Summary and Evaluation of

THE PHILIPPINES:

Long-term Projection of Supply of and Demand for

SELECTED AGRICULTURAL PRODUCTS

(ERS-FOREIGN-34)

WITH IMPLICATIONS FOR U.S. EXPORTS

ERS-FOREIGN-58

U.S. DEPARTMENT OF AGRICULTURE ● ECONOMIC RESEARCH SERVICE ● REGIONAL ANALYSIS DIVISION

PREFACE

In May 1960 the United States Department of Agriculture executed a long-term projection research contract with Mercantile Inc. (Robot Statistics Division), Manila, Philippines. The research constitutes a part of the Department's effort to evaluate the long-term prospects for the supply of and demand for agricultural products throughout the world. In specific terms, the study was initiated to determine the long-term projections of supply and demand in the Philippines for selected agricultural commodities, and to assess the country's import demand for these commodities in 1965 and 1975.

The above research study was published by the U. S. Department of Agriculture under the title: "The Philippines: Long-term Projection of Supply of and Demand for Selected Agricultural Products" (ERS-Foreign-34), in March 1963.

The major findings of the above report are now summarized in this shorter report. The conclusions are set forth, and the implications of the projections to U. S. agriculture are presented.

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November 1963

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Summary and Evaluation of the Philippines: Long-term Projection of Supply and Demand for Selected Agricultural Products (ERS-Foreign-34) With Implications for U. S. Exports

by

James F. Keefer, International Agricultural Economist
Regional Analysis Division, Economic Research Service

SUMMARY

General Economy

Substantial growth and shifts are projected for the Philippine economy. Population is projected to increase at an annual rate of over 3 percent and there is to be a shift to the urban areas. Population should reach about 32.7 million by 1965 and approximately 45.1 million by 1975. By 1975, 34 percent of the total population will be living in urban areas.

In 1956 prices, aggregate gross domestic product should reach ₱14,246 million by 1965 and ₱24,675 million by 1975 (table 1). 1/ This implies annual rates of growth of 4.57 percent from 1959 to 1965 and 5.24 percent from 1965 to 1975. In turn, per capita gross domestic product should increase about 1.5 percent annually from 1959 to 1965 and slightly over 2 percent yearly from 1965 to 1975.

The growth and growth rates of the general economy will have an important impact upon import requirements and import capability. Allowing for a reasonable degree of import substitution, the total Philippine import requirement will increase from about ₱1,168 million in 1956 to over ₱2,650 million by 1975 (table 2). With the capacity to import increasing at a lower absolute figure, the excess of import requirements over the capacity to import is projected to reach about ₱143 million in 1965 and to total over ₱812 million in 1975. If the projected import requirements for 1965 and 1975 were to be contained within the projected capacity to import, domestic production of raw materials and intermediate products would need to increase at an approximate rate of 6 percent per annum from 1956 to 1975.

1/ ₱ = Philippine peso. During the preparation of this study the official exchange rate for the Philippine peso was ₱2 to $1 (US). Projections were calculated in constant 1956 prices at the above ratio unless otherwise stated.

Agriculture

The specified projections for agriculture were related to eight agricultural commodities; rice, corn, wheat, meat, milk, tobacco, cotton, and tallow. In 1956 these eight commodities and their products contributed about one-fifth of the country's aggregate gross domestic product (table 3). They accounted for 75 percent of consumption of agricultural products. Imports of these agricultural commodities and their products totaled ₱299.7 million, or 8.4 percent of the domestic demand.

Imports from the United States and other foreign sources accounted for a significant volume of all eight selected commodities and their products during the 1955-61 period. Nevertheless, no imports of milled rice, shelled corn, wheat flour, and tobacco are projected for either 1965 or 1975 (tables 4 and 5). By 1965, imports of wheat flour are projected to shift completely to wheat grain. By 1975, imports of meat and meat products are projected to shift almost completely from processed and canned meats to livestock for slaughter and fresh and frozen meats. Cotton imports will shift from cotton products to raw cotton.

The above brings into focus some major implications for U. S. agricultural exports. By 1975, Philippine imports of the selected agricultural commodities from the United States are expected to experience a net increase of over $25.3 million from the 1955-57 average. This includes import gains of approximately $20.9 million for raw cotton, $4.8 million for milk and dairy products, $8.7 million for wheat, and $0.4 million for tallow. Offsetting these gains were losses of nearly $6 million for leaf tobacco (not including cigarettes), over $3 million for meat and meat products, $0.3 million for shelled corn, and $0.2 million for milled rice. A loss is also expected of $21.4 million for cotton textiles and $0.7 million for tobacco products (cigarettes only).

The Payne-Aldrich Tariff Act of 1909 first inaugurated preferential Philippine trade with the United States, and preferential legislation has continued, resulting in unusually close commercial ties between the two countries. However, with gradually diminishing preferential treatment under the Laurel-Langley Agreement of 1955, and with the implementation of new and relatively more restrictive trade measures by the Philippine Government, U. S. agricultural commodities can be expected to face increasing competition.

An intensification of competition can be expected from Canada and Australia in the case of wheat. Australia, Argentina, and perhaps Brazil, can be expected to increase competitive pressure for the Philippine market for meat and meat products. Also to be expected is increased competition from Mexico and several other countries for the raw cotton market, and with New Zealand, the Netherlands, and Denmark for dairy products. If West European countries boost their purchases of Philippine products, Philippine agricultural imports from this region of the world may increase.

Since 1954, U. S. agricultural exports to the Philippines under specified government programs have exhibited a general upward trend in both absolute and relative terms (table 6). A major share of these exports has been three commodities that are projected to increase substantially in total imports by 1975; wheat, raw cotton, and dairy products. The study shows Philippine import requirements increasing faster than her import capabilities. If this trend is not altered through import substitution, Philippine agricultural imports under U. S. government programs are expected to continue.

Table 1.--Philippine economy: Economic growth, 1959, and projections for 1965 and 1975

Item	1959	1965	1975
		1,000 persons	
Population	27,353	32,720	45,139
		Million pesos 1/	
Gross domestic product	10,892	14,246	24,675
Terms-of-trade-effect	74	0	0
Gross income	10,966	14,246	24,675
Net inflow, foreign capital	-144	+34	+56
Available goods and services	10,822	14,280	24,731
Consumption	9,897	13,056	22,065
Personal	8,951	11,845	20,353
Government	946	1,211	1,712
Investments	925	1,224	2,666
Fixed	849	1,100	2,327
Inventory increase	76	124	339
		Pesos 2/	
Per capita domestic figures			
Gross product	398	435	546
Gross income	401	435	546
Available goods and services	396	436	548
Consumption	362	399	489
Investments	34	37	59
Other signification figures			
Coefficient of total investment	2/9.05	3/8.59	4/10.84
Coefficient of total gross fixed investment	2/8.07	3/7.72	4/ 9.41
Capital-output ratio			
Total investment	2/2.0	3/1.88	4/ 2.0
Fixed investment	2/1.8	3/1.69	4/ 1.8

1/ Based on 1956 prices; exchange rate, ₱2=$1 (US).
2/ 1956-1959 average.
3/ 1959-1965 average.
4/ 1959-1975 average.

Table 2.--Philippines: Import requirement and import capacity, 1956, and projections for 1965 and 1975 1/

Item	1956	1965	1975
	- - - - Million pesos 2/ - - - -		
Import requirement:			
Merchandise (f.o.b.)	1,012	1,398	3/2,320
For final use	621	786	1,179
For intermediate use	391	612	1,140
Services	156	3/198	330
Foreign travel	27	40	69
Philippine government expense	11	14	20
Insurance and freight	118	143	241
Total	1,168	1,596	2,650
Capacity to import			
Quantum of exports of goods and services	1,225	1,418	1,781
Terms-of-trade effect	0	0	0
Inflow of foreign capital	165	214	121
Total payments capacity	1,390	1,632	1,902
Remittances of profits and interests	131	4/146	5/ 0
Outflow of capital	14	6/138	6/125
Capacity to import	1,245	1,348	1,777
Donations	78	105	60
Total capacity to import plus donation	1,323	1,453	1,837
Surplus (deficit)	155	(143)	(813)

1/ With import substitution. Projections without import substitution are not shown.

2/ Based on 1956 prices; exchange rate, ₱2=$1 (US).

3/ Items do not equal subtotals due to rounding.

4/ Remittances of profits only.

5/ It is assumed that private capital reinvestments offset remittance.

6/ Including interest and amortization of outstanding and new loans.

Table 3.--Philippines: Value of production of selected agricultural commodities and their products, 1956

Commodity	Value
	1,000 Pesos
Rice (rough)	561,594
Corn	102,550
Cotton	160
Virginia tobacco	37,167
Native tobacco	6,348
Meat from slaughter houses (includes home slaughtering)	311,697
Livestock and dairy	642,109
Wheat	0
Tallow	0
Total	1,661,625
Processed agricultural commodity	
Preserved, prepared meat	407
Dairy products	5,465
Rice milling	48,961
Corn milling	4,295
Bakery	34,552
Vermicelli and noodles	605
Starch and by-products	2,817
Tobacco	70,910
Cotton textile mills	16,692
Knitting mill products	12,113
Wearing apparel	27,261
Total	224,078
Grand total	1,885,703
Gross domestic product	9,537,000
Percentage of gross product	19.77

Table 4.--Philippines: Imports of selected agricultural commodities, total and U.S., by value for specified periods

Commodity	1955-57	1958	1959	1960	1961	1965	1975	Net change 1955-57 to 1975
	1,000 dollars							1,000 dollars
Rice, milled								
Total	5,636	20,747	859	.054	1,097	0	0	- 5,636
U. S.	157	6,843	859	.010	.010	0	0	- 157
Percent U. S.	2.8	33.0	100.0	18.5	0.0	0.0	0.0	
Corn (shelled)								
Total	329	1,064	0	.187	9	0	0	- 329
U. S.	329	0	0	.187	9	0	0	- 329
Percent U. S.	100.0	0.0	0.0	100.0	100.0	0.0	0.0	
Wheat 1/								
Total	24,363	28,765	18,552	21,987	24,714	16,654	26,206	+ 1,843
U. S.	10,938	19,249	8,922	11,213	17,805	11,658	19,655	+ 8,717
Percent U. S.	44.9	66.9	48.1	51.0	72.0	70.0	75.0	
Cotton (raw)								
Total	3,712	8,407	14,201	17,076	19,453	15,458	25,750	+22,038
U. S.	3,576	8,407	13,358	16,436	19,176	14,840	24,463	+20,887
Percent U. S.	96.3	100.0	94.1	96.3	98.6	96.0	95.0	
Cotton products 2/								
Total	34,945	25,948	18,579	16,285	10,676	34,651	0	-34,945
U. S.	21,418	13,507	9,940	10,835	8,130	24,256	0	-21,418
Percent U. S.	61.3	52.1	53.5	66.5	76.2	70.0	0.0	
Meat and meat products 3/								
Total	8,250	9,918	5,686	6,160	4,400	6,786	4,056	- 4,194
U. S.	3,136	1,529	188	439	138	339	122	- 3,014
Percent U. S.	38.0	15.4	3.3	7.1	3.1	5.0	3.0	
Live animals 4/								
Total	1,304	994	232	275	275	1,112	2,035	+ 731
U. S.	0	0	0	0	0	0	0	0
Percent U. S.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Milk and dairy products 5/								
Total	28,812	26,221	18,627	25,439	24,509	24,875	39,840	+11,028
U. S.	19,135	19,142	10,990	17,035	14,026	16,169	23,904	+ 4,769
Percent U. S.	66.4	73.0	59.0	67.0	57.2	67.0	60.0	
Tobacco 6/								
Total	5,989	2,636	61	400	145	0	0	- 5,989
U. S.	5,981	2,630	58	368	111	0	0	- 5,981
Percent U. S.	99.9	99.8	95.1	92.0	76.6	0.0	0.0	
Cigarettes								
Total	706	110	55	55	17	0	0	- 706
U. S.	703	7/110	7/55	7/55	12	0	0	- 703
Percent U. S.	99.6	100.0	100.0	100.0	70.0	0.0	0.0	
Tallow								
Total	1,138	1,062	1,112	958	1,358	1,214	1,566	+ 428
U. S.	1,136	1,061	1,110	958	1,342	1,202	1,550	+ 414
Percent U. S.	99.8	100.0	99.8	100.0	98.8	99.0	99.0	

1/ Wheat includes total value of wheat and wheat flour. 2/ Cotton products includes cotton fabrics of standard type (unbleached) and other fabrics other than grey (bleached, dyed, mercerized, printed or otherwise), including flannelette cotton fabrics. 3/ Meat and meat products does not include live animals. 4/ Although Philippine projection figures seem to include imports of live animals for food from U. S., official U. S. figures do not indicate such U. S. exports. 5/ Total of milk and milk equivalent of dairy products. 6/ Tobacco excludes cigarettes. 7/ Small quantities of imports from other countries not shown due to rounding.

Note: In some cases the rounding of figures resulted in the U. S. share of total Philippine imports equalling 100 percent when small amounts were imported from other countries. Imports were projected for 1965 and 1975 at 1956 peso prices and converted into U. S. dollars at a ratio of ₱2=$1 (U.S.).

Calculated from The Philippines Long-term Projections of Supply of and Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.

Table 5.--Philippines: Projections of supply-demand balances for selected Philippine agricultural commodities, 1965 and 1975

Commodity	Total demand		Domestic production		Total imports	
	1965	1975	1965	1975	1965	1975
	1,000 metric tons					
Rice (milled)	2,427.3	3,465.2	2,427.3	3,465.2	0	0
Corn (shelled)	1,447.1	1,983.3	1,447.1	1,993.3	0	0
Wheat						
Flour	0	0	1/ 234.9	1/ 385.4	0	0
Grain	326.3	535.3	0	0	326.3	535.3
Meat and meat products						
Livestock	375.7	564.4	370.4	554.7	5.3	9.7
Fresh/frozen	180.9	278.7	173.8	269.7	7.0	9.0
Processed/canned	12.1	20.1	8.9	20.1	3.2	0
Dairy products 2/	338.9	536.0	136.6	199.3	202.3	336.7
Tobacco						
Virginia	39.3	59.4	39.3	59.4	0	0
Native	24.7	35.8	24.7	35.8	0	0
Cotton						
Raw	39.5	68.5	1.4	2.9	38.1	65.7
Cotton products	43.9	68.5	39.5	68.5	4.4	0
Tallow	7.9	10.3	0	0	7.9	10.3

1/ Wheat flour equivalent base on milling recovery rate of 72 percent by weight.

2/ Whole milk equivalent.

Table 6.--United States: Agricultural exports to the Philippines under specified government programs by value, fiscal year 1954-55 through 1961-62

Period	Public Law 480				P. L. 665 Section 402	Agr. exports under specified government programs	Agr. exports not under specified government programs	Total agr. exports	Percentage of total under government programs
	Title I	Title II	Title III						
	Sales for foreign currency	Famine and other emergency relief	Foreign donations	Barter					
	1,000 dollars								
1954-55 ...	0	0	475	0	0	475	57,960	58,435	.8
1955-56 ...	0	0	692	0	8,905	9,597	45,126	54,723	17.5
1956-57 ...	0	0	1,651	26	19,924	21,601	36,527	58,128	37.6
1957-58 ...	8,612	0	3,755	392	15,101	27,860	38,280	66,140	42.1
1958-59 ...	4,060	0	4,937	4,396	14,150	27,543	40,897	68,440	40.2
1959-60 ...	0	0	3,475	2,090	6,850	12,415	47,134	59,594	20.9
1960-61 ...	0	0	4,621	535	13,364	18,520	52,826	71,346	35.1
1961-62 1/	14,619	0	5,969	1,988	8,026	30,602	40,449	71,051	43.1

1/ Preliminary.

Foreign Agricultural Trade of the United States.

RICE

Rough rice or palay accounts for about 40 percent of the total agricultural production of the Philippines. The soil and climatic conditions are suitable for growing rice throughout the country. The most important rice producing regions are the central plain of Luzon, the Cagayan Valley, and the delta lands of the West Visayan Islands. These three regions produce about 55 percent of the nation's total crop. However, in these major rice areas only about 30 percent of the land is now irrigated.

Most farmers in the country cultivate rice. It is planted and harvested in varying amounts throughout most of the year. However, about 52 percent of the rice is harvested in the October-December period.

Numerous steps have been taken in recent years to bring about an increase in average yields. During the past 5 years two improved methods of rice culture have been introduced: the Masagana and Margate systems. The uniform straight spacing of the Masagana and the Margate methods allows for easy semi-mechanical weeding. The traditional cultural method usually requires about 42 kilograms of seeds to plant a hectare, as against 17 kilograms for the Masagana, and approximately 8 kilograms for the Margate systems. During the 1959-60 crop year there were some 89,000 rice farmers using the Masagana system. These farmers cultivated some 140,000 hectares and obtained an average yield of some 2.4 metric tons per hectare. The Margate system has not been adopted as rapidly as the Masagana system since the latter is being demonstrated and propagated by the government.

In addition to its efforts to extend the adoption of the Masagana system, the Philippine Government initiated a subsidy program for rice production in 1958. The program emphasizes research and experimentation on varieties and the distribution of fertilizers and certified seeds at less than open market prices. To date the program has succeeded in distributing about 880 metric tons of certified seed of the high-yielding varieties recommended by the Seed Board. In addition to the seed program, about 2 million bags of fertilizer have been distributed under the government program.

Other programs such as improved marketing facilities and land sharing systems have not yet become successful. In 1952, the marketing system for rice was reorganized through the formation of agricultural marketing cooperatives. Under this program, farmers obtained loans for production and marketing of agricultural crops from the Agricultural Credit and Cooperative Financing Administration (ACCFA). However, due to administrative problems the ACCFA loan program has declined rapidly since 1957. Loans granted to rice producers in fiscal year 1960 dropped to ₱3.2 million; nearly ₱39.8 million below 1958. Likewise, the ability of the tenant farmer to shift to a more favorable sharing system has been limited by social inhibitions and the shortage of necessary, complementary measures such as production credit.

In the Philippines rice milling is one of the major industries. There are approximately 4,130 rice mills located throughout the country. However, a substantial amount of palay is still hand-pounded. The current distribution of rice mills is as follows:

Type of rice mill	Percentage of total rough rice production	Percentage recovery rate (Weight)	Aggregate daily capacity (1,000 metric tons rough rice)
Kiskisan	52.4	62	9,680
Cono	9.2	70	1,320
Satake	(negligible)	70	(negligible)
Hand-pounding	19.3	45	---

With the recent introduction of "baby" cono mills, the shift from kiskisan to cono type mills is expected to accelerate.

Between 1939 and 1959, the area planted to rice expanded at an average annual rate of 2.5 percent reaching a total of 2,971,000 hectares in 1959. During the last decade, however, the expansion in area planted has been largely due to the increase in upland rice. The area planted to lowland rice (first and second crops) only increased by 90,000 hectares from 1953 to 1959. Over the same period, the area planted to upland rice increased by 236,000 hectares. This pattern of expansion suggests that the available lowland area for rice production may approach exhaustion by 1975. Irrigated lowland devoted to rice has increased only very moderately since 1959. The national average yield per hectare has remained rather stable; increasing by about 116 kilograms per hectare from 1939 to 1959 (table 7). However, the joint efforts of governmental programs and the International Rice Research Institute at the College of Agriculture, University of the Philippines, to bring about an increase in average yields are expected to soon be showing worthwhile results.

Projections

It is assumed that approximately 300,000 hectares and one million hectares will be cultivated under improved systems by 1965 and 1975 respectively, and that the area planted to upland rice will continue to expand at the rate observed from 1939 to 1959.

On this basis, the projections indicate that the average yield per hectare will increase from a 1959 level of 1.24 metric tons to 1.40 metric tons by 1975. From a 1960 base, the planted area for 1975 is expected to total over 4.7 million hectares with a total production of some 6.6 million metric tons (table 8). If achieved, this will be a fairly significant increase in average yield. Based upon the above projections of rough rice, milled rice production is projected to reach 2,646,000 metric tons by 1965 and 3,887,000 metric tons by 1975; an increase of 26 and 86 percent respectively over 1960.

Implications

During the past decade annual rice imports have varied from negligible quantities in some years to a high of 230,669 metric tons in 1958 (table 9). The United States supplied some share of the imports in all years reaching a high of 48,897 metric tons in 1958.

Barring abnormal weather conditions which would wipe out stock additions and small stockpiles, no imports of rice have been projected for 1965 or 1975. At best, the United States can expect only a restricted market for rice in the Philippines during the decade ending in 1975. Nevertheless, it is probable that there will be some market in the Philippines for U. S. quality and specially processed rice.

Table 7.--Philippines: Area planted and yield of rice, by type of area, 1939 and 1959, with average annual rate of increase in planted area, 1939 to 1959

Type of area	Area planted and yield per hectare				Annual rate of increase in area planted 1939-59
	1939		1959		
	1,000 hectares	Metric tons	1,000 hectares	Metric tons	Percent
Lowland: 1st crop ..	1,290.6		1,817.3		1.72
Irrigated	494.1	1.33	545.0	1.83	0.49
Unirrigated	796.5	1.04	1,272.3	1.30	2.13
Lowland: 2nd crop ..	116.3		334.1		5.43
Irrigated	76.9	.89	149.3	1.68	3.35
Unirrigated	39.4	.70	184.8	1.09	8.10
Upland	423.1	.70	819.4	.69	3.36
Total	1,830.0		2,970.8		2.5
Average		1.13		1.24	

Table 8.--Philippines: Projections of area planted, yield per hectare, and production, by type of rice farming, 1965 and 1975, with 1960 comparison

Type of farming	Yield per hectare 1/	Area planted			Production		
		1960	1965	1975	1960	1965	1975
Masagana/Margate system with fertilizer and certified seeds	Metric tons	- - - 1,000 hectares - - - -			- - - 1,000 Metric tons		
Lowland		140.0	214.1	705.7	350.2	536.5	1,704.5
First crop		110.0	173.3	516.0	281.6	444.2	1,300.0
Irrigated	3.5	30.0	47.7	124.7	105.6	167.9	439.0
Unirrigated	2.2	80.0	125.6	391.3	176.0	276.3	861.0
Second crop		30.0	40.8	109.7	68.6	92.3	404.5
Irrigated	3.1	12.0	15.5	53.5	36.9	47.8	164.8
Unirrigated	1.8	18.0	25.3	136.2	31.7	44.5	239.7
Upland	1.3	n.a.	85.8	294.2	n.a.	113.2	388.3
Total		140.0	299.9	999.9	350.2	649.7	2,092.8
Other than Masagana/Margate							
Lowland		2,254.5	2,280.6	2,627.0	2,818.2	3,359.4	3,750.0
First crop		1,912.6	1,845.5	1,920.9	2,428.5	2,771.6	2,842.0
Irrigated	2.0	576.6	508.2	464.1	908.6	1,006.3	919.0
Unirrigated	1.3	1,336.0	1,337.3	1,456.8	1,519.9	1,765.3	1,928.0
Second crop		341.9	435.1	706.1	389.7	587.8	908.0
Irrigated	1.8	154.2	165.5	199.1	217.6	291.3	350.4
Unirrigated	1.1	107.7	269.6	507.0	172.1	296.5	557.6
Upland	0.7	911.0	913.5	1,095.0	571.1	643.1	770.9
Total		3,165.5	3,194.1	3,722.0	3,389.3	4,002.5	4,520.9
Grand total		3,305.5	3,494.1	4,721.9	3,739.5	4,652.2	6,613.7

1/ These figures apply to 1965 and 1975 only. n.a. means not applicable.

Table 9.--Philippines: Rice imports by country of origin, 1951-1961 and projections for 1965 and 1975

Year	Total imports	United States	Thailand	Burma	South Vietnam	Cambodia	Pakistan	Other 1/
	Metric tons							
1951	129,849.3	36.2	129,811.2	0.0	0.0	0.0	0.0	1.9
1952	63,122.5	3,250.8	29,949.1	29,922.3	0.0	0.0	0.0	0.3
1953	0.9	0.1	0.2	0.0	0.0	0.0	0 0	0.6
1954	42,629.0	3.6	15,000.0	0.0	0.0	0.0	27,624.4	1.0
1955	63,517.6	1,104.7	50,475.5	11,937.3	0.0	0.0	0.0	0.1
1956	42,401.0	1,370.4	24,670.8	0.0	0.0	0.0	0.0	16,359.8
1957	78,804.2	1,930.0	62,821.0	0.0	2,500.0	5,400.0	0.0	6,153.2
1958	230,668.7	48,896.5	131,323.0	5,200.0	32,639.2	12,609.5	0.0	0.5
1959	6,501.7	6,501.7	0.0	0.0	0.0	0.0	0.0	0.0
1960	0.3	0.3	0.0	0.0	0.0	0.0	0.0	2/
1965	0.0	3/	3/	3/	3/	3/	3/	3/
1975	0.0	3/	3/	3/	3/	3/	3/	3/

1/ Includes sizable imports from Portugal and Spain in 1956 and 1957, respectively, and small, but frequent imports from Hong Kong and Japan.

2/ Negligible.

3/ Since no Philippine rice imports have been projected for 1965 and 1975, imports from source countries are assumed to be negligible, if any.

The Philippines: Long-term Projection of Supply of Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.

CORN

Until recently, corn production had been a relatively minor agricultural activity in the Philippines. Between 1915 and 1949, there was little change in production. The annual average outturn remained more or less stationary at about 400,000 metric tons. However, from 1950 to 1960, the annual harvest almost tripled, reaching a 1960 level of 1,165 thousand metric tons.

Although the crop is grown throughout the country, the major producing areas are on the Visayas Islands and Mindanao. These two areas account for more than 78 percent of total output. Most of the corn is of the flint type. Both yellow and white varieties are produced; the white for food and the yellow for feed. It is estimated that two-thirds is white corn.

The country's traditional methods of corn culture are relatively simple. Most farmers show little concern for seed selection or the use of improved cultural techniques. However, during the last 5 years an improved planting system, known in the Philippines as the Masagana system, has been introduced and is being demonstrated by the Bureau of Agricultural Extension. This system requires the application of fertilizers, the planting of corn in straight, uniform furrows, and intensive cultivation.

In 1958, the government initiated a corn production program, under which the government distributes fertilizers and hybrid seed to farmers at less than open market prices. About 10,000 hectares of land planted to corn have been fertilized under the program. However, due to the lack of seed stock, the distribution of hybrid seeds has been negligible.

It is estimated that about 70 percent of the total Philippine corn crop is either milled or converted into starch. There are some 600 corn mills in the country with an aggregate annual capacity of about 515,000 metric tons. All but two mills are of the fairly simple, dry-grain type. These mills are estimated to have an average recovery rate of approximately 57 percent ground corn meal with byproducts and losses constituting 27.6 and 15.4 percent respectively. The other two mills are of the more intricate wet-process type. They have a total annual capacity of some 50,000 tons. Their output is composed of about 60 percent starch, 10 percent feedstuffs, and 30 percent various other byproducts.

Since 1946, the United States has been the major supplier of Philippine's limited imports of corn (table 10). Excluding the exceptional year of 1958, when British Africa supplied all of the Philippine corn imports, the United States accounted for over 99 percent of the country's corn imports between 1950 and 1960.

Projections

It is projected that the 1975 production of shelled corn will reach a record level of 2,565,000 metric tons; 66 percent over the projected figure for 1965 and 120 percent over the 1960 production of some 1,165,000 metric tons. The historical trends in planted area, yields and production, as well as projections for 1965 and 1975, are shown in table 11.

Table 10.--Philippines: Shelled corn imports, quantity by country of origin; 1946-1961, and projections for 1965 and 1975

Year	Total	United States	British Africa	Communist China	Others 1/
	Metric tons				
1946	10.1	10.1	0.0	0.0	0.0
1947	3,187.4	3,187.4	0.0	0.0	0.0
1948	1,178.3	1,129.2	0.0	49.1	0.0
1949	7,964.6	6,895.3	0.0	1,035.6	33.7
1950	6,626.5	6,626.5	0 0	0.0	0.0
1951	458.6	458.6	0.0	0.0	0.0
1952	30.1	30.1	0.0	0.0	0.0
1953 2/.....	11.0	11.0	0.0	0.0	0.0
1954	15.6	14.6	0.0	0.0	1.0
1955 2/.....	8.8	8.8	0.0	0.0	0.0
1956	36.6	36.6	0.0	0.0	0.0
1957	10,748.4	10,748.4	0.0	0.0	0.0
1958	20,821.2	0.0	20,821.2	0.0	0.0
1959	0.0	0.0	0.0	0.0	0.0
1960	1.0	1.0	0.0	0.0	0.0
1961 2/.....	1,318.0	1,318.0	0.0	0.0	0.0
1965	0.0	3/	3/	3/	3/
1975	0.0	3/	3/	3/	3/

1/ "Others" includes imports from Canada and Hong Kong in 1949 and 1954, respectively.

2/ Figures include milled corn.

3/ Since no imports were projected for 1965 and 1975, imports from all source countries are assumed to be zero.

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The production of shelled corn has been projected under the following assumptions:

1. The government's 1975 program goals of distributing enough fertilizers and hybrid seed to take care of about 100,000 hectares will be approximately 50 percent achieved by 1965 (with respect to distribution of fertilizer only) with full implementation by 1975.

2. Farmers utilizing fertilizer and hybrid seed outside the government program will equal the coverage under the government program (100,000 hectares) by 1975.

3. For 1965 and 1975 the area planted to hybrids will be about 75,000 and 200,000 hectares, respectively.

4. Demand for animal feeds will continue to be a strong incentive for corn production.

Implications

The projections for the production of shelled corn indicate that the Philippines will be self-sufficient by 1965. No imports are anticipated for 1965 and 1975. Consequently, there is little likelihood of a significant commercial market for U. S. corn developing in the Philippines.

Table 11.--Philippines: Area planted to corn, yield per hectare, and annual production for selected periods with projections for 1965 and 1975

Period	Area planted to corn	Yield of shelled corn per hectare	Annual average production
	1,000 hectares	Kilograms	1,000 metric tons
1920-1924	544.2	774.6	421.4
1925-1929	530.4	815.1	432.4
1930-1934	557.2	666.9	371.7
1935-1939	686.2	598.5	411.2
1940-1949	797.6	608.8	485.7
1950-1954	1,025.4	668.6	685.8
1955-1959	1,513.4	587.1	888.2
1960	1,845.0	631.6	1,165.3
1965	2,180.0	706.9	1,541.0
1975	3,100.0	827.4	2,565.0

WHEAT

Most of the production of wheat in the Philippines is on an experimental basis. Wheat growing was introduced into the country during the 17th century, but virtually disappeared when imported wheat flour from America became cheap shortly following the American occupation. However, wheat continued to be grown on a limited scale in the Cagayan Valley until World War II.

In the foreseeable future, wheat is likely to be produced in the Philippines only in negligible quantities. Certain areas in the country have soil and a climate that would permit commercial production; these areas being Batangas, Cavite, the Cagayan Valley, the Bukidnon Plateau, Lanao, and Cotabato. However, there are two major obstacles to production expansion. First, no strain of a stable, high-yielding variety of wheat has been developed that can be grown on a commercial scale. Second, the prices currently offered by flour mills for domestically produced wheat are not sufficiently high to provide incentives.

At the present time, extensive wheat production research is being jointly undertaken by the Bureau of Plant Industry, the University of the Philippines, Araneta University, and the Republic Flour Mills. These institutions recently signed an agreement for a cooperative wheat improvement and production program. Nevertheless, production increases by 1975 are expected to be small.

In contrast with the slow development of wheat growing, wheat milling has recently been rapidly expanding and has become well established. Since 1901 four mills with a total capacity of 255,000 metric tons have been operating. A fifth mill with an annual capacity of 50,800 metric tons is now under construction. Negotiations are reportedly underway for a sixth mill of equal capacity. In addition, two new applications for establishing mills with a combined capacity of 111,760 metric tons reportedly have been filed with the National Economic Council.

Like the flour milling industry, the bakery industry has experienced a sharply upward trend. From 1948 to 1960, the number of bakeries grew at an average annual rate of 5.8 percent, reaching a 1960 total of 5,000 bakeries with daily flour consumption averaging 300 pounds per bakery.

Most of the existing bakeries are small units that use crude baking methods and mix dough by hand. A study by the Filipino Baker's Association reports that there is not a single, completely mechanized bakery in the country (bakeries are distinguished from biscuit and cracker factories which are largely mechanized). The current program of the above Association is to promote more "scientific" baking (baking and bread making with the use of some mechanical baking equipment and with the application of uniform formulae). If this program is successful, the number of small bakeries may be reduced in favor of larger and more efficient units. The biscuit and cracker factories will continue to be highly mechanized.

The greater part of Philippine postwar imports of wheat have been in the form of wheat flour, but substanital imports of wheat grain began in 1958 (tables 12 and 13). Imports of wheat grain increased from only 8,622 metric tons in 1958 to 247,908 metric tons in 1961. In 2 of the 4 years (1958 and 1961) the United States accounted for over 90 percent of the imports. Canada and Australia were the major competitors.

Table 12.--Philippines: Wheat flour imports by countries of origin, 1950-61, and projections for 1965 and 1975

Year	Total 1/	U. S.	Percent U.S.	Canada	Australia	Japan
			Metric tons			
1950	176,556	86,561	49.0	87,695	2,273	16
1951	216,134	100,390	46.5	115,472	190	82
1952	195,974	84,730	43.2	109,743	1,492	9
1953	166,986	74,460	44.6	92,485	34	7
1954	187,797	80,289	42.8	106,600	865	43
1955	244,729	109,804	44.9	103,664	4,146	67
1956	214,987	98,915	46.0	108,213	7,703	110
1957.....	286,616	149,397	52.1	112,311	24,372	88
1958	299,479	199,852	66.7	91,209	8,105	116
1959	139,342	82,028	58.9	55,449	4,181	23
1960	158,973	56,051	35.3	82,983	19,464	30
1961	78,936	28,184	35.7	49,247	1,430	0
1965	0	2/	2/	2/	2/	2/
1975	0	2/	2/	2/	2/	2/

1/ Total includes other countries.
2/ Since no imports are projected for 1965 and 1975, imports from source countries are assumed to be zero.

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As imports of wheat increased, imports of wheat flour declined sharply, dropping by about 74 percent between 1958 and 1961. Flour imports are expected to cease by 1965.

Table 13.--Philippines: Wheat grain imports, by principal country of origin, 1958-61, and projections for 1965 and 1975

Year	Total 1/	U. S.	Percent U. S.	Canada	Australia
	Metric tons				
1958	8,622	8,622	100.0	0	0
1959	79,603	21,317	26.8	44,389	13,887
1960	114,800	85,964	74.9	19,766	9,068
1961	247,908	223,227	90.0	24,680	0
1965	326,300	228,410	70.0	2/	2/
1975	535,300	401,375	75.0	2/	2/

1/ Total includes other countries.
2/ Not projected.

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Projections

It is projected that by 1975, wheat production in the Philippines will not be much in excess of 500 metric tons. Even this small amount is projected on the following assumptions:

1. A variety of wheat, adapted to Philippine conditions, will be developed by 1965 and its seed distributed to about 100 farmers; each will plant one hectare to wheat.

2. The area planted to wheat will increase by 100 hectares yearly after 1966; reaching a total of about 1,000 hectares by 1975.

3. Average yield per hectare will increase from the present low average of about 308 kilograms to a 1975 average yield of 528 kilograms.

In the case of flour milling, total 1975 capacity is projected to surpass 476,000 metric tons of flour. This projection assumes that six flour mills, with a total capacity of some 355,000 metric tons, will be operating by 1965 and that three additional mills will be in operation by 1975. Since the National Economic Council suggests a minimum per mill capacity of about 40,500 metric tons, the three mills are expected to give additional milling capacity of some 121,500 metric tons.

Projections for 1965 and 1975 of the supply of bakery products including biscuits and crackers (in terms of wheat flour equivalent) are as follows:

Year	Output of bakery products
	1,000 metric tons
1965	196
1975	308

Projections of supply of other flour products such as macaroni and vermicelli and of wheat flour used as glue extenders for plywood and veneer have been given as follows:

Product	Industrial demand in wheat flour equivalent	
	1,000 metric tons	
	1965	1975
Macaroni, vermicelli	6.5	11.4
Others (plywood and veneer, etc) ...	29.5	52.6
Total	36.0	63.6

Implications

It is projected that imports of wheat flour will cease entirely by 1965. The 1965 imports of wheat grain are projected to reach 326,000 metric tons; only slightly over the 1960 level of 317,290 metric tons (including grain equivalent of flour). By 1975, total wheat imports are projected to reach 535,300 metric tons; some 68 percent over 1960. However, it is believed that small amounts of wheat flour may continue to be authorized for importation in order to prevent absolute control of the flour market by domestic millers.

As the projected shifts in the Philippine imports of wheat flour to wheat grain are achieved, the United States will lose the rest of its Philippine market for wheat flour. However, if the United States share of Philippine wheat grain imports during the period 1958 through 1961 is maintained, it should have an estimated Philippine import market of approximately 230,000 metric tons by 1965 and some 400,000 metric tons by 1975.

Indications are that other countries, particularly Canada and Australia, will increase their efforts to gain a larger share of the Philippine market for wheat. Consequently, U. S. exporters will need to intensify their marketing efforts if they are to maintain the share indicated above.

Historically the Philippines has been a cash market for U. S. wheat imports. The small amount imported during the last 2 years under specified government programs is not expected to increase to a significant level by 1965. This should hold true for 1975 unless the Philippines is faced with a much weaker import capability position.

MEAT

In the Philippines, domestically produced sources of meat include carabao, cattle, swine, goats, and poultry. The proportion of animals slaughtered to total population has been stable. The one exception is the slaughtering of carabao on which the government imposed restrictions. Although horses are slaughtered for meat on a limited scale, this class of livestock is not considered in this discussion.

There is no system for slaughtering live animals near their source of production, nor for refrigerating and transporting the carcasses to major consumption centers. Consequently, there is considerable weight loss from farm to slaughterhouse. Added to the above difficulties is the fact that there are few farms near the urban centers for fattening livestock for slaughter.

Based on various government and private programs, it is envisioned that the needed refrigeration and fattening facilities will eventually be established. However, such developments will probably be slow. Consequently, it has been assumed that the carcass weights of the various meat animals will remain at about the present level in 1965 and 1975. Two exceptions are cattle and swine. An increase in the carcass weight of cattle from 136 kilograms to 140 kilograms is anticipated. For swine an increase from 45 kilograms to 50 kilograms is expected. The average carcass weight, in kilograms, of other meat animals and poultry, is projected as follows: carabao, 166; goats, 12; turkeys, 4; geese, 2.9; ducks, 1.3; and chickens, 1.2.

The carabao is the mainstay of the typical Philippine farm. It is the leading source of meat as well as the principal beast of burden. Raising of carabao is mostly done by small farmers.

In the prewar normal year, 1938, approximately 6 percent of the carabao population was slaughtered. With the imposition of a government slaughter ban in 1954, however, only about 0.6 percent of the carabao were slaughtered for meat purposes in 1955. Then restrictions were eased and by 1959 the official estimated rate of slaughter was nearly 2 percent. However, some studies indicate that slaughter was greatly underestimated and that the rate for 1959 was actually over 3 percent.

Old, decrepit, and otherwise useless carabao are sold for meat. The relatively low price of carabao meat (about half that of beef from cattle) creates a strong demand for this meat. This factor, combined with the expected gradual relaxation of slaughter restrictions, should result in an increase in slaughter in relation to carabao population. It may reach approximately 4 percent by 1965 and 6 percent by 1975.

Despite the relative ease of raising cattle, the extensive area of unused grazing lands, and the rather high beef prices, the postwar production of cattle has been low. The 1960 population is shown at 1,110,000 head; roughly 18 percent below the 1939 population of 1,349,200 head. It is estimated that only about 15 to 20 percent of total cattle numbers are on ranches, the remainder being on small farms.

Based on available data, the annual average slaughter rate for cattle is about 32 percent. Between regions, however, the average rate varies from 11 to 58 percent, with regions close to Manila having the highest rates.

Since 1949 the swine population in the Philippines has been increasing at an average of about 6.4 percent annually. In 1949 there were 3,533,000 hogs, in 1959 6,574,000.

As a source of meat, swine dominates the domestic market. Approximately 50 to 54 percent of the swine population is slaughtered annually. This rate of slaughter is expected to remain fairly stable.

Most Philippine farmers raise poultry. Chickens constitute the major proportion of the poultry population with turkeys, ducks, and pigeons accounting for practically all of the remainder. Turkey raising is limited because of small demand for this bird. Ducks are raised primarily in the vicinity of Manila. They are raised mostly for eggs. Pigeon raising is relatively new in the country.

About 95 percent of the chickens are of the native type. The White Leghorn is the most popular for egg production. Many foreign, general purpose types of chickens have been introduced into the country. However, the native chicken is expected to remain the dominant type, because of its availability, hardiness, and ability to forage for itself.

Approximately 50 percent of the chicken population is slaughtered for meat every year. A considerably smaller proportion of other kinds of poultry is slaughtered (table 14).

Projections

Projections of domestic production of meat and meat products are based on (1) projections of the country's livestock population; (2) estimates of rates of slaughter; (3) estimates of average carcass weights; and (4) developments in the meat processing industry.

According to the projections, total supply of meat and meat products (including poultry) should reach 336,664 metric tons by 1965 (table 14). By 1975, this supply should total 713,961 metric tons; an increase of some 112 percent over the 1965 level. The most significant increases are expected from swine and chickens. Between 1965 and 1975, the total pork supply is projected to increase by some 236,195 metric tons; 120 percent over the 1965 base. During the same period, the supply of chicken is projected to rise by some 77,517 metric tons; 155 percent over the 1965 base.

Since 1955 total Philippine imports of meat and meat products, including livestock for slaughter, have exhibited a rather erratic, but downward trend. From a 1955 level of 15.8 million pesos, imports of meat and meat products, excluding livestock for slaughter, dropped by nearly 45 percent to a 1961 level of only 8.8 million pesos. During the same period the U. S. share declined from 49 percent to 3 percent. At the same time the percentage share for non-specified countries increased from 13 percent to 45 percent. Although

Argentina and Australia have been the traditional sources of Philippine meat imports, the large drop in the U. S. share reflects, in part, the tendency of the Philippines to diversify import trade (table 15).

Philippine imports of live animals for slaughter have trended downward in recent years. Imports in 1955 totaled about 2.3 million pesos. By 1961, imports had dropped to less than 0.6 million pesos; a decline of over 75 percent. Most imports have been supplied by Australia and New Zealand.

In the future, imports of meat and meat products are expected to shift from processed and canned meats to fresh and frozen meats and live animals for slaughter. Imports of processed and canned meats are projected to taper off from 1965 onward with no significant imports by 1975. However, continued imports of some special or fancy types of processed and canned meat products should not be entirely precluded. Imports of fresh, chilled, and frozen meats are projected to reach 7,000 metric tons, more than 3 times that of 1959 (quantity bases). By 1975, these imports should increase to over 9,000 metric tons, more than 4 times the 1959 volume. From a 1959 level, imports of livestock for slaughter are expected to increase about 5 times to a 1965 level of over 5,000 metric tons. The 1975 imports should approach 10,000 metric tons; an increase of about 82 percent over 1959 imports.

Implications

Traditionally, Philippine imports of livestock for slaughter have originated from sources other than the United States. Since the United States is not in a strong competitive position, this traditional pattern is expected to hold true through the projected years.

In the case of meat and meat products the U. S. share declined rapidly between 1955 and 1961 and represented only 3 percent of the total meat imports in the latter year. Due in large part to the highly favorable export position of Australia and New Zealand, the United States can not expect to substantially improve its present position in the projected period. Under the prevailing conditions the United States percentage share of total Philippine import is expected to be approximately 5 and 3 percent for 1965 and 1975 respectively.

Of the total imports, the United States has enjoyed a larger percentage share of fresh, chilled, and frozen than of processed and canned. During 1959-61 the U. S. average percentage share has been approximately 8 percent of the fresh, chilled, and frozen imports, but less than 3 percent of the processed canned imports. If the United States maintains these percentage shares, the Philippines will import roughly $250,000 worth of U. S. fresh, chilled, and frozen meats and some $112,000 worth of processed and canned meats in 1965.

No imports of processed and canned meats are projected for 1975. Due to expected increased competition primarily from Australia and New Zealand, it is unlikely that the United States will be able to maintain her present share of Philippine imports of fresh, chilled, and frozen meats up to 1975 (table 16). One exception may be pork for which the United States is in a better competitive position than for most other meats.

Table 14.--Philippines: Projections of livestock number, percentage slaughtered, average carcass weight, and domestic meat supply for 1965 and 1975

Livestock	Rate of annual population growth	Meat supply				
		Number	Average carcass weight	Slaughter rate	Number slaughtered	Meat supply
	Percent	1,000	Kilograms	Percent	1,000	Metric tons
1965						
Carabao	3.0	4,285	165.6	4.0	171.4	28,383.8
Cattle	3.7	1,284	135.7	32.0	410.9	55,759.1
Swine	6.4	8,425	45.0	52.0	4,381.0	197,145.0
Goats	5.2	756	12.0	25.0	189.0	2,268.0
Horses	1.5	230	95.0	8.0	18.4	1,748.0
Poultry:						
Chickens ...	9.8	83,521	1.2	50.0	41,760.5	50,112.6
Ducks	12.7	4,056	1.3	20.0	811.2	1,054.3
Geese	12.1	172	2.9	27.0	46.4	134.6
Turkeys	5.2	49	4.0	30.0	14.7	58.8
Total ...						336,664.2
1975						
Carabao	3.0	5,759	165.6	6.0	345.5	57,214.8
Cattle	3.7	1,914	140.0	32.0	612.5	85,750.0
Swine	6.4	16,667	50.0	52.0	8,666.8	433,340.0
Goats	5.2	1,320	12.0	25.0	330.0	3,960.0
Horses	1.5	271	95.0	8.0	21.7	2,061.5
Poultry:						
Chickens ...	9.8	212,716	1.2	50.0	106,358.0	127,629.6
Ducks	12.7	13,409	1.3	20.0	2,681.8	3,486.3
Geese	12.1	538	2.9	27.0	145.3	421.4
Turkeys	5.2	81	4.0	30.0	24.3	97.2
Total ...						713,960.8

Table 15.--Philippines: Imports of meat and meat products, by country of origin with percentage of U. S. imports and projections for 1965 and 1975

Year	Total	U.S.	Percent U. S.	Argentina	Australia	Others	Percent Others
	1,000 pesos						
1955...	15,848	7,744	49	3,108	2,985	2,011	13
1956...	17,077	6,164	36	5,677	3,447	1,789	11
1957...	16,576	5,486	33	4,908	3,466	2,716	16
1958...	19,837	3,059	15	7,852	6,021	2,905	15
1959...	11,372	376	3	4,732	4,174	2,090	18
1960...	12,320	877	7	5,207	1,768	4,468	36
1961...	8,800	277	3	2,441	2,093	3,989	45
1965 1/	13,572	679	5	2/	2/	2/	2/
1975 1/	8,112	243	3	2/	2/	2/	2/

1/ In 1956 prices. Values for all other years in current year prices. ₱2=$1 (U.S.)
2/ Not projected.

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Table 16.--Philippines: Imports of selected meat and meat products, total and U. S., for 1959 to 1961, with projections for 1965 and 1975

	Fresh, chilled, frozen		Processed, canned	
	Total	U.S.	Total	U.S.
	1,000 pesos 1/			
1959	2,237.0	158.7	8,712.4	43.2
1960	1,067.3	101.7	10,709.0	497.5
1961	1,647.1	120.9	6,795.0	138.3
1965	6,148.0	500.0	7,424.0	225.0
1975	8,112.0	400.0	0.0	0.0

1/ ₱1=$1 (U.S.)

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MILK

Despite the large demand for milk and other dairy products, it is estimated that only 4 percent of consumption comes from domestic Philippine production. Some 96 percent is imported.

The country's limited milk production comes from 2 major sources: the native carabao, and from cattle, native and imported. Carabao provided about 80 percent. However, production from cattle, especially purebred cattle, is expected to increase rather rapidly. Only some 2 percent of adult female carabao and native cattle are milked as these animals are primarily kept for draft purposes. The country has no organized milk marketing system.

The number of dairy cattle of foreign breeds imported into the Philippines has been quite limited. Oriental breeds (Sindhi, Sahiwal, etc.) have thrived, but experience with Western breeds has been mixed. The dairy carabao and native cattle have an average daily production of only 1.5 liters for 200 lactation days, while imported Murrah buffaloes produce an average daily yield of 4 liters for about 280 lactation days per year. Western dairy cows (purebred) yield from 8 to 10 liters daily for 250 lactation days per year.

Carabao, milked by farmers on small farms, are raised without the benefit of concentrates. On the other hand, dairy cattle, particularly imported breeds kept at government dairy farms and on commercial dairy farms, are well fed. The supply of concentrates is inadequate to allow extensive use for increasing milk yields.

Since domestic production of fresh milk accounts for only 3 to 4 percent of annual consumption, a high percentage of Philippine dairy imports is in the form of canned, evaporated, and condensed milk. During the period 1946-60, some 58 percent of milk imports were in the form of canned evaporated milk (table 17). About one-fifth was in the form of condensed milk. Powdered milk, butter, and cheese accounted for 10, 4, and 3 percent, respectively. In recent years, however, imports of powdered skimmed milk have increased substantially as a result of domestic manufacture of canned filled milk. The basic raw material of the filled-milk industry is nonfat milk. This is mixed with coconut oil, vitamins, and water, and then canned. In 1960, dry skimmed milk accounted for 13 percent of total milk imports in value terms and about 16 percent in quantity terms.

Excluding the filled-milk industry, the milk processing industry is not highly developed. Most domestic milk is consumed in the home. In the case of milk from purebred herds of commercial dairy farms, the bulk is sold as bottled milk; used in making ice cream; or sold directly to U. S. military establishments.

The strong demand for evaporated milk has made possible the successful operation of several filled milk companies. At present, there are three companies engaged in the manufacture of evaporated filled-milk ice cream and other milk products. The reported capacity of the three plants is about 140 million pounds of filled milk annually. In addition, there is a processing plant producing filled milk for the fluid milk market that has a

daily capacity of about 10,000 gallons. If operated at full capacity these filled-milk plants would utilize about 40 million pounds of powdered skimmed milk.

Table 17.--Philippines: Total value of dairy imports and percentage distrition by commodity group, annually, 1940, 1946-60, and average 1946-60

Year	Total imports	Percentage distribution of --					
		Evaporated milk	Condensed milk	Powdered milk	Butter	Cheese	All others 1/
	1,000 pesos	Percent					
1940 ...	9,286	54.9	28.3	3.9	6.8	2.8	3.3
1946 ...	21,424	65.4	16.1	13.7	2/	2/	4.7
1947 ...	42,625	50.3	18.7	10.4	3.5	4.0	5.1
1948 ...	45,825	58.5	22.1	7.1	5.1	2.4	4.8
1949 ...	46,834	56.2	20.6	6.9	5.7	3.8	6.8
1950 ...	36,840	50.9	29.1	9.8	2.5	1.2	6.5
1951 ...	49,660	56.0	23.5	12.3	1.9	2/	6.2
1952 ...	35,067	58.1	25.0	3.0	3.2	3.2	5.5
1953 ...	45,736	54.3	25.1	8.8	2.9	3.1	5.8
1954 ...	46,028	59.5	21.3	1.1	3.3	4.2	10.6
1955 ...	54,367	62.8	17.0	0.0	3.2	3.0	14.0
1956 ...	53,054	70.4	15.7	8.1	2.9	2.5	2/
1957 ...	65,447	69.3	16.1	5.4	4.8	3.7	2/
1958 ...	52,442	56.9	14.9	24.8	1.3	1.8	2/
1959 ...	37,253	34.2	26.4	28.8	1.6	2.6	6.4
1960 ...	49,649	47.9	17.9	24.2	2/	1.5	8.3
1946-60 average	47,300	58.0	20.0	10.0	4.0	3.0	5.0

1/ Natural milk, buttermilk, malted milk, and other milk compounds.
2/ Less than 1 percent.
₱2=$1 (U.S.)

The filled-milk industry employs more than 300 workers and appears to be well established. Locally produced evaporated and condensed filled-milk is extensively used by households in the low-income brackets. The price of filled milk is approximately 70 percent of that of imported evaporated and condensed milk. This relatively low price is causing a change in consumption patterns in favor of filled milk; particularly for those households in the low-income group.

Projections

It is projected that by 1975 the total domestic production of fresh or raw milk may reach a high of 33,553 metric tons (table 18). This would represent an increase of nearly 220 percent over the 1959 outturn of around 10,500 metric tons. This projected production assumes that the total number of milk animals as well as yield per animal will experience substantial increases. The total number of dairy animals is projected to reach 63,715 by 1975; an increase of some 172 percent over the 1959 population of 23,399. This implies the following annual percentage growth rates; carabao, 3; cattle, 3.7; and goats, 5.2. The annual rate of growth of Western breeds of dairy cows is estimated at about 9 percent, due in part to the continued importations of such livestock.

Imports in 1965 (in quantity terms) are projected to show a 32 percent drop from the 1960 level of 297 thousand metric tons (fresh milk equivalent of all dairy imports). By 1975, however, imports are expected to rise to a record high of 337,000 metric tons; some 66 percent over the 1965 import level. The drop from 1960 to 1965 is attributable to expansion in the domestic production of filled milk and a shift from imports of canned milk to powdered skimmed. By 1975, consumption will expand, causing total value of imports to increase. Value of dairy imports in 1975 will be about 80 million pesos, 60 percent over the 1960 level.

Implications

The U. S. share of the Philippine import market for milk and dairy products has been declining, but it is expected to stabilize at around 60 percent of the trade. During the late 1940's and throughout the 1950's Philippine imports of milk and milk products increased steadily. However, the U. S. share declined from 96 percent in 1946 to 57 percent in 1960. The major U. S. competitor has been the Netherlands followed by Australia and Switzerland. In recent years, however, the percentage share of "all other countries" has been increasing, exhibiting in part, a greater diversification of trading patterns.

Considering recent trends, the U. S. share of the projected Philippine dairy imports may well stabilize at around 60 percent and more or less hold this relative position through 1965 and 1975. On a value basis, this would mean that by 1965 Philippine dairy imports from the United States would total some 30 million pesos. By 1975, these imports would climb to around 48 million pesos (table 19).

Historically, dried and canned milk have constituted the greatest share of total U. S. dairy exports to the Philippines. On a value basis, they constituted nearly 80 percent of total U. S. shipments during the 3-year period of 1959-61. Dried and canned milk accounted for about 60 and 20 percent, respectively. During the same period, around 66 percent of the dried and canned milk exported to the Philippines was under cash sales. On an individual basis, however, 80 percent of the dried milk shipments moved under government programs while nearly 99 percent of the canned milk moved under cash sales.

An upward trend in overall demand is expected for 1965 and 1975. The proportion of dried milk to canned should increase substantially because of intensified efforts by the Philippines to increase domestic production of filled milk. However, the percentage of dried milk exported to the Philippines under various government programs is expected to decrease unless the import position of the Philippines deteriorates considerably below her present level.

Table 18.--Philippines: Projected number, yield, and production by kind of dairy animal, 1965 and 1975

Livestock	Estimated number		Average annual milk yield per animal 1965-1975		Estimated milk production			
					1965		1975	
	1965	1975	High	Low	High	Low	High	Low
			- - - Kilograms - -		- - - - - - Metric tons - - - - - -			
Carabao 1/	27,340	36,740	500	375	13,670	10,253	18,370	13,778
Native cattle.....	8,320	11,235	300	225	3,496	1,872	3,371	2,528
Purebred cattle	2,230	4,500	2,500	2,000	5,575	4,460	11,250	9,000
Goats	6,440	11,240	50	30	322	193	562	337
Total	44,330	63,715	---	---	22,063	16,778	33,553	25,643

1/ Includes buffalo whose average annual yield per animal is over 3 times that of the carabao.

Table 19.--Philippines: Value of dairy product imports by percentage share for selected countries and years, with projections for 1965 and 1975 1/

Year	Value of total imports	U. S.	Netherlands	Australia	Switzerland	All other countries
	1,000 pesos	Percent				
1940	9,280	60	26	10	2/	4
1946	21,424	96	3	2	2/	2/
1953	45,736	82	10	4	2	2
1954	46,028	66	26	4	2	2
1955	54,367	68	25	4	2	1
1956	53,054	69	25	2	2	2
1957	65,447	63	27	6	1	3
1958	52,442	73	22	2/	2	2
1959	37,253	59	32	3	3	3
1960	49,649	66	22	3	2	7
1961	49,021	57	27	5	3	8
1965	49,750	60	3/	3/	3/	3/
1975	79,680	60	3/	3/	3/	3/

1/ Respective percentages do not always total 100 percent due to rounding. ₱2=$1 (US).

2/ Less than 1 percent.

3/ Not projected.

The Philippines: Long-term Projection of Supply of and Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.

TOBACCO

Currently, two kinds of tobacco are being grown in the Philippines: native cigar filler and flue-cured Virginia cigarette type. The cigar filler type was introduced into the Islands by Spanish missionaries in the latter part of the 16th century and has been extensively produced. Flue-cured was first introduced in 1924. However, only during the last 5 years has enough been produced to develop a surplus.

The planted area of native leaf tobacco declined after World War II. From 57,630 hectares in 1939, it dropped nearly 36 percent to 37,140 hectares in 1955. By 1960, however, it had risen to 44,110 hectares. The drop in plantings and production has been attributed to a decline in export demand for native type leaf and, to a lesser extent, the loss of the U. S. market

for Philippine cigars. Decreased export demand can be primarily attributed to a decline in the quality of native leaf filler and to the relatively rapid increase in the production of filler leaf by other countries in competition with the Philippines.

Despite efforts to increase efficiency, the production of cigars in the Philippines has declined drastically. Current production is less than one-third of the prewar average annual outturn of over 300 million pieces.

On the other hand, the volume of cigarettes produced from native leaf has increased since 1958, primarily because of the uptrend in demand for filtered cigarettes made from this leaf. Production has been as follows for selected years:

Year	Cigarette production (million pieces)
1950	3,963.1
1955	3,483.8
1958	8,348.5

The manufacture of cigarettes from native leaf is completely mechanized.

In contrast with the centuries old culture of cigar filler type tobacco, the area planted to Virginia tobacco was extremely limited prior to 1955. The area planted in 1953 and 1954 averaged about 3,800 hectares with average annual production during those years of about 1 million kilograms. In 1955, a price support program for Virginia tobacco was established. Because of this subsidy, there was a tremendous expansion in the acreage planted, thus creating a huge surplus.

Year	Area planted (Hectares)
1954	4,710
1955	15,460
1956	35,330
1958	48,700
1960	51,020

Most of the Virginia leaf tobacco production is low quality leaf. Only about 2.5 percent is classified as Class A, while more than 50 percent is placed in Classes C and D. Due to the lack of proper soil and climate for the production of high quality leaf, it is believed that only around 5 percent of the total crop will be Class A.

The Virginia cigarette manufacturing industry has grown along with domestic production of this type of leaf. Since 1950 the output of cigarettes has increased by over 200 percent. The total outturn in 1959 was about 9,765 million pieces.

With the rapid increase in domestic production, the importation of cigarettes has declined. In 1948, imports of cigarettes totalled over 11 billion pieces, but by 1960, imports had dropped to only 11 million.

In 1960, cigarette factories in the Philippines were operating at only around 60 percent of their capacities. At that time, the total daily capacity was estimated at 60 million cigarettes. A substantial amount of this production was cigarettes with U. S. brand names. Cigarette manufacturers using U.S. brands are required to pay royalties to the U. S. companies.

The Philippines have long been a substantial market for U. S. tobacco and tobacco products (table 20). In 1950, Philippine imports of tobacco and tobacco products totalled slightly over ₱23 million; practically all from the United States. However, by 1960 imports had declined to less than ₱100,000 again almost all continuing to be from the United States.

Imports of leaf and cigarettes (aromatic type, mostly flue-cured Virginia leaf and blends thereof) constituted the major segment of total imports. Over the years, however, the respective percentage share of the two experienced substantial shifts. While leaf constituted about 60 percent of tobacco imports in 1950, by 1960 it had increased to 86 percent. Imports of cigarettes constituted 39 percent of the 1950 tobacco imports but had dropped to 12 percent by 1960.

The United States accounted for over 99 percent of the total imports of tobacco leaf and products in the 1950-60 period. For this period, the United States supplied over 99 percent of the imports of leaf, cigarettes, and chewing tobacco; 97 percent of the stems and scraps, cigars, and cheroots; over 82 percent of the smoking tobacco; and 77 percent of the imports of "other tobacco."

Projections

It is expected that production of native cigar filler will readily respond to market demand. Therefore, the final demand for this type of tobacco was projected in terms of its products such as cigars and cigarettes. The assumed balance between domestic supply and total demand (including exports) is shown below:

Demand (supply)	1965	1975
	- 1,000 Metric tons -	
Households	10.27	15.90
Exports	8.00	10.00
Inventory changes	0.41	0.58
	18.68	26.48

Table 20.--Philippines: Value of total specified imports of tobacco products, with percentage share U. S., 1950-60, and projections for 1965 and 1975

Year	Leaf		Cigarettes		Chewing tobacco		Smoking tobacco		Stems & scraps		Other tobacco (includes cigars and cheroots)	
	1,000 pesos	Percent U. S.	1,000 pesos	Percent U. S.	1,000 pesos	Percent U. S.	1,000 pesos	Percent U. S.	1,000 pesos	Percent U. S.	1,000 pesos	Percent U. S.
1950	13,804	100.0	8,991	1/100.0	211	100.0	86	98.8	30	100.0	15	1/100.0
1951	10,154	99.7	6,345	99.9	672	100.0	52	99.4	23	100.0	1	100.0
1952	28,443	100.0	3,582	99.6	855	98.7	265	65.3	0	0.0	23	42.2
1953	23,421	100.0	2,871	99.9	0	0.0	0	0.0	6	100.0	2/	100.0
1954	15,181	99.8	3,193	1/100.0	746	100.0	39	99.1	0	0.0	2/	84.9
1955	25,186	100.0	2,789	99.6	0	0.0	.31	96.4	198	100.0	2/	90.5
1956	9,212	100.0	738	98.5	498	100.0	62	1/100.0	2/	0.0	7	99.7
1957	256	83.6	712	99.9	477	100.0	1	0.0	0	0.0	1	87.9
1958	5,113	99.8	220	99.6	158	100.0	0	0.0	0	0.0	2/	0.0
1959	123	95.1	109	100.0	0	0.0	0	0.0	0	0.0	0	0.0
1960	780	92.8	110	99.1	0	0.0	2	100.0	7	0.0	11	1/100.0
1965	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
1975	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

1/ Imports from other countries but less than 5 percent of total. All figures rounded. ₱2=$1 (US).
2/ Imports of less than 500 pesos.

The production of Virginia leaf is projected to increase at a more rapid rate than native filler. The yield per hectare has been assumed at 600 and 750 kilograms for 1965 and 1975 respectively. Land area needed to meet the estimated demand for this crop is projected at 65,470 hectares for 1965 and 79,130 hectares for 1975. This implies a 1965 production of 39,282 metric tons; increasing to a 1975 level of 59,348 metric tons. These projections assume that a price-support and purchase program will be continued to 1975. However, such expansion may not be necessary, as there are already large surplus stocks of leaf which may reach approximately 80,000 metric tons by 1965.

Due to relatively high profit incentives, the cigarette manufacturing industry is expected to expand to meet projected demand. Daily production capacity should be about 70 million cigarettes in 1965 and about 100 million by 1975.

Implications

No imports of tobacco and tobacco products are projected for 1965 and 1975, though probably special types of tobacco will continue to be imported in small amounts to satisfy special local demand. Nevertheless, it appears that the United States will lose most of the substantial market it has historically had in the Philippines for tobacco and tobacco products.

COTTON

Cotton culture has never been more than a minor agricultural activity in the Philippines. More than 80 percent of the total area planted to cotton is accounted for by the government cotton-growing project in Cotabato (Mindanao). The remaining 20 percent is planted by small farmers in the Ilocos area, Cagayan valley, and Batangas. Various studies have indicated the possibility of growing cotton on an extensive scale in other areas of the country.

Cotton is not a profitable crop measured in terms of the returns on costs. This is due to several factors: (1) Various attempts to grow cotton on a large scale have been hindered by uncontrolled infestations of pests and the lack of reasonably priced pesticides; and (2) cost of production is high compared with the landed cost of imported cotton. However, many agriculturalists in the government service believe that a government-sponsored production subsidy and price-support program would increase the number of farmers growing cotton.

To date, the only government program is that of the National Development Corporation. The NDC operates a cotton growing project in Mindanao as well as a cotton textile mill. In addition, it has a program to purchase all domestically produced cotton at 10 centavos per kilogram above the landed cost of imported cotton. However, due to lack of funds this price-support program is, in actual practice, quite limited.

Between 1955 and 1960 the area planted to cotton ranged from 2,300 to 3,500 hectares. In 1960 the planted area dropped to 2,250 hectares. This substantial drop was primarily due to a reduction in the area planted under the government project.

Yields of cotton fiber vary widely between varieties. The native Philippine varieties yield only some 300 kilograms of seed cotton per hectare. The foreign varieties, however, have an average yield of approximately 800 kilograms. The large-scale government project in Cotabato has used various improved U. S. varieties.

Although Philippine cotton production is limited, the domestic cotton textile industry has been established on a relatively large scale. The manufacture of textiles was initiated by private enterprise in 1930. In 1939, the National Development Corporation established a second cotton textile plant. Since 1955 some 20 privately owned textile mills have gone into operation. They are concentrated in the Manila area. Some 461,476 spindles were reported in operation as of July 31, 1961. In addition, 78,684 spindles were under installation as of that date and orders for 77,932 additional spindles have been placed. Thus, the number of spindles in operation, under installation, and on order totalled 618,092 as of the above date; about nine times the 68,370 spindles reported in 1956.

These figures indicate some overexpansion according to the estimates of the Industrial Development Center (a joint project of the National Economic Council and the U.S.A.I.D.). A reasonable minimum number of spindles to meet current Philippine requirements would be about 410,000. This number of spindles could produce the amount of spun cotton and spun synthetic yarns to supply the Philippine market for the next few years. The current number of spindles already exceeds the projected requirements of 420,000 in 1965. However, by 1975 a projected 626,000 spindles will be required.

Growth in the number of looms in operation has increased from 2,130 in 1956 to 14,600 by the end of July, 1961. The 14,600 looms can produce 385 million square yards of textiles in 1 year. About 87.5 percent of the yarn production is absorbed by the power weaving sector, with the balance flowing into the knitting, hosiery manufacturing, and other minor sectors of the textile industry.

Again some over expansion is indicated, as it has been estimated by the Industrial Development Center that 11,000 power looms could produce the amount of cloth needed to supply the present Philippine market.

The existing capacity of the finishing mills is nearly in balance with the domestic capacity for weaving and spinning. If the power looms operate at near full capacity, there will be enough gray cloth to sustain the finishing sector of the textile industry at full operational levels. The annual capacity of the finishing mills is about 350 million yards of gray cloth.

It is expected that there will be no increases in the existing capacity of finishing mills from 1960 to 1975.

Both the knitting industry and the thread manufacturing industries are capable of meeting both current and future demand. It has been estimated by the Industrial Development Center that the circular knitting mills can process in a year more than the Philippine market can absorb in 4 years when operating on three shifts. In view of this, no increase is expected in the current capacity of the circular knitting mills by 1965, and probably not by 1975.

Likewise, it is estimated that thread mills operating on three-shifts can process in a year more than the Philippine market for thread can absorb in 3 years. In view of this, no increase is expected in the existing capacity of thread manufacturing mills by 1965, and probably not by 1975.

Handweaving in the Philippines is an old industry and government policy is to assist this traditional enterprise. Most hand looms in existence are antiquated, but the slow spread of rural electrification prevents extensive dispersal of power looms. The NDC has installed a mill in the Ilocos area to produce all the yarns necessary to support the handweaving industry in that particular region. Eventually, however, this sector of the textile industry is expected to diminish as the power weaving sector increases. Even after the power weaving sector has been fully developed a small amount of handweaving is likely to continue to supply handicraft goods and novelties for the tourist trade and other special demand.

Since 1950 there has been a radical shift in the composition of Philippine cotton imports. In 1950, over 72 percent of imports (in quantity terms) was in the form of finished cloth (expressed in terms of its raw cotton equivalent). However, in 1960 less than 15 percent was in that form. During the same period raw cotton imports increased about 12 times (table 21).

Table 21.--Philippines: Cotton imports by kind of product and percentage distribution, 1950, 1955, and 1960

Product	1950 imports 1/	Percentage of total	1955 imports 1/	Percentage of total	1960 imports 1/	Percentage of total
	1,000 metric tons	Percent	1,000 metric tons	Percent	1,000 metric tons	Percent
Raw cotton..	2.70	19.20	2.32	9.20	31.40	82.52
Yarns and threads...	1.16	8.31	5.14	20.41	1.13	2.97
Grey cloth..	0.03	0.24	0.19	0.77	0.11	0.29
Finished cloth	10.12	72.25	17.53	69.62	5.41	14.22
Total	14.01	100.00	25.18	100.00	38.05	100.00

1/ In raw cotton equivalent.

Projections

Cotton production has been projected on the basis of the rate of growth observed from 1955 to 1959. It is assumed that there will be no substantial government program for acreage expansion nor for other production incentive measures. The projected cotton acreages and outturns are given in table 22.

Table 22.--Philippines: Projections for planted area, yield, and production of cotton for 1965 and 1975

Year	Area planted	Yield per hectare		Total production	
		Seed cotton	Ginned cotton	Seed cotton	Ginned cotton
	Hectares	- - - - - - - - - - - - Metric tons - - - - - - - - -			
1965	5,100	.80	.27	4,080	1,326
1975	10,780	.80	.27	8,620	2,870

The cotton textile industry is projected to show rapid gains to 1965 and 1975, based on various trends and the government's policy to achieve self-sufficiency in cotton textile production. Raw cotton requirements are projected to increase from 29,025 metric tons in 1960 to over 47,000 metric tons in 1965, and some 71,000 metric tons in 1975.

Implications

Between 1960 and 1965, cotton product imports are expected to decline by more than 30 percent, ceasing entirely by 1975. Raw cotton imports, however, are projected to increase rapidly and, by 1975 more than double the 1960 level (quantity terms).

The projected shift and increases are favorable for a total increase in Philippine imports of U. S. cotton. Since 1955, the U. S. share of raw cotton imports has been substantially greater than its share of cotton product imports. Therefore, the projected shift from cotton product imports to raw cotton imports, other conditions remaining relatively stable, can be expected to result in a progressively more favorable import trend for imports of U. S. cotton. A general indication of this trend, in value terms, shows that the U. S. share of Philippine cotton imports may advance from a 1955-57 average of 65 percent to close to 95 percent by 1975 (table 23).

Over the years, imports from the United States have constituted more than 95 percent of all raw cotton imports, while most of the remainder has been imported from Mexico. It is believed that the United States will maintain approximately her traditional share of the Philippine import market. On this basis imports of U. S. raw cotton would reach a 1975 level of some 62,000 metric tons; slightly more than double the 1960 level of 30,262 metric tons (table 24).

Table 23.--Philippines: Value of imports of cotton and cotton products for selected years, and projections for 1965 and 1975 1/

Product	Average output for 1955-57	Annual output for --				
		1958	1959	1960	1965	1975
	- - - - - - - - - - - - 1,000 dollars - - - - - - - - - - - -					
Cotton, raw	3,712	8,407	14,201	17,076	15,458	25,750
Cotton products	34,945	25,948	18,579	16,285	34,651	0.0
Total imports	38,657	34,355	32,780	33,361	50,109	25,750
U. S. share	24,994	21,914	23,298	27,271	39,096	24,463
Percent, U. S. share	64.7	63.9	71.1	81.8	78.0	95.0

1/ See table 4, page 6 for more detailed figures.

The Philippines: Long-term Projection of Supply of and Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.

Table 24.--Philippines: Imports of raw cotton from U. S. and other countries; 1940, 1950 through 1961, and projections for 1965 and 1975.

Year	Total	United States		Mexico	Others
	Metric tons	Metric tons	Percent	Metric tons	Metric tons
1940	1,133	1,133	(100)	0	0
1950	2,688	2,688	(100)	0	0
1955	2,317	2,249	(97)	68	0
1956	4,820	4,631	(96)	143	46
1957	8,606	8,517	(99)	0	89
1958	12,650	12,650	(100)	0	0
1959	23,165	21,653	(94)	1,452	60
1960	31,396	30,249	(96)	745	402
1961	32,379	31,907	(99)	448	24
1965	38,120	36,595	(96)	1/	1/
1975	65,680	62,301	(95)	1/	1/

1/ Not projected.

The Philippines: Long-term Projections of Supply of and Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.

TALLOW

Tallow is not produced in the Philippines in any significant amount. Furthermore, the small numbers of cattle and sheep indicate that there is little prospect of this commodity being produced in substantial amounts in the foreseeable future.

Philippine demand for tallow originates from two sources: Industrial demand for tallow by the soap industry and tallow used for pharmaceutical and medical preparations. Before the outbreak of World War II, 135 soap manufacturing establishments were recorded. After the war, the industry was quickly rehabilitated and by 1952 some 106 establishments were reported producing soap while several hundred small producers were probably not reported. However, while the industry has grown, as yet only a few soap-making factories use modern methods.

The growth in production of soap in the Philippines, accelerated through import controls, is shown below:

Year	Production (metric tons)
1939	22,505
1951	44,330
1957	68,980

It is estimated that 30 percent of the domestic production is toilet soap, while 70 percent is laundry soap.

Compared with the soap industry, the demand is fairly small for tallow for use in pharmaceutical preparations. In 1956 a survey of large tallow manufacturers (20 or more workers) reported that tallow consumption by the medical and pharmaceutical products industry amounted to some 328 metric tons of edible tallow.

Projections

As to tallow for soap making, it is assumed that domestic production will be adequate to meet demand in both 1965 and 1975, though production will not be significant.

Tallow imports, largely in the form of inedible tallow, have shown a steady upward trend in recent years (table 25). In fact, total imports during 1960 were more than treble the 1950 volume. Imports are expected to reach some 10,000 metric tons by 1975.

Implications

The Philippine requirements for tallow must largely be met by imports during the 1965-75 period. Since 1955, imports from the United States have constituted about 99 percent of all tallow imports.

Although small quantities are imported from Australia, Great Britain, Japan, and other countries, it is expected that the United States will retain at least 95 percent of the total Philippine tallow imports for both 1965 and 1975. On this basis, the United States can expect to have a Philippine import market of about 7,467 metric tons by 1965 and about 9,747 metric tons by 1975. The 1975 import potential of 9,747 metric tons represents an increase of nearly 50 percent over the 1960 imports from the United States of some 6,545 metric tons.

Table 25.--Philippines: Total and U. S. imports of edible and inedible tallow, 1955-61, and projections for 1965 and 1975

Year	Total	U. S.	Edible	U. S.	Inedible	U. S.
	Metric tons	Percent	Metric tons	Percent	Metric tons	Percent
1955	5,158	100.0	0.0	0.0	5,158	100.0
1956 1/...	5,827	100.0	434	100.0	5,393	100.0
1957	5,578	99.3	.846	100.0	5,577	99.3
1958	5,370	99.3	1,165	100.0	4,205	99.1
1959	6,431	99.8	363	100.0	6,068	99.8
1960	6,545	100.0	940	100.0	5,605	100.0
1961	8,762	98.7	0	0.0	8,762	98.7
1965	7,860	95.0	2/	2/	2/	2/
1975	10,260	95.0	2/	2/	2/	2/

1/ Includes negligible amounts from other than U. S.
2/ Not projected.

The Philippines: Long-term Projections of Supply of and Demand for Selected Agricultural Products (ERS-Foreign-34) and official trade documents of the Philippines.