1/ Preliminary.

Food Consumption

The effect of the expected rise in per capita expenditure on demand for various foods was calculated by applying elasticity coefficients of demand. The income (expenditure) elasticities were derived from cross-sectional data yielded by two sample surveys of household expenditure: one undertaken by the Economic Research Institute of the American University of Beirut during September 1963 in Riyadh and the other by the Arabian American Oil Company (ARAMCO) for its employees in the Eastern Province. The elasticity coefficients adopted for projection purposes are as follows:

Food group	Income elasticity
Cereals	0.2
Meat	.4
Fats and oils	.5
Dairy products	1.2
Vegetables	.6
Fruits	.6
Dates	- .1
Sugar	.5

As shown in the above tabulation, the effect of income on consumption varies among commodities. A negative elasticity was obtained for dates. In other words, as income rises, we can expect a decrease in the consumption of dates. The elasticity for dairy products (1.2) is the highest among all food products. The elasticity for all foods is 0.44; an increase in income is thus likely to have a significant effect on food consumption.

The demand for various agricultural products in 1961/62 is shown in table 3. The demand projections through 1975 were derived from 1961/62 data and anticipated increases in population and consumption expenditures.

Table 3.--Saudi Arabia: Total demand for agricultural products and per capita food supply, 1961/62 1/

Product	Quantity	Value	Percentage of total value	Percentage imported	Per capita food supply
	1,000 tons	Mil.riyals2/	Pct.	Pct.	Kilograms
Food products:					
Wheat & flour	221	94	10.0	42	69
Rice	84	59	6.2	95	26
Sorghum	16	5	0.5		5
Millet	56	15	1.6	37	18
Other cereals	6	2	0.2	40	2
Cereal preparations	3	5	0.5	100	1
Total cereals	385	181	19.1	51	120
Fresh vegetables	370	180	19.1	8	116
Vegetables, preserved	12	13	1.4	100	4
Total vegetables	382	193	20.4	10	119
Fresh fruits	116	103	10.9	26	36
Fruits, preserved	5	8	0.8	100	2
Dates and date syrup	262	93	9.8	2	82
Total fruits and dates	382	204	21.5	10	119
Meat and preparations	47	126	13.3	23	15
Fish and preparations	6	7	0.7	20	2
Total meat and fish	53	133	14.0	23	17
Vegetable oils	2	4	0.4	100	1
Animal fats & butter 3/	28	46	4.8	30	9
Milk 3/	159	78	8.2	3	50
Other dairy products	6	18	1.9	35	2
Total oil & dairy prod.	195	146	15.4	9	61
Sugar and preparations	70	31	3.3	100	23
Coffee, tea, & spices	12	56	5.9	99	4
Miscellaneous foods	2	2	0.2	100	1
Total food products	1,484	947	100.0	4/ 36	464
Animal feed:					
Barley	64	22	-	-	-
Barsim (alfalfa)	2,012	169	-	-	-
Other	6	1	-	-	-
Total animal feed	2,081	192	-	-	-
Agricultural raw materials:					
Raw cotton	2	2	-	-	-
Skin & leather	n.a.	3	-	-	-
Other	1	2	-	-	-
Total raw materials	n.a.	6			

1/ Assuming a population of 3.2 million.
2/ One U.S. dollar equals 4.5 Saudi Riyals.
3/ Assuming one-third of domestic milk output is converted to samneh (local butter).
4/ Percent of total value of food products.

DOMESTIC SUPPLY OF AGRICULTURAL PRODUCTS

Current Conditions

Agriculture and animal husbandry are subsistence activities in Saudi Arabia. Most of the agricultural output is consumed by the farmers and Bedouins themselves, and little surplus is available for sale. Due to the isolation of most of the small production areas, a large part of agricultural output does not enter the money market. Consequently, production for sale, except near the cities, is of small significance.

Recent population estimates for Saudi Arabia suggest that about 20 percent are nomadic tribes, another 20 percent are settled in urban areas, and the remaining 60 percent consist of rural population. On the other hand, income originating from agricultural activity is estimated at around 15 percent of GNP in 1960. That is, about 15 percent of GNP is attributed to 60-80 percent of the population. Although these proportions can only be regarded as rough estimates, they clearly indicate that an unequal distribution of income is associated with underdeveloped agriculture.

The lack of advancement of agriculture is essentially due to the intemperately hot and dry climate, scarcity of rainfall and of underground water, and poor knowledge of improved techniques. The area of Saudi Arabia is estimated at 860,000 square miles, roughly the size of Western Europe excluding Spain and Portugal; but the cultivated area, estimated at 245,000 hectares, is only about 0.13 percent of the total land area of the country.

Dates are the only major staple food crop whose production is sufficient to meet local demand. Dates represent the major agricultural food crop and the main element of diet for a large segment of the population.

The analysis and evaluation of agricultural production in Saudi Arabia were largely based on the results of agricultural surveys conducted by the Ministry of Agriculture since 1960/61. For purposes of the surveys, the Ministry divided the country into seven agricultural provinces: the North, East, West, Qassim, Central, and two provinces in the South. Surveys of the first five provinces were completed, but results of only the first four were processed and tabulated at the time the AUB report was prepared. Production in the Central and Southern Provinces was estimated on the basis of unprocessed returns, findings of the completed surveys, and previous data.

Table 4 presents estimates of agricultural production in Saudi Arabia during 1960/61-1963/64. The annual cropped area by type of crop and by province during this period is given in table 5.

There is no systematic information on agricultural yields in Saudi Arabia. General average yields of major groups of crops are as follows:

Food group	Yield
Field crops (excluding alfalfa)	1,990 Lb/acre
Vegetables	9,300 "
Fruits	6,670 "
Dates	10,310 "

Table 4.--Saudi Arabia: Estimates of annual agricultural production, 1960/61-1963/64

Crop	Cropped area	Average yield	Output	Average farm price	Value	Total value
	Hectares	Kilograms per hectare	Metric tons	Riyals (per metric ton)	1,000 riyals 1/	Percent
Wheat	89,890	1,437	129,201	460	59,482	9.8
Barley	29,182	1,653	48,245	380	18,349	3.0
Rice	1,789	2,354	4,211	360	1,516	0.3
Sorghum	15,200	1,022	15,528	330	5,124	0.8
Millet	34,578	1,007	34,818	260	9,053	1.5
Alfalfa	25,086	80,200	2,011,551	84	169,157	27.9
Other	5,290	800	4,232	300	1,270	0.2
Total field crops	201,015	--	2,247,786	--	263,951	43.5
Onions	2,161	10,301	22,260	400	8,904	1.5
Watermelons	12,206	14,047	171,455	448	76,806	12.6
Tomatoes	3,692	11,778	43,487	812	35,313	5.8
Eggplant	1,067	6,000	6,402	540	3,457	0.6
Squash	1,614	6,000	9,684	540	5,229	0.9
Okra	1,133	6,000	6,798	540	3,671	0.6
Pumpkins	5,419	6,000	32,514	400	13,005	2.1
Green beans	345	6,000	2,070	400	828	0.1
Dry beans	286	6,000	1,716	400	686	0.1
Melons	2,465	13,239	32,635	400	13,054	2.2
Cucumbers	335	6,000	2,010	540	1,085	0.2
Snake cucumbers	309	6,000	1,854	540	1,001	0.2
Other vegetables	2,100	6,000	12,600	400	5,040	0.8
Total vegetables	33,132	--	345,485	--	168,079	27.7
Dates	22,281	--	257,606	360	92,738	15.3
Fruits	11,487	--	86,000	960	82,560	13.6
Total	267,915		2,932,645		607,328	100.0

1/ One U.S. dollar equals 4.5 Saudi Riyals.

Table 5.--Saudi Arabia: Annual cropped area by type of crop and by province, 1960/61-1963/64

Province	Field crops	Vegetables	Dates & fruits	Total	Percent of total
			Hectares		
North	8,033	778	2,320	11,136	4.2
East	2,363	899	11,000	14,267	5.3
West	17,005	4,003	4,711	25,724	9.6
Qassim	26,436	8,190	2,648	37,324	13.9
Central	42,930	14,165	5,304	62,399	23.3
South (estimated)	104,183	5,092	7,785	117,065	43.7
Total	201,015	33,132	33,786	267,915	100.0
Percent of total	75.0	12.4	12.6	100.0	

The relatively high yields can be attributed to the predominance of irrigation and to the exploitation of the most fertile lands. While agricultural production costs are generally high in Saudi Arabia (in view of natural limitations and water scarcity), the high comparative yields of vegetables and fruits and increasing demand for these products have prompted farmers to shift their production toward these products.

Projected Supply

Output projections raise complex problems even in the most economically advanced countries, where economic indicators and statistical series are well developed. The problems are amplified when one deals with less-developed countries, as Saudi Arabia, where statistical information is not only scarce and unreliable, but lacking in most cases.

Absence of agricultural statistical series on areas, yields, and composition of land produce in Saudi Arabia necessitated a practical approach to the problem of projecting agricultural output. Such an approach was to start from the benchmark period 1960/61-1963/64--which corresponds to the period of the agricultural surveys--and to project the magnitudes of cropped areas and yields into the immediate future.

Future expansion in cropped area in Saudi Arabia is most likely to be restricted to the expansion of irrigated area, which now covers about 80 percent of the total cropped area. Low and unreliable levels of yields tend to discourage expansion of rainfed cultivation. Expansion of the irrigated area by 1975 is likely to be of modest dimensions since irrigation water is generally scarce and costly. No great and cheap water resources have been discovered yet which, if developed, would make a strong impact on Saudi Arabian agriculture. Moreover, pumping of irrigation water at increasingly deeper levels acts as an economic brake on fast expansion.

In the prevailing conditions of Saudi Arabia, it is expected that future expansion of cultivation will largely depend on the development of water resources by the Government. Continuing Government assistance will also be needed for land leveling, draining, and irrigation-network construction. While private efforts may successfully extend the area under cultivation, particularly in the rainfed zones, the overall impact of such development is not likely to be large.

The breakdown of total cropped area among various crops is difficult to predict. One alternative is to assume that the present cropping pattern will continue to prevail during the projection period. Such an assumption, however, would ignore both the trend of past changes in the cropping pattern and results from the cost-revenue analysis for major crops. Though crude, that analysis nevertheless points to the evident profitability of fruits and vegetables relative to cereals and dates. The past shift toward more profitable crops will most probably continue in the future.

Improvements in yields, rather than expanded acreage, are likely to be the less costly and faster means of raising output in Saudi Arabia in the future. This would require effective means of spreading improved cultural methods. The potential rise in yields which is associated with application of fertilizers to irrigated lands has hardly been explored at all. Experts have repeatedly pointed out that drainage and application of a national water duty are means of raising yields quickly and inexpensively. Distribution of selected seeds and of new varieties are other means of raising yields.

The projected crop area, average yields, and domestic production of agricultural crops are shown in table 6.

With reference to meat production, no systematic census of livestock has ever been taken in Saudi Arabia. The most recent estimate (1963) of the Ministry of Agriculture of the number of animals for food is as follows:

Sheep	2,800,000
Goats	1,400,000
Camels	600,000
Cattle	270,000

The future domestic supply of meat depends on several factors. First, it depends on whether Saudi Arabia succeeds in preventing losses from droughts and disease. The Government's well-drilling program, which aims at supplying watering centers in the desert areas and at spreading veterinary services, may materially advance this goal. Second, it is affected by the rate at which Bedouins who raise livestock are attracted by the higher income and the greater security of settled rural and urban life. A third factor is the growth in the number of livestock, particularly cattle, raised on farms on alfalfa and grains and under modern conditions. Lastly, the replacement of camels by the automobile as a means of transport and the falling demand for camel meat as income rises may result in reduction of the camel population. The effect of these, as well as of other relevant factors, will be reflected in the proportion of the livestock population slaughtered every year. The projected domestic supply of meat is shown in table 7.

IMPORTS

Saudi Arabia is a food-deficit country. While the demand for food, stimulated by higher incomes and an increasing population, rose at a fast rate during the last 15 years, growth of domestic supply was hampered by the poverty of both agricultural resources and methods. Changes in tastes and nutritional habits accompanied the considerable shift of population toward urban centers and were stimulated by the spread of more efficient marketing channels. This development reinforced the demand for certain imported foodstuffs in relation to demand for traditional foods. As a result of these factors, imports of staple foods in general, as well as of preserved foods which are not produced domestically, increased at a fast rate. While total imports of food in 1946/47 were valued at $6 million, their value multiplied over 12 times to $76 million in 1961/62 (table 8). Imports of food in 1962/63 are estimated at $88 million. The rate of growth in the value of imports at current prices was 9.5 percent per year during 1951/52-1961/62.

Table 6.--Saudi Arabia: Area, yield, and output of selected agricultural commodities, 1960/61-1963/64 average, and projections for 1965, 1970, and 1975

Crop	1960/61-1963/64 average			1965			1970			1975		
	Cropped area	Average yield	Output	Cropped area	Average yield	Output	Cropped area	Average yield	Output	Cropped area	Average yield	Output
	1,000 hectares	Kg. per hectare	1,000 m.t.	1,000 hectares	Kg. per hectare	1,000 m.t.	1,000 hectares	Kg. per hectare	1,000 m.t.	1,000 hectares	Kg. per hectare	1,000 m.t.
Wheat	89.9	1,437	129.2	90.4	1,547	139.8	102.6	1,751	179.6	118.7	1,981	235.1
Barley	29.2	1,653	48.3	29.2	1,780	52.0	33.2	2,014	66.9	38.4	2,279	87.5
Dukhun (sorghum)	15.2	1,022	15.5	15.3	1,022	15.6	17.4	1,022	17.8	20.1	1,022	20.5
Dura (millet)	34.6	1,007	34.8	34.8	1,007	35.0	39.5	1,007	39.8	45.7	1,007	46.0
Rice	1.8	2,354	4.2	1.8	2,535	4.6	3.6	2,868	10.3	5.4	3,245	17.5
Other cereals	4.3	800	3.4	4.4	837	3.7	2.1	902	1.9	0.1	971	1.0
Total	175.0	--	235.4	175.9	--	250.7	198.4	--	316.3	228.4	--	407.6
Barsim (alfalfa) 1/	25.1	80,200	2013	25.4	80,200	2037	33.9	80,200	2719	45.1	80,200	3617
Onions	2.2	10,300	22.7	2.2	10,930	24.1	2.9	12,067	35.0	3.9	13,323	52.0
Watermelons & melons	14.7	13,643	200.6	14.9	14,692	218.9	19.8	16,622	329.1	26.3	18,807	494.6
Tomatoes	3.7	11,778	43.6	3.7	12,499	46.2	5.0	13,800	69.0	6.6	15,236	100.6
Pumpkins	5.4	6,000	32.4	5.5	6,274	34.5	7.3	6,759	49.3	9.8	7,281	71.4
Other vegetables	7.1	6,000	42.6	7.3	6,274	45.8	9.7	6,759	65.6	12.9	7,281	93.9
Total	33.1	--	341.9	33.6	--	369.5	44.7	--	548.0	59.5	--	812.5
Fruits	11.5	7,478	86.0	11.7	7,487	87.5	15.5	7,478	115.9	20.7	7,478	154.8
Dates	22.3	11,551	257.6	22.3	11,551	257.6	22.3	11,551	257.6	22.3	11,551	257.6
Cotton	1.0	500	0.5	1.0	500	0.5	2.0	500	1.0	3.0	500	1.5
Grand total 1/	267.9	--	921.4	269.9	--	965.8	316.8	--	1238.8	379.0	--	1634.0

1/ Barsim is excluded from total output.

Table 7.--Saudi Arabia: Domestic supply of meat, 1963, and projections for 1965, 1970, and 1975

Kind	1963	1965	1970	1975
	- - - - - - - 1,000 metric tons - - - - - - -			
Mutton and lamb	14.0	14.3	15.0	15.8
Goat meat	7.0	7.1	7.5	10.0
Camel meat	12.0	12.0	12.0	12.0
Beef	5.4	5.1	5.8	6.1
Total	38.4	38.5	40.3	43.9

In relation to total food supply, food imports rose after 1946/47 when they probably represented less than one-tenth of total food supply. The ratio rose to about one-third during the first half of the 1950's, and leveled off to 36 percent in 1961/62. There is little doubt that food imports in the future will continue to grow in both quantity and value. However, the projections show that the share of imports in total food supply will probably remain stable, i.e., about the same proportion will be imported in 1975 as in 1961/62.

As indicated earlier, the projected level of agricultural imports is the difference between the projected demand and the projected supply for each food item. This assumes that no policy restrictions will be imposed on imports during 1965-75.

On the other hand, the Government has in recent years paid a subsidy amounting to about 17 percent of value on the major food imports. The subsidy applied to about two-thirds of food imports in 1962/63 and amounted to $10 million. It was meant to offset the effect of the 1959 devaluation of the Saudi Riyal on the domestic prices of staple food imports. To the extent that the subsidy is passed on to the consumer, it results in lower prices of these food imports. Abolishing the subsidy would then have a significant dampening effect on demand for the subsidized products.

Of course, the food subsidy has a socioeconomic aspect which cannot be ignored. It has the effect of raising real income of consumers, a rise which may be substantial for the lowest income groups whose largest budget expenditure is for food. The AUB report assumed that the food subsidy would exist throughout the projection period. 1/

The food subsidy works to the advantage of an exporting country. Because the Saudi Government insists on a negotiated letter of credit before it will provide price subsidies to the Saudi importer-distributor, Saudi customers pay in dollars and customarily without requesting special or lengthy credit terms.

While the AUB report develops projections for a variety of agricultural commodities, this discussion includes only the products which the United States exports--cereals, fruits, vegetables, meat, dairy products, and vegetable oils.

Numerous factors complicate efforts to determine what has been happening to the U.S. share of Saudi imports in recent years: (1) Detailed Saudi import figures for recent years are not available. The last publication of the Saudi customs showing

1/ The Government was considering removal of the subsidy on various food products at the time this report was being prepared.

Table 3.--Saudi Arabia: Total imports of agricultural commodities, by value, 1954/55-1961/62

Commodity	1954/55	1955/56	1956/57	1957/58	1958/59	1959/60	1960/61	1961/62
					1,000 dollars			
Meat & meat products	3,167	5,154	6,723	6,624	7,961	8,500	8,560	10,284
Milk & cream, fresh & preparations	1,200	1,532	2,409	1,677	2,468	2,487	2,514	3,369
Other dairy products	607	964	619	933	927	795	1,694	932
Eggs	78	291	720	643	762	669	542	553
Animal fats	2,222	2,394	3,577	1,453	3,510	4,574	3,251	3,462
Fish & preparations	403	411	618	601	658	506	520	515
Rice	7,494	8,845	12,990	10,573	13,957	14,143	10,121	12,767
Wheat & wheat flour	5,551	5,040	10,341	6,678	8,068	8,857	8,904	7,702
Corn & millet	261	231	2,161	623	1,559	1,508	2,358	1,648
Barley	416	751	1,027	807	1,311	2,004	2,899	900
Other grains	832	724	1,626	1,293	2,351	1,578	1,593	1,445
Fresh fruits	2,091	2,466	3,448	3,385	5,803	5,031	4,855	4,737
Dried fruits & nuts	335	332	511	374	406	241	141	315
Canned fruits	1,152	1,532	1,944	1,575	2,258	1,324	1,298	1,409
Fresh vegetables	2,331	2,412	2,737	2,391	3,310	2,944	2,522	2,651
Canned vegetables	1,014	1,122	2,278	2,468	2,406	2,203	2,480	2,996
Coffee, tea, cocoa, spices	9,673	10,982	12,600	10,937	14,454	10,269	10,661	12,269
Vegetable oils & fats	514	488	804	615	1,019	342	648	855
Sugar & sugar preparations	4,917	5,157	8,316	9,428	7,151	5,572	7,156	6,574
Other	1,280	1,397	876	1,036	325	904	833	594
Total	45,588	52,225	77,325	64,614	81,164	74,959	73,550	76,032

imports of commodities by country covered the year ending June 1962. (2) The Saudi practice of using the Arabic calendar year, which varies in length, makes precise year-to-year comparisons difficult. (3) Saudi customs figures may be incomplete and so must be treated with reserve. (4) Imports from neighboring entrepot countries, e.g. Lebanon, are to some degree reexports, as they were produced in other countries. (5) The Saudi customs figures are published only in Arabic; limited availability of translated data makes difficult any detailed comparisons of imports by country of origin.

U.S. trade data show that U.S. agricultural exports to Saudi Arabia increased from $6.4 million in 1956 to $14.1 million in 1964 (table 9). During 1962-64, rice and wheat flour represented 78 percent of such exports.

American companies interested in exporting to Saudi Arabia are likely to be most effective when they send representatives to study local market conditions and call personally upon local businessmen and Government officials. All inquiries from Saudi firms demand answers, even if the replies are negative, in order to maintain a reputation for cooperativeness. Since most Saudi business firms are generalized and deal in many different types of products, American companies should not insist on certain kinds of experience when selecting local distributors.

Rice

The per capita consumption of rice has been increasing in recent years. This trend is expected to continue in the future. Conversely, production of rice in Saudi Arabia is not expected to reach great significance by 1975. The import demand for rice is projected to approximate 109,000 tons in 1965, 127,000 tons by 1970, and 144,000 tons by 1975.

U.S. promotional efforts on behalf of American rice in mid-1962 added impetus to the upsurge of American rice sales to Saudi Arabia. U.S. rice exports to Saudi Arabia jumped from $1.5 million in 1961 to about $3.6 million in 1962, $6.3 million in 1963, and $5.4 million in 1964. Rice is currently the major U.S. agricultural export to Saudi Arabia.

While Burma and Thailand are the only countries which consistently export more rice than the United States, the United States is the only country which exports rice of all types as far as size of the grain is concerned. The United States grows and exports rice of long-, medium-, and short-grain varieties.

U.S. rice is exported in three forms. Specially processed rice is marketed in export cases with the individual packages ranging from about 1 to 10 pounds each in weight. These are packed under trade name brands and, of course, sell at premium prices. The major portion of the U.S. export is in 100-pound burlap bags of well-milled polished rice. The third category is that of brown rice which has been partially processed to remove the outer hull. Brown rice sales are primarily to Europe.

Special processes for rice include parboiled, a process which provides for retention of a high percentage of the natural vitamins. This product finds a good market in Saudi Arabia. Another U.S. specialty rice sold in Saudi Arabia is precooked rice, a true cooked product which has been dehydrated. U.S. rice processing mills are equipped to provide fortification with soluble vitamins and protective minerals where desired.

U.S. rice exports to Saudi Arabia consist primarily of long-grain milled rice. From long habit Saudis have favored the rice varieties grown in Thailand, Pakistan, and Iran. However, Saudis are becoming increasingly aware of the fact that the United States produces rices very similar to these varieties.

Table 9.--United States: Value of agricultural exports to Saudi Arabia, 1956-64

Commodity	1956	1957	1958	1959	1960	1961	1962	1963	1964
	1,000 dollars								
Meat & meat products	457	527	506	388	420	340	426	395	642
Milk & cream, fresh	62	30	39	40	73	38	112	91	145
Butter	132	55	7	1	1/	0	36	13	77
Other dairy products	155	111	198	31	145	241	155	174	183
Rice, milled	788	1,161	913	798	1,053	1,501	3,593	6,283	5,437
Wheat	1,163	1,094	112	90	30	160	86	119	492
Wheat flour	3,258	3,820	2,982	2,864	3,403	4,346	4,341	4,508	5,132
Barley	0	0	0	157	753	137	0	4	1/
Other grains & preparations	221	180	195	183	148	181	143	189	229
Vegetables & vegetable prep.	571	521	610	484	394	622	529	682	624
Fruit & fruit preparations	387	391	391	299	208	294	276	380	337
Walnuts, shelled	20	3	2	10	8	8	5	10	7
Pecans, shelled	26	7	5	13	8	5	21	28	11
Vegetable oils, fats, & waxes, refined	65	58	54	46	73	87	79	129	142
Sugar	18	44	14	11	5	8	12	21	39
Syrup	20	20	16	19	9	16	11	12	14
Coffee	0	0	9	23	92	179	137	150	181
Flavoring & coloring syrups	33	20	17	31	65	99	64	58	106
Food for relief or charity	21	0	0	9	0	13	9	30	2
Other agricultural	134	120	96	76	156	46	0	243	343
Total agricultural	7,531	8,168	6,166	5,623	7,043	8,371	10,035	13,519	14,148
Nonagricultural	66,817	60,673	52,408	44,002	36,327	46,604	67,396	55,780	75,008
Total exports	74,348	68,841	58,574	49,625	46,370	54,975	77,431	69,299	89,156

1/ Less than $500.

Saudi Arabian trade data show that the U.S. share of the rice market during 1954/55-1961/62 varied from 5 to 22 percent. U.S. trade data show that rice exports to Saudi Arabia have risen sharply since 1961/62. The U.S. portion of the Saudi Arabian rice market in 1965 will not be known until trade data for this latter period are available. The U.S. share is projected to increase from at least one-third in 1965 to 40 percent by 1975. Thus, U.S. rice exports to Saudi Arabia are placed at 36,000 tons in 1965, 44,000 tons in 1970, and 58,000 tons by 1975 (table 10).

Wheat and Wheat Flour

Wheat is a staple food and a major source of food calories for the Saudi population in general. The demand for wheat is projected to increase by approximately 43 percent from 1965 to 1975 while domestic production is projected to increase by approximately 68 percent (30 percent in area and 38 percent in yield) during this period. However, as supply will continue to be considerably short of domestic demand, Saudi Arabia will have to depend heavily on wheat imports well beyond 1975.

Import projections for wheat and wheat flour for 1965, 1970, and 1975 are 111,000, 123,000, and 123,000 tons, respectively. The AUB report assumed that wheat flour would represent approximately 69,000, 84,000, and 99,000 tons of such totals. Converting the projections to a grain equivalent and assuming a 72 percent extraction rate results in import quantities of 138,000, 156,000, and 160,000 tons for 1965, 1970, and 1975, respectively.

The AUB report assumes a relatively slow rate of expansion in wheat milling facilities, and consequently a high rate of imports in the form of wheat flour. However, since the AUB report was completed the Saudi Government has announced plans to increase its wheat milling and wheat storage capacity. The extent to which the Government will increase such capacity by 1970 or 1975 is not known. The idea has been advanced that capacity should be increased until imports of wheat flour would no longer be required. Milling plans would yield byproducts of bran and middlings which would be very valuable in the production of livestock and poultry feeds. While wheat flour cannot be stored more than 6 to 8 weeks in Saudi Arabia without becoming rancid, wheat grain can easily be stored for years in silos with modern equipment. Such grain storage would insure a wheat supply within the country as a protection against any catastrophe.

Table 10.--Saudi Arabia: Imports of rice by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Total	United States	Thailand	Bahrein	U. S. imports as percentage of total
Gregorian	Arabic					
		Metric tons				Percent
1954/55	1374	60,020	7,934	2,364	7,136	13
1955/56	1375	84,460	4,164	141	17,885	5
1956/57	1376	71,338	3,769	22,806	12,926	5
1957/58	1377	64,108	6,742	33,872	5,659	11
1958/59	1378	101,554	5,234	78,608	5,880	5
1959/60	1379	116,596	5,903	91,129	7,477	5
1960/61	1380	77,828	5,814	49,755	4,868	7
1961/62	1381	79,725	17,213	43,759	6,938	22
1965		109,000	36,000	1/	1/	33
1970		127,000	44,000	1/	1/	35
1975		144,000	58,000	1/	1/	40

1/ Not projected.

During 1956/57-1961/62, Saudi Arabia's wheat flour imports, on a grain equivalent basis, constituted 71 percent of total wheat imports. During this period, the United States supplied three-fourths of Saudi Arabia's wheat flour needs but only about one-fifth of its wheat grain needs. Canada has been the dominant supplier of wheat grain, followed by the United States, Australia, Jordan, and Lebanon.

The United States probably supplied about 65 percent of the Saudi wheat import market on a grain equivalent basis in 1965, with U.S. exports consisting primarily of wheat flour. By 1970 Saudi Arabia is expected to have increased its milling capacity significantly. Thus, imports of wheat grain will be much higher and wheat flour correspondingly lower than projected in the AUB report. The U.S. share of the market will, of course, decline unless the United States is successful in increasing its share of the wheat grain market.

Saudi's imports of wheat grain from Canada have generally consisted of expensive grain of a quality high enough for seed purposes. As Saudi Arabia increases its wheat grain imports, it remains to be seen if the country will shift to a less expensive quality of grain.

The future success of the United States in increasing wheat grain sales to Saudi Arabia can only be conjectured. It is estimated that the United States will supply at least half of the Saudi wheat import market in 1970 and 1975. Wheat imports from the United States are therefore expected to be around 78,000 tons, grain equivalent, in 1970 and 80,000 tons in 1975 (table 11).

Cereals Other Than Wheat and Rice

Saudi Arabia's major cereal imports other than wheat and rice are millet, barley, and sorghum. Millet is used for both animal feed and human food. It is consumed in small quantities in the villages. A much larger share of the imported barley and sorghum is used in animal feed, principally by the recently developed but rapidly expanding poultry industry. With rising village incomes, wheat flour is being substituted for millet and sorghum; thus, use of these grains as food is likely to dwindle.

Imports of feed grain have been rising (table 12). This may be explained by (1) the relatively low profitability of producing these crops domestically and (2) the rising demand for grains due to the increasing number of livestock being raised on farms rather than by Bedouins.

Saudi Arabia has been obtaining the bulk of its sorghum and millet needs from the Sudan and most of its barley needs from Iraq. U.S. exports of cereals other than wheat and rice to Saudi Arabia have consisted of small quantities of barley and corn. In 1964 these exports totaled less than $60,000.

Saudi Arabia's import needs of sorghum, barley, and millet are expected to increase sharply through 1975. Imports of these grains, 39,031 tons in 1961/62, are projected at 105,000 tons by 1970 and 143,000 tons by 1975.

No projections of the U.S. share of the feed grain market have been made for 1970 or 1975. If present trends continue, its share will obviously be quite small. However, the Sudan and Iraq may be unable to supply all of Saudi Arabia's feed grain needs through 1975.

A detailed analysis of the competitive position of the United States with other feed grain suppliers of Saudi Arabia is not within the scope of this report. It appears, however, that Saudi Arabia is a good potential market for U.S. feed grains.

Table 11.--Saudi Arabia: Imports of wheat grain and wheat flour by country of origin, 1956/57-1961/62, and projections for 1965, 1970, and 1975

Year		Wheat flour		Wheat grain			Grain equivalent		
Gregorian	Arabic	Total	United States	Total	United States	Canada	Total	United States	U.S. imports as percentage of total
		1,000 metric tons							Percent
1956/57	1376	66.5	55.7	44.8	35.1	5.8	137.2	112.5	82
1957/58	1377	60.4	49.6	25.9	5.9	9.4	109.7	74.8	68
1958/59	1378	50.2	41.2	38.4	19.4	14.2	108.1	76.6	71
1959/60	1379	70.4	56.1	40.6	8.3	24.9	138.3	86.2	62
1960/61	1380	74.6	56.9	38.7	17.0	15.8	142.2	96.0	68
1961/62	1381	61.3	47.1	30.8	5.3	14.8	116.0	70.7	61
1965		69.0	--	42.0	--	--	138.0	90.0	65
1970		34.0	--	39.0	--	--	156.0	78.0	50
1975		99.0	--	24.0	--	--	160.0	80.0	50

Table 12.--Saudi Arabia: Imports of sorghum, barley, and millet, by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Sorghum			Barley			Millet		
Gregorian	Arabic	Total	Sudan	Other	Total	United States	Iraq	Total	United States	Sudan
		Metric tons								
1954/55	1374	2,742	702	2,040	5,254	0	2,604	1,263	0	116
1955/56	1375	227	113	94	16,230	0	14,428	2,677	26	91
1956/57	1376	8,571	8,339	232	14,581	0	10,619	17,166	10	15,308
1957/58	1377	4,156	4,156	--	11,410	0	8,651	4,553	10	3,279
1958/59	1378	5,220	5,208	12	21,044	1	18,691	12,620	49	9,451
1959/60	1379	6,163	5,863	300	27,879	2,856	5,553	18,319	1	17,818
1960/61	1380	5,931	5,824	107	38,584	14,930	5,439	30,735	10	30,316
1961/62	1381	2,167	2,167	--	16,057	311	13,966	20,807	11	20,672
1965		2,000	1/	1/	34,000	1/	1/	29,000	1/	1/
1970		4,000	1/	1/	64,000	1/	1/	37,000	1/	1/
1975		6,000	1/	1/	92,000	1/	1/	45,000	1/	1/

1/ Not projected.

Meat

While Saudi Arabia was a net exporter of live animals for food before 1949, it has become a heavy net importer in recent years. The nomadic Bedouin population, estimated at one-fifth of the total population, leads a pastoral life depending largely on livestock production for subsistence. It is believed that the number of livestock in Saudi Arabia has been decreasing as a result of the urbanization of Bedouins as well as the long periods of drought and lack of supplementary feeding. The droughts occur irregularly but may extend over 2 or more years. Such periods are characterized by heavy mortality rates among the livestock. For example, it is estimated that in 1958-59 at least 50 percent and possibly as much as 75 percent of the sheep in the Northern Province were lost, due partly to lack of supplementary feeding and partly to disease. Such recurrent losses have transformed the country into a net importer of livestock. It is estimated that about one-quarter of the total meat consumption of Saudi Arabia was met by imports in 1961/62.

Consumption of meat in Saudi Arabia is estimated at about 47,000 tons in 1960/61. Average annual consumption per capita for the whole country is over 15 kilograms. This is higher than in most African and Asian countries. But consumption is inflated considerably by the mass sacrificing of animals by pilgrims during the Adha feast in Mecca; animals slaughtered during this period may account for half of the total urban consumption.

Meat imports in 1965, 1970, and 1975 are expected to be around 20,000, 30,000, and 38,000 tons, respectively. The Government subsidizes imports of live animals and frozen meats. Most of the consumers favor meat from imported live animals; from 1959/60 to 1961/62, nearly 85 percent of the meat imports were in the form of live animals. During this period, approximately 75 percent of the live animal imports were of Somali origin; the rest were primarily from the Sudan.

Meat imports other than live animals are supplied primarily by the United States and Australia, although West Germany, Great Britain, and the Netherlands have also been consistent suppliers. Because of the absence of supervision over meat sanitation, the upper income groups primarily consume imported frozen meat. U.S. trade data show that meat exports to Saudi Arabia in 1964 amounted to $642,646. Poultry constituted 83 percent of this total.

U.S. exports of meat other than poultry have been minimal and are unlikely to increase significantly by 1975. The poultry market, though, has been a rapidly increasing one for American suppliers. U.S. exports of poultry to Saudi Arabia increased from $230,079 in 1961 to $530,978 in 1964.

Experiments with commercial poultry production began in the Eastern Province of Saudi Arabia around 1960. Despite the serious problem of providing feed, which must largely be imported, the experiments have proven quite successful. As yet, only a relatively limited market for fowl has been developed, primarily because of lack of facilities for slaughtering, freezing, storing, and marketing the frozen dressed fowl. Frozen dressed chickens from the United States can be imported into the market in large quantities almost as cheaply as chickens can be produced locally and marketed. With further progress, the necessary facilities and practices will likely be established and poultry imports by the Eastern Province will decline. However, the other provinces are expected to increase their poultry imports in the future.

U.S. meat exports to Saudi Arabia in 1965 will approach 900 metric tons. By 1970 exports are projected to increase to around 1,500 tons and by 1975 to 2,000 tons (table 13).

Table 13. --Saudi Arabia: Imports of meat and meat preparations by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		All imports	Live animals			Meat & meat preparations		
Gregorian	Arabic		Somali Republic	Sudan	Total	United States	Australia	Total
		1,000 metric tons						
1954/55	1374	3.3	0.2	0.2	1.0	1.2	1.1	2.3
1955/56	1375	4.5	1.2	1.5	3.0	.3	.9	1.5
1956/57	1376	7.5	.4	2.6	6.0	.6	--	1.5
1957/58	1377	5.1	1.0	1.3	3.9	.6	--	1.2
1958/59	1378	6.4	2.6	1.7	5.0	.3	.6	1.4
1959/60	1379	7.4	3.6	1.1	6.2	.3	.4	1.2
1960/61	1380	8.3	5.6	1.2	7.5	.3	.2	.8
1961/62	1381	10.8	7.7	1.5	9.8	.3	.4	1.0
1965		20.0	1/	1/	1/	.9	1/	1/
1970		30.0	1/	1/	1/	1.5	1/	1/
1975		38.0	1/	1/	1/	2.0	1/	1/

1/ Not projected.

Vegetables

Canned vegetables (and all other canned foods) are wholly of foreign origin and are in high demand by the foreign community and the higher income groups in urban centers. Imports of canned vegetables are projected to increase from around 15,000 tons in 1965 to 21,000 tons in 1970 and 26,000 tons in 1975.

Saudi Arabia imports most of its canned vegetables from Italy. Imports from the United States during 1958/59-1961/62 amounted to 6 percent of total imports on a quantity basis and 11.5 percent on a value basis. Should the United States retain its past share of the market, it may expect to supply Saudi Arabia with around 1,000 tons of canned vegetables in 1965, 1,500 tons by 1970, and 1,800 tons by 1975 (table 14).

The AUB report projects Saudi Arabia's imports of fresh vegetables[2/] to decline from 107,000 tons in 1965 to 99,000 tons in 1970 and to 0 in 1975. Saudi Arabia is expected to be self-sufficient in fresh vegetables by 1975, not because of declining demand, but because of rapidly increasing production.

Saudi Arabia obtains the majority of its fresh vegetable needs from the United Arab Republic (Egypt), Ethiopia, Lebanon, and Jordan. During 1958/59-1961/62, the United States supplied 1 percent of the market on a volume basis and 3.5 percent on a value basis. U.S. fresh vegetable exports to Saudi Arabia are expected to remain minimal through 1975.

Fruits

Per capita consumption of canned fruits and fruit preparations is well below per capita consumption of canned vegetables. The projected import needs for canned fruits and fruit preparations are 6,000 tons in 1965, 9,000 tons in 1970, and 11,000 tons in

2/ Fresh vegetable imports include lentils, broad beans, peas, beans, potatoes, onions, garlic, and other dry legumes.

Table 14. --Saudi Arabia: Imports of canned vegetables by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Total	United States	Italy
Gregorian	Arabic			
		Metric tons		
1954/55	1374	3,474	77	2,814
1955/56	1375	5,406	145	4,894
1956/57	1376	8,428	1,249	3,768
1957/58	1377	7,632	495	3,304
1958/59	1378	8,629	645	6,097
1959/60	1379	8,791	430	6,388
1960/61	1380	8,045	382	5,920
1961/62	1381	11,881	650	8,839
1965		15,000	1,000	1/
1970		21,000	1,500	1/
1975		26,000	1,800	1/

1/ Not projected.

1975. From 1954/55 to 1961/62, the United States consistently supplied around 30 percent of this market on a volume basis (33 percent on a value basis). It is projected that the United States will retain this percentage through 1975. U.S. exports of canned fruit and fruit preparations to Saudi Arabia are therefore placed at 1,800 tons in 1965, 2,700 tons in 1970, and 4,500 tons in 1975 (table 15). These projections may be optimistic, however. The United States primarily exports concentrated frozen fruit juices to Saudi Arabia. Should the North African countries become important exporters of frozen fruit juices, the United States could lose a good portion of this market.

Table 15. --Saudi Arabia: Imports of canned and fresh fruits by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Canned fruit				Fresh fruit			
Gregorian	Arabic	Total	United States	Bahrein	United Kingdom	Total	United States	Syria	Ethiopia
		Metric tons							
1954/55	1374	2,481	528	539	89	11,094	3	2,681	1,933
1955/56	1375	5,629	2,385	1,585	333	21,543	2	6,254	2,382
1956/57	1376	4,820	1,364	1,086	303	15,852	27	2,392	3,071
1957/58	1377	4,460	960	1,361	361	15,445	34	1,088	4,381
1958/59	1378	5,661	1,924	1,285	671	24,862	34	7,150	1,807
1959/60	1379	3,645	779	600	418	29,433	9	8,014	5,214
1960/61	1380	3,533	920	576	255	26,980	32	7,612	6,744
1961/62	1381	3,872	946	549	142	29,892	20	6,005	5,993
1965		6,000	1,800	1/	1/	62,000	1/	1/	1/
1970		11,000	2,700	1/	1/	87,000	1/	1/	1/
1975		11,000	4,500	1/	1/	94,000	1/	1/	1/

1/ Not projected.

The import demand for fresh fruit is projected to increase from 62,000 tons in 1965 to 87,000 tons in 1970, and to 94,000 tons in 1975. The United States is not expected to be a significant supplier of fresh fruits to Saudi Arabia through 1975. Historically, the United States has supplied less than 1 percent of this market. Syria, Ethiopia, the United Arab Republic, Lebanon, and Jordan currently supply nearly all of Saudi Arabia's fresh fruit needs.

Dairy Products

In Saudi Arabia milk is obtained from sheep, goats, camels, and cows, with cow milk important only in the cities and towns. However, the supply of milk falls very short of the demand in all parts of the country. The development of a dairy industry is inhibited by problems of building up herds, obtaining adequate supplies of fodder, and effecting satisfactory handling of milk.

Saudi Arabia's major dairy import is canned milk, the closest substitute for fresh whole milk. The import demand for this product is projected at 8,000 tons in 1965, 12,000 tons in 1970, and 15,000 tons in 1975 (table 16).

The canned milk market is supplied primarily by the Netherlands. The United States is not expected to be a significant supplier of condensed or evaporated milk to Saudi Arabia by 1975.

Both the AUB report and this summary group fats (consisting of vegetable oil shortenings) and butter together in the projections. The projected levels for 1965, 1970, and 1975 are 11,000, 15,000, and 18,000 tons (table 17). Imports of fats greatly exceed imports of butter.

The United States has a small share of the fats and butter market. In 1964, U.S. exports of butter to Saudi Arabia reached only $77,000 while fats totaled $76,000. The Netherlands, one of the largest U.S. customers for vegetable oils and seeds, is the major supplier of the Saudi market for fats and butter. The explanation for this paradox seems to lie in the fact that a leading Dutch producer has perfected an artificial ghee; this product consists of vegetable oil, but it embodies the taste and odor of the natural ghee to which the local population has become accustomed.

The fats and butter market is likely to remain a small one for U.S. suppliers through 1975. Accordingly, no projections of the future U.S. share are made.

Vegetable Oils

Saudi Arabia has no commercial oilseed-crushing industry; consequently, the country imports processed oils to meet its needs. Should crushing facilities be installed by 1970 or 1975, imports would of course be in the form of oilseeds rather than processed oils. Such an industry would probably not be established until the livestock industry were developed to the point where it could absorb the resulting oilcake.

The country's import needs of vegetable oils are projected at 2,000 tons in 1965, 3,000 tons in 1970, and 4,000 tons in 1975 (table 18). Saudi Arabia has obtained most of its vegetable oil needs from the Sudan--primarily cottonseed oil. The United States has been supplying a very small share of this market. This summary indicates the probable market potential for vegetable oils in the future, but as with other products makes no projections of the U.S. share for the next decade.

Table 16.--Saudi Arabia: Imports of canned milk by country of origin, 1954/55-1961/62, and projections for 1962, 1970, and 1975

Year		Total	United States	Netherlands	Bahrein
Gregorian	Arabic				
		Metric tons			
1954/55	1374	9,358	33	986	7,924
1955/56	1375	4,178	259	2,907	762
1956/57	1376	4,077	154	2,797	398
1957/58	1377	2,806	303	1,470	533
1958/59	1378	3,887	141	2,710	408
1959/60	1379	4,055	143	2,811	691
1960/61	1380	4,413	258	3,386	205
1961/62	1381	4,912	218	4,014	66
1965		8,000	1/	1/	1/
1970		12,000	1/	1/	1/
1975		15,000	1/	1/	1/

1/ Not projected.

Table 17.--Saudi Arabia: Imports of fats and butter by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Total	United States	Netherlands
Gregorian	Arabic			
		Metric tons		
1954/55	1374	5,474	147	4,361
1955/56	1375	5,244	100	4,093
1956/57	1376	7,238	108	5,737
1957/58	1377	4,618	100	3,728
1958/59	1378	7,560	41	6,472
1959/60	1379	11,840	35	9,614
1960/61	1380	9,022	70	7,364
1961/62	1381	8,547	73	7,607
1965		11,000	1/	1/
1970		15,000	1/	1/
1975		18,000	1/	1/

1/ Not projected.

Table 18. --Saudi Arabia: Imports of vegetable oils by country of origin, 1954/55-1961/62, and projections for 1965, 1970, and 1975

Year		Total	United States	Sudan	Syria and Lebanon	Netherlands
Gregorian	Arabic					
				Metric tons		
1954/55	1374	1,236	21	478	12	19
1955/56	1375	1,640	25	1,026	59	161
1956/57	1376	1,938	8	979	36	172
1957/58	1377	1,341	127	638	88	56
1958/59	1378	2,326	6	1,207	201	198
1959/60	1379	2,265	31	898	234	104
1960/61	1380	1,675	9	782	133	96
1961/62	1381	1,589	33	724	144	106
1965		2,000	1/	1/	1/	1/
1970		3,000	1/	1/	1/	1/
1975		4,000	1/	1/	1/	1/

1/ Not projected.

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