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THE EFFECTS OF THE GREEK ENTRY INTO THE EEC ON ITS LIVESTOCK
AND FEEDGRAIN CONSUMPTION, PRODUCTION AND TRADE

by

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CHAPTER I

INTRODUCTION

After a lengthy period of negotiations, Greece became the tenth member of the European Economic Community. The most important problems to be overcome in reaching the Treaty of Accession were those associated with the integration of Greek agriculture into the Common Agricultural Policy (CAP). The importance of the farm sector for the Greek economy as a whole, the structural problems it faces and the political weight of the Greek farmers led to an agreement on the necessity of a five-year transitional period during which Greece will have to adjust progressively to fully adopting the CAP.

The major concern of this study is to examine the impacts of the changes which are required for the reorientation of the Greek agricultural policy on Greece's agriculture and particularly on its feedgrain-livestock subsector.

Objectives of the Paper

This paper is a part of a cooperative research project between the U. S. Department of Agriculture and the Department of Agricultural Economics of Michigan State University. The general objective of the project is to assess the probable impact of the enlargement of the EEC-9 on the importation of U. S. feedgrains and oilseeds by Greece, Spain and Portugal. This particular paper deals with Greece.

The specific objectives of the paper are:

- a) To provide an overview of the organizational structure of the Greek feedgrain-livestock subsector.
- b) To examine the agricultural policy in Greece and the adjustments associated with the accession to the EEC.
- c) To analyze production, consumption and trade of livestock and feedstuffs trends during the last 15 years and to project them in 1985 and 1990.
- d) To draw conclusions regarding the changes that EEC membership is going to impose on the development of the Greek feedgrain-livestock subsector.

Organization of the Study

The paper is organized into five chapters elaborating on the above stated objectives. Chapter II will review the current situation of Greek agriculture and the history of Greece's association with the EEC. Chapter III provides insights into the changes that are required in the Greek agricultural policy under the EEC regime and their effects on the feedgrain-livestock subsector. In Chapter IV, by analyzing and extending past trends, production, consumption and trade of the major feedstuffs and livestock products are projected in the years 1985 and 1990. The results of the projections are evaluated in Chapter V under the light of the expected policy changes. The final chapter contains a summary and the final conclusions of the study.

The analysis is based on secondary data from the U. S. Department of Agriculture and the Greek Ministry of Agriculture. Further information was provided from EEC publications and the review of the literature related to the subject.

The paper is far from exhaustive in the consideration of the variables involved. Hopefully, the effort would be a positive working tool for identification of future developments and problems in the Greek feed-grain-livestock subsector.

CHAPTER II

GREEK AGRICULTURE AND EEC ENTRY

A. The Greek Economy

During the last 25 years, extensive efforts have been devoted by the various Greek governments to the development of the country. The result was a significant improvement in the country's economic situation, especially from 1958 to 1973, through a high rate of growth in Gross Domestic Product, mainly by attracting foreign private investments which provided capital for the development of key industrial sectors. But unsolved structural problems combined with the international economic situation recently had severe effects on the rate of growth of the Greek economy, particularly after the period of the world-wide oil crisis of 1973.74.

The rate of growth in real GDP has recently declined, falling from a 5.5 percent average annual rate of increase during 1975-77 to 4 percent during 1978-80. Meanwhile, consumer prices have risen and the balance of payments shows an increasing deficit (Table 2.1). In view of these developments, forecasts of a 2.2 to 4.5 percent rate of growth in real personal disposable income may have to be modified. The actual figure will probably be between one and two percent. During 1977, the per real capita GDP in Greece was less than one-half of the EEC level (Table 2.2).

TABLE 2.1 GDP, CPI and Balance of Payment for Greece and EEC-9, 1978-1980 at Market Prices.

	1978	1979	1980	1978-80
	GDP (% of annual changes)			
Greece	6.4	3.9	1.6	4.0
EEC-9	3.2	3.5	1.0	2.6
	CPI (% annual changes)			
Greece	12.9	18.9	18.8	16.9
EEC-9	8.5	9.6	10.8	9.6
	Balance of Payments (million U.S. \$)			
Greece	-956	-1,882	-2,217	
EEC-9	+15,700	-13,500	-38,700	

Source: Provisional National Accounts of Greece (April 1981)

TABLE 2.2 Population, GDP and GDP per Capita in Greece and EEC-9 in 1977

	GDP	Population	GDP Per Capita
	(U.S. \$ M.)	(Thousands)	(U.S. \$)
Greece	26,200	9,268	2,830
EEC-9	1,581,000	259,156	6,100

Source: AGRA-EUROPE, Special Report, No. 3, 1979.

The annual growth of Greece's total population is particularly low, 0.6 percent during 1967-77. Unemployment does not represent a serious problem since it rose to only 6 percent during 1980 from 5.1 percent in 1979.

B. The Agricultural Sector

Agriculture plays a very significant role in the Greek economy. In 1978 the proportion of GDP accounted for by agriculture was 14.1 percent compared with 5.3 percent in the Community of Nine. The contribution of agriculture to GDP has, however, been declining. At 1970 prices agriculture's share has been reduced from 18.2 percent in 1970 to 14.1 percent in 1978 and to about 13.0 percent in 1979 (Table 2.3). This decline reflects in part the low level of investment in this sector which went along with an increase in investment in industry (Table 2.4).

Greek agriculture occupies about 30 percent of the economically active population, while in 1961 and 1971 the proportion was 54 percent and 40 percent respectively. This reduction in the agricultural work force, together with increased productivity has allowed the Gross Agricultural Product per economically active person to increase relative to Gross Product per active person in other sectors, although the gap still widened in absolute terms between 1961 and 1975 (Table 2.5).

The importance of the agricultural sector for the Greek economy becomes even greater if consideration is taken into account of its contribution to the balance of payments. Although the overall balance

TABLE 2.3 Gross Domestic Product by Main Sector ('000 million drachmae at 1970 prices)

	GDP (at factor cost)	AGRICULTURE	INDUSTRY	SERVICES	AGRICULTURE'S CONTRIBUTION (percent)
1970	258.0	47.1	81.0	129.4	18.2
1971	278.6	48.7	90.8	139.1	17.5
1972	304.0	51.5	102.0	150.5	17.0
1973	329.3	51.2	114.4	163.7	15.5
1974	323.3	53.8	101.7	167.8	16.6
1975	339.8	56.7	107.6	175.5	16.7
1976	360.4	56.0	117.6	186.8	15.5
1977	371.0	51.8	123.2	196.0	14.0
1978	392.8	55.5	131.1	206.3	14.1
1979	406.9	52.7	138.4	215.9	13.0

Source: AGRA-EUROPE, Special Report, No. 9, (1981).

TABLE 2.4 Gross Fixed Asset Formation in Agriculture and In the Total Economy ('000 Million Drachmae at 1970 prices)

	Total Investment in agriculture	Total Investment in all sectors	Percent Share for agriculture
1965	6.0	49.9	12.0
average 1965-70	6.8	60.6	11.2
average 1971-78	8.3	84.5	9.8
1976	7.7	79.8	9.6
1977	8.5	86.6	9.8
1978	7.3	90.0	8.1
1979	7.3	94.4	7.7

Source: AGRA-EUROPE, Special Report No. 9, (1981).

TABLE 2.5 Comparison of Gross Agricultural Product with Gross Product In Other Sectors, per Active Person

	1961	1971	1975	1977
GAP per active person ('000 dr.)	20.07	37.36	50.25	61.09
GP in other sectors per active person ('000 dr.)	65.39	119.55	137.36	148.49
GAP as a percentage of Gross Product in other sectors	30.7	31.4	36.6	41.1

Source: The Agricultural Policy of Greece, OECD, 1979. (1981).

of trade has been consistently negative over many years, the balance of trade in agricultural products has been positive. In 1967 the proportion of agricultural exports was 65.4 percent of the total exports. By 1979 this figure had fallen to 28.7 percent. This does not represent an absolute reduction, but rather the growth of the industrial sector. The proportion of agricultural products in total imports also fell from 18 percent in 1967 to 10 percent in 1975, but has remained at that level ever since (Table 2.6).

Greek agriculture is characterized by a number of structural problems such as:

- a) small size of farms scattered in an average of six to seven plots
- b) excess labor
- c) low capital investment
- d) low level of technology
- e) poor marketing and processing systems
- f) absence of any improved capital market
- g) distinctive demarcation between extensive and intensive farming

One of the major bottlenecks for the development of Greek agriculture is the small size of the majority of the farm holdings. The average farm in Greece has 4.39 hectares with over 90 percent of the farms with less than 10 hectares representing about 70 percent of the total cultivated land. Further, this situation does not seem to change through time. The changes observed from 1961 to 1977 are insignificant. Another problem combined with the small size is that farm holdings are scattered in an average of six to seven plots of about 0.6 ha. each (Table 2.7).

As a result of the high urbanization rate of the country, farm population was reduced to about 30 percent by the end of the 1970s. Despite the reduction this number represents a high proportion although it probably

TABLE 2.6 Greek Agricultural Trade, 1973 to 1979

	1973	1974	1975	1976	1977	1978	1979
Agricultural exports fob							
US \$ million	529	682	777	863	942	1021	1105
% of total exports	37	34	34	34	34	32.1	28.1
Agricultural imports CIF							
U.S. \$ million	444	536	551	539	630	645	888
% of total imports	13	12	10	9	10	10.1	10.8
Agricultural trade balance	+85	+146	+226	+324	+292	+376	+217

Source: AGRA-EUROPE, Special Report No. 9, (1981).

TABLE 2.7 Distribution of Number and Area of Farms by Size Groups and Fragmentation of Farm Holdings, 1961, 1971, 1977

Size Group (hectares)	1961		1971		1977	
	% of total		% of total		% of total	
	Number	Area	Number	Area	Number	Area
1 - 4.9	75.0	46.8	73.2	43.0	72.6	40.6
5 - 9.9	19.7	32.3	20.3	31.5	19.8	29.7
10 - 19.9	4.4	14.1	5.3	15.9	6.0	17.6
20 - over	0.9	6.8	1.2	9.6	1.6	12.1
Total	100	100	100	100	100	100
Total no. of farms	877,607		810,180		1,066,400	
Total area		3541		3437		3099
Average size		4.04		4.28		4.39
Number of plots per holding (1)	8.40		7.56		7.33	
Average size of plots (ha)	.48		0.57		0.63	

(1) Excluding holdings without land.

Source: Ministry of Agriculture: "Greece in the EEC", (1979).

includes a number of people who are involved in part-time farming activities. Approximately 55 percent of Greek farmers are over 45 years of age (Table 2.8).

Agriculture draws less than ten percent of the country's total fixed investment funds and 14 percent of total public investment. Between 1965 and 1979 about a quarter of the investment was in irrigation. As a result the irrigated area represents one-fourth (950,000 ha.) of the cultivated land while it is expected to expand by 40,000-50,000 ha. per year. Expenditures on machinery and equipment continues to rise and the mechanization of agriculture has been fairly rapid although it has proceeded at an uneven pace over the country as a whole since the farm structure of certain regions is more favorable to mechanized production. But in spite of the progress made, the level of mechanization is still low.

The synthesis of the Greek agricultural production is typical of the Mediterranean region. The gross value of total final agricultural production of Greece is made up of two-thirds crops and one-third animal products, although the contribution of the livestock products increased from 24.4 percent in 1961 to 33.7 percent in 1978 and its value was increased by 140.6 percent compared with a 52.5 percent increase of the value of crops for the same period, 1961 to 1978.

Furthermore, about 45 percent of Greece's farm production consists of Mediterranean-type products such as fruits, vegetables, raisins, olive oil, wines, tobacco, cotton, sheep and goats which are also the main exported commodities. On the other hand, Greece is self-sufficient in products such as wheat, barley, sugar beets, potatoes, pigmeat,

TABLE 2.8 Total and Economically Active Population: 1961, 1971, 1977 (Provisional) ('000 person and percent)

	1961		1971		1977	
	'000	%	'000	%	'000	%
Total Population	8,398	100	8,852	100	9,268	100
Rural	3,675	43.8	3,082	34.8	2,780	30
Urban	4,723	56.2	5,077	65.2	64,88	70
Active population (1)	3,505	100	3,218	100	3,005	100
in agriculture	1,885	53.8	1,295	40	866	28.8
in other sectors	1,620	46.2	1,923	59.8	2,139	71.2

(1) Older than 15 years

Source: OECD. The Agricultural Policy in Greece, (1979).

TABLE 2.9 Livestock Inventories by Type of Livestock in Greece, 1971-77

Year	Cattle	Sheep	Goats	Hogs	Hens
1971	966.7	7686.4	4184.7	504.5	28,643.5
1972	1062.6	7906.3	4261.3	590.3	30,661.9
1973	1239.9	8367.0	4471.7	825.7	29,566.4
1974	1247.0	8273.9	4476.1	761.1	30,053.3
1975	1189.2	8360.6	4607.7	708.7	28,843.2
1976	1119.9	8299.5	4565.6	818.6	29,962.7
1977	1039.1	8075.5	4508.3	866.2	28,185.1

Source: National Statistical Service of Greece, (various volumes).

poultry meat and eggs and is heavily dependent on imports of maize, protein feedstuffs, beef and cow's milk.

During recent years a reorganization of agricultural production has taken place. As a result the contribution of the traditional products such as cereals, tobacco and wines was reduced from 44 percent of the value of the total output in 1965 to 29 percent in 1977, while the contribution of intensive cultivations such as cotton, sugar beets, fruits and vegetables increased from 28 percent of the total value of agricultural output in 1965 to 38 percent in 1977.

Examining the individual commodities and taking the value of production as the criterion of comparison, it is seen that vegetables are first with a value of 16,026 million drachame, in 1976. Wheat comes second with a value of 13,876 mill. drs. and olive oil third with 13,500 mill. drs. Tobacco and seed cotton follow with values of 10,875 and 8,000 mill. drs. respectively.

Cattle production and sheep production are the most important livestock industries with 8,695 and 7,365 mill. drs. value of production respectively. Sheep milk production is third at 6,712 mill. drs. mainly due to the good price for this kind of milk. Pigs and poultry follow with 6,554 and 4,996 mill. drs. The milk industry taken as a whole comes first among all livestock production industries. The value of all categories of milk was 14,504 mill. drs. in 1976. Milk production in Greece is characterized by a high proportion of ewe's and goat milk (58 percent) used for cheese production, while the rest, 42 percent, cow's milk used for liquid production (Table 2.10).

TABLE 2.10

Gross Value of Final Agricultural Production (1976)
(Million Drachmae and 5)

CROP PRODUCTION			ANIMAL PRODUCTION		
Product	Value	% of Total	Product	Value	% of total
Wheat	13,876	7.32	Cattle	8,625	4.86
Rye	32	0.02	Sheep	7,365	4.15
Barley	4,842	2.73	Goats	3,834	2.16
Maize	3,064	1.72	Pigs	6,554	3.69
Oats	581	0.33	Poultry	4,996	2.81
Rice	773	0.43	Other	562	0.32
Total Cereals	23,168	13.05	Total meat	31,936	17.99
Potatoes	5,838	3.29	Cows	4,410	2.48
Vegetables	16,026	9.03	Ewes	6,712	3.78
Fruit	7,891	4.45	Goats	3,372	1.90
Wine	4,134	2.33	Buffalo	10	0.01
Tobacco	10,873	6.13	Total Milk	14,504	8.17
Sugar Beets	3,380	1.90	Eggs	4,762	2.68
Oil seeds	810	0.46	Other animal products	3,825	2.16
Olive oil	13,500	7.61	Total animal production	55,027	31.00
Table olives	1,394	0.78			
Seed cotton	3,000	4.51			
Other crops	27,436	15.46			
Total crops production	122,460	69.00			

Source: Greek Ministry of Agriculture

C. The Livestock-Feedgrain Subsector

The livestock-feedgrain subsector plays a secondary role in Greece. The reason lies in land characteristics and in the climatic conditions, particularly the uneven seasonal distribution of rainfall throughout the year, resulting in poor natural vegetation. As a result, the types of livestock found in Greece are directly related to the kind of vegetation that is available.

The predominant type of animal farming is still the small family farm, with two to four head of cattle or 10 to 50 goats and sheep. In the case of poultry, however, 85 percent of poultry meat and 65 percent of eggs are supplied by large commercial enterprises and the rest by small farms. (9)

Total meat production has risen from 304,000 tons in 1970 to 509,000 tons in 1980. This was achieved mainly by improving breeds, nutrition and health programs which resulted in a higher output of meat and dairy products although the number of animals remained practically unchanged during the last decade (Table 1.9).

Despite the success achieved, domestic meat production is not sufficient to cover a steadily growing demand. As a result, imports of meat, especially red meat, creates an increasingly serious problem for the country's balance of payments. Imports of meat and live animals were worth 193 million U. S. dollars in 1977, up from 72 million a decade earlier and rose further to 282 million in 1978. This represents about four percent of the total imports of all products. However, Greece has become self-sufficient in pig and poultry meat to a large extent by the use of imported feedstuffs. Thus, the country has to depend on imports in order to maintain this self-sufficiency, especially on maize

imports which alone accounted for over one million tons in 1978 and 1979.

At the same time, livestock products account for about six percent of the total value of agricultural exports and consist mainly of hides and skins.

D. The Entry into the EEC

Two years after the establishment of the European Economic Community, Greece requested and became the first associate member, in 1961. In 1975, Greece applied for full membership in the EEC. After five years of negotiation Greece was accepted as a full member of the EEC on January 1, 1981.

During the period of negotiations, the problems of integration of Greek agriculture into the Common Agricultural Policy was a major problem. The core of the problem was the length of the transitional period needed for Greek agriculture to be fully integrated. The Treaty of Accession provided for a five-year transition period for all products except for fresh and canned peaches, fresh tomatoes and tomato paste. Other particular points of the agreement are: (a) the price differences between Greek and EEC farm products were to be examined to determine whether or not accession compensatory amounts should be applied on trade in individual products, and (b) for cotton, dried raisins, currants and dried figs of which Greece is the only major producer in the EEC, the Community agreed to introduce a common regime and to provide production
(2)
aids.

CHAPTER III
CHANGES IN AGRICULTURAL POLICIES

In this chapter the Greek agricultural policy is presented. More specifically, the elements of the policies affecting the feedgrain-livestock subsector such as price and trade policies and subsidy programs, are examined. There is also a discussion of the transitory period during which the Greek agriculture should be harmonized with the Common Agricultural Policy of the EEC. Finally, an effort is being made to present the situation of the agricultural sector in Greece after the transition period, with emphasis being placed on the feedgrain-livestock subsector, taking into account the policy and institutional changes required.

A. Greek Agricultural Policy

Agricultural policy in Greece has a dual economic and social character. The long-term economic objectives aim at increasing agricultural production while the shorter-term social objectives seek to raise farmers' incomes and level of living for rural people. Furthermore, taking into account that despite a persistent overall balance of trade deficit, the agricultural sector has provided a growing trade surplus, the policy aims are designed to ensure that this surplus is increasing.

The principal objectives of Greek agricultural policy can be summarized in three basic categories:

1. To increase agricultural productivity.
2. To stabilize and raise incomes of the rural population thus, improving the rural level of living.
3. To increase agricultural production so that regular supplies
(20)
to the domestic market are guaranteed.

In their efforts to improve the structure of the agricultural sector, Greek governments have used various measures. Recent policies have focused on land tenure in order to increase the average size of the Greek farms and land improvement investments, especially irrigation. Emphasis is given to increasing the quantity and quality of agricultural inputs especially machinery and livestock. To achieve these goals input subsidies, investment aids and a large volume of selective farm credit are in effect.

Simultaneously, producers are supported through government intervention in the market. Price guarantees and input subsidies are often combined with direct payments to keep market prices relatively stable as well as for guiding production of commodities which are in short supply or have export potentials. Furthermore, the farmers of the semi-mountainous and mountainous areas receive additional direct income aids. At the same time a number of commodities, especially livestock products, have been subject to price controls at the wholesale and retail levels while the producer receives a direct payment.

Agricultural trade policy is designed to complement domestic policy. Exports of competitive products are promoted through subsidies, while farm imports are regulated through quotas, tariffs and import licensing.

In addition to the long-term objectives mentioned earlier, a short-term but very important objective should be added. That is, the reorientation of Greek agriculture so as to facilitate integration with the EEC. Recent agricultural programs have stressed achievement of complementarity between Greek farm production and that of the EEC as well as the achievement of a higher degree of self-sufficiency in commodities which are largely imported.

The emphasis is on expanding the production of commodities on which Greece has a relative advantage and of early varieties of fruits in order to minimize competition from other Mediterranean areas of the EEC.

B. Policies Affecting the Feedgrain-Livestock Subsector

The main goals of the feedgrain-livestock policy in Greece have been to reduce the deficit in red meat and the degree of dependence on imported feedstuffs while keeping consumer prices low.

During recent decades the prices of many livestock products have been subject to state control. Maximum producer prices for beef were fixed at levels which did not cover production cost while processors' profit margins were set as fixed percentages of the price. As a result slaughtering of cattle increased and the national herd started to decline. The policy measures taken to protect against future herd reductions have concentrated on price guarantees combined with subsidies in the form of direct payments. Farmers have received a direct payment per kg. of liveweight to retain cows until the birth of the third calf. As an additional incentive maximum producer prices for calves have been increased.

Regulation of foreign trade in livestock products has been so inconsistent that great imbalances between domestic demand and supply have occurred. In addition to beef, price controls were in effect for products such as cow's milk, cheese, pigmeat, poultry and eggs at both the wholesale and retail levels, while prices for goat meat were free from controls. Prices for mutton and lamb were left free in 1975, resulting in an appreciable increase in producer's prices, so that average costs were covered. Average costs of production have also been covered by the fixed poultry and pigmeat prices.

However, the future of the red meat deficit depends on the solution to a number of structural problems which the cattle industry faces. About 80 percent of the production takes place in small-scale farms on low productivity natural pastures where improvement becomes very difficult given the excessive fragmentation of the holdings. In the mountainous and semi-mountainous areas winter feeding is problematic, thus, the fattening units have had to depend on concentrates provided by the state at prices about 30 percent lower than the cost.

Simultaneously, incentives such as raising the price of maize and barley relative to that of soft wheat and the payment of a premium per hectare of maize grown as a second crop were provided to the feedgrain producers. The country remains increasingly deficient in animal feedstuffs as demand has grown faster than supply and has had to depend heavily on imports handled by state agencies since feedstuff trading has long been a state monopoly.

C. Consequences of the Harmonization of the Greek Agricultural Policy With the EEC

The main subject of this section is the prediction of some of the effects of full membership in the EEC upon the Greek feedgrain-livestock subsector. More specifically, the institutional changes required and the expected impacts on production and consumption due to changes in domestic prices associated with the harmonization of the Greek agricultural policy with the current EEC regime are initially identified.

1. Institutional Changes

The Greek government is obliged to restructure a major part of the institutional system under which prices and market policies are administered and the Greek institutions will have to be coordinated with the agency administering the CAP (FEOGA).

The most significant changes will be those concerning the cooperative organization, KYDEP, and the Agricultural Bank of Greece. KYDEP monopolizes the marketing of feedgrains representing the government. Under the CAP, this monopoly has to be eliminated and different marketing channels must be developed. The Agricultural Bank is another state agency responsible for implementing agricultural policy and controlling the credit system in the agricultural sector. The Bank must now reorientate its activities, functioning as a development agency depending more on private savings and associated closer with the commercial banks.

Further changes include the elimination of input subsidies such as those provided to livestock producers for purchase of feedgrains and the termination of direct income supports. Another expected change is the harmonization of the marketing system with the EEC regulations, e.g. the recently established meat cutting system similar to that of the EEC. Finally, quantitative restrictions on agricultural trade, e.g. quotas on frozen beef imports or export subsidies for which there are no equivalent in the EEC, must be abolished.

2. Consequences for the Feedgrain-Livestock Subsector

(a) The feedgrain industries. Application of the CAP implies significant changes in the feedgrain industries among which the more significant is the dismantling of the state controlled trade and the termination of subsidies.

The elimination of the state subsidies on feedgrain sales to livestock producers, which are estimated to have reached a level of 3,200 mill. drs. over the period, 1978-1980, combined with unrestricted imports available at 10 to 15 percent below existing domestic prices

should nullify the advantage of utilizing domestically produced grains. As a result, an increase in imports is expected to be associated with changes in the composition of feed rations.

More specifically, livestock producers facing higher feeding costs should shift to the cheaper imported grains particularly protein sources, such as soybean meal, and concentrates such as sorghum from the U. S.

On the other hand the EEC intervention price levels which are higher than the Greek prices and the common levy system prevailing in the EEC could result in expanding feedgrain production.

The overall consequences of these developments depend on the anticipated price changes for livestock production. If, as it is expected, livestock product prices will go up sufficiently to offset the cost of feeding, an increase in the national herd could lead to an increasing demand for feedgrains and incentives for expanding production. (Table 3.1).

(b) Beef and veal. The beef industry had to face significant changes, the most important being the abolition of input subsidies. During the immediate pre-accession period, the guaranteed price of beef was increased significantly in order to compensate for the termination of the aid granted to producers for the purchase of feedingstuffs. Consequently, Greece had adopted the full EEC guide and intervention price levels by accession. The combination of the sharp increase in beef prices more than offset the elimination of the feed price subsidies, hence, creating some incentive for production expansion.

TABLE 3.1 FARM PRICES IN GREECE FOR FEEDGRAIN-LIVESTOCK PRODUCTS
BEFORE AND AFTER ACCESSION IN THE EEC (drs/kg)

	1978	1979	1980	January 1st, 1981 *
Barley	6.65	7.61	9.40	9.87 (1)
Maize	6.88	7.65	9.43	9.87 (1)
<u>Beef and veal</u>				
Adult cattle	78.39	99.63	117.89	not available
Sheepmeat	119.81	158.26	197.17	202.02 (2)
Pigmeat	66.68	81.49	94.87	97.78 (3)
Milk	9.51	10.39	12.15	13.58 (4)

- (1) Intervention price
- (2) Reference price
- (3) Basic price
- (4) Target price

Source: a) Prices for 1978, 1979 and 1980 from the Greek Ministry
of Agriculture
b) Prices for 1981 from AgraEurope Special Report No. 5.

On the other hand, imports of low-priced beef and of better quality, higher-priced beef from the northern EEC countries are expected to continue to impose a burden on the country's balance of payments.

Although price incentives are expected to stimulate increased production, they will limit any growth in consumption which will affect primarily the imports.

Another significant change has to do with the improvement of the marketing system. Marketing services are available at a high cost and are of poor quality. This is due to the oligopolistic structure of meat wholesaling and the small volume of carcass meat handled by wholesalers. Furthermore, until recently meat was not graded. However, the recent establishment of a national meat cutting system (similar to that of the EEC) is expected to lead to needed improvements in the structure of the marketing and processing system.

(c) Sheep and goats. Sheep and goatmeat production is expected to be one of the industries which will benefit from Greek entry into the EEC. During the pre-accession period, the Greek market price for lamb and mutton of 326.55 ECU/100 kg. were above the EEC average level of 302.44 ECU/kg. In fact, the Greek reference price under the EEC regime has been set at the French level of 345 ECU/kg.

Satisfactory price levels combined with the stability afforded by the EEC regime will very likely result in an increased supply response. However, per capita consumption is already very high and consumption increases, if any, should be very low, resulting in the potential sheep meat surpluses.

(d) Pigmeat. The swine industry is among the industries which have to deal with significant problems associated with the Greek entry into the EEC.

Although the full EEC price levels for pigmeat have been adopted, it is unlikely that they will cover increased production costs after the abolition of the subsidy on feedgrain purchases. At the same time it will face the competition of the highly efficient Northern European swine industry, limiting its profit potential.

Per capita consumption, being much lower than the EEC's, is expected to increase, reflecting a probable shift from beef to pork consumption.

(e) Poultry. The poultry industry in Greece is considered to be modern and efficient but has to depend heavily on imported feed-stuffs, mainly from the U. S. By accession, Greek market prices were judged to be equivalent to the EEC levels. However, Greek production costs were still based on subsidized feed inputs. With the removal of feed subsidies, poultry enterprise profits were adversely affected.

Greek producers can still benefit from the current EEC poultry meat regime under which a common levy system is being applied on imports from Third Countries, exports are subsidized and funds are available for improving the infrastructure of the industry. Furthermore, the poultry industry should not face serious competition from the industries in other EEC countries. At the same time demand is expected to rise further as additional consumption is generated from the expanding tourist industry.

(f) Milk. Greece's accession came at a time when the EEC dairy sector faces a severe structural crisis. As the pre-accession guaranteed price for cow's milk was almost identical with the EEC intervention levels, Greece adopted the full EEC prices by accession. The new prices reflect a slight increase but this is not sufficient to compensate for the problems which the industry has to deal with. Although cow's milk production is expected to increase through the improvement of herds, if unaccompanied by structural improvements, many small-scale farmers could be driven out of production.

The situation seems to be different for sheep and goat milk for which prices are expected to be significantly higher. Also, given that the Greek consumer shows a strong traditional preference for white cheese, the production of which utilizes almost all the sheep and goat milk produced, production could expand substantially.

Cow's milk consumption has increased rapidly, leading to increased imports, mainly of condensed milk coming from the EEC, but overall, the Greek dairy market is too small to absorb any significant amount of the EEC dairy surplus.

CHAPTER IV

LIVESTOCK AND FEEDGRAINS-TRENDS AND PROJECTIONS

Introduction

In this chapter production, consumption and trade for the main livestock and feedgrain products in Greece, during the last 15 years, are examined and projected in 1985-1990.

For each commodity it was assumed that:

- (1) $Q = f(T)$, where
Q = quantity
T = time

The specific function of equation (1) for each commodity was chosen according to the pattern of the past trend. The equations were solved by the Ordinary Least Squares (OLS) procedure with the help of the MINI-TSP computer program and projections were obtained for 1985 and 1990.

This technique assuming a continuation of past trends, is subject to a number of limitations. It does not take account changes in factors affecting demand and supply such as prices, costs, competitive and complementary products, income, population and technology. However, all these factors are expected to be affected by the Greek entry into the EEC and the implementation of the CAP in Greece. This poses additional problems in qualitatively evaluating the results of the projections undertaken. Consequently, the findings of the study should be treated merely as rough indications.

A. The Livestock Industries

The livestock subsector in Greece produces about one-third (31 percent in 1976) of the total value of the Gross Agricultural Product. The subsector's share reaches 36 percent when the value of feedgrain production is added.

The livestock subsector is constrained by topography and climatic conditions of land conformation, particularly in the uneven distribution of rainfall throughout the year, resulting in poor natural vegetation. Simultaneously, government imposed wholesale price controls have limited the returns to producers who find the alternative of industrial crops and vegetable production more attractive.

Despite an increase achieved in total meat production, which has risen from 304,000 tons in 1970 to 509,000 tons in 1980, imports of meat and livestock products have been an increasing drain on the Greek balance of payments as rising living standards have led to higher consumption. While the relative shortage is concerned mainly with red meat, the country depends on imported feedstuffs to sustain its self-sufficiency in pig and poultry production. In the area of dairy products, only condensed milk is imported.

Skins and hides are the only livestock exports and account for six percent of the value of agricultural exports and 1.8 percent of the value of the total exports.

1. Beef and veal

Beef and veal production is one of the basic branches of the livestock subsector, contributing about 16 percent of the gross value of total livestock production and about 5 percent of the gross value of farm products.

The bulk of production takes place on the typical Greek farm which raises one to nine head of cattle and represents 95 percent of the cattle enterprises. The rest of the production comes from the modern, specialized units which raise more than

(7)
100 head of beef cows or 400 head of fattening calves.
Nearly all of the cattle are dual-purpose, raised to produce both beef and milk.

A number of physical constraints and structural problems make the future of the Greek cattle herd problematic. Inefficient production methods, dependence on expensive (although subsidized) imported feedingstuffs and a state operated maximum wholesale price control have failed to build up a sufficient national herd to meet domestic demand. As an example, the number of modern specialized beef units was reduced by 17 percent during the period, 1976-1978. (11)

Between 1965 and 1975 cattle numbers increased slightly from 1,083,000 head to 1,184,000 head but subsequently fell, reaching 975,000 head in 1978. At the same time slaughter volume doubled from 62,000 tons in 1965 to 117,500 tons in 1978 after reaching a peak of 127,000 tons in 1975. (23) This significant increase is mainly the result of the replacement of native breeds with new, higher-yielding breeds imported from the U. S. and Northern European countries. According to the latest figures, slaughter volume has again fallen below 100,000 tons to 98,000 tons and 97,000 tons in 1978 and 1979 respectively. (Table 4.1).

TABLE 4.1

BEEF PRODUCTION, CONSUMPTION AND TRADE IN GREECE,
1965-1977

	Production	Stocks	Imports	Exports	CONSUMPTION	
					Total	Per Capita
	Thousand Tons				Kilograms	
1965	62.0	0.7	30.6	0.1	91.5	10.7
1966	72.9	1.7	28.6	-	102.5	11.9
1967	75.7	0.7	39.2	-	114.5	13.1
1968	84.2	1.1	45.1	-	129.4	14.8
1969	85.9	1.0	54.7	-	141.6	16.1
1970	89.8	-	68.1	-	155.9	17.7
1971	86.8	2.0	46.8	-	132.8	15.1
1972	92.1	2.8	40.2	-	132.6	14.9
1973	89.4	2.5	61.5	-	131.9	14.8
1974	116.5	21.5	24.6	-	135.0	15.1
1975	126.8	27.6	37.4	0.2	161.6	17.9
1976	122.3	30.0	79.2	-	201.5	22.0
1977	120.6	30.0	90.4	-	211.5	22.8
1978*	117.5	18.5	108.0		207.	
1979*	99		110.0		210	

Source: USDA, selected agricultural statistics in Greece, 196-77.

* AGRA EUROPE Special Report 5.

Increased incomes sharply increased the consumption of beef and veal which rose from 4.9 kg/head in 1960 to 22.8 kg per capita in 1977, slightly below the EEC level of 26 kg per capita in 1978.⁽²⁾ This represents a 465 percent increase compared with an increase in production of only 386 percent over the 1960-1978 period. As import requirements have risen, domestic production accounted for only 57 percent of total consumption in 1978 and 47 percent in 1979 (Table 4.1).

Greece's main suppliers of fresh and chilled beef are Yugoslavia and Eastern European countries, while Argentina is the main source of frozen beef.

Consumption and imports appear to be increasing as past trends are projected. More specifically, consumption is estimated

to be 253,000 tons in 1985 and 292,000 tons in 1990 (Figure 4.1.a) while production is projected to be 113,800 and 126,200 tons for the respective years (Figure 4.1.b). According to these numbers, imports may reach 130,000 tons and 166,800 tons in 1985 and 1990 (Figure 4.1.c) which means that domestic production will continue satisfying less than 45 percent of the total demand.

FIGURE 4.1.a.

BEEF CONSUMPTION IN GREECE, ACTUAL, 1965-1978
AND TREND PROJECTIONS, 1985,1990.

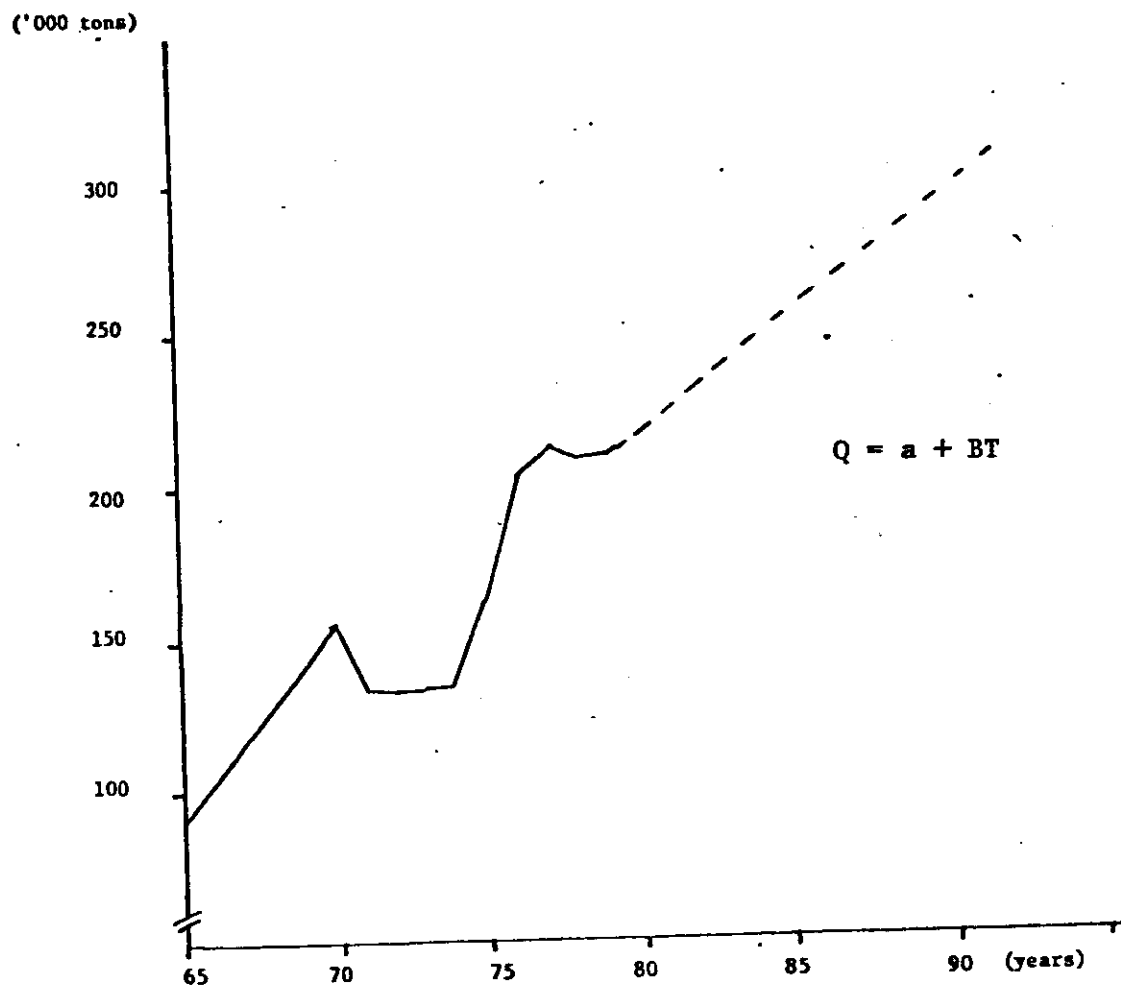


FIGURE 4.1.b.

BEEF PRODUCTION IN GREECE, ACTUAL 1965-1978
AND TREND PROJECTIONS, 1985-1990

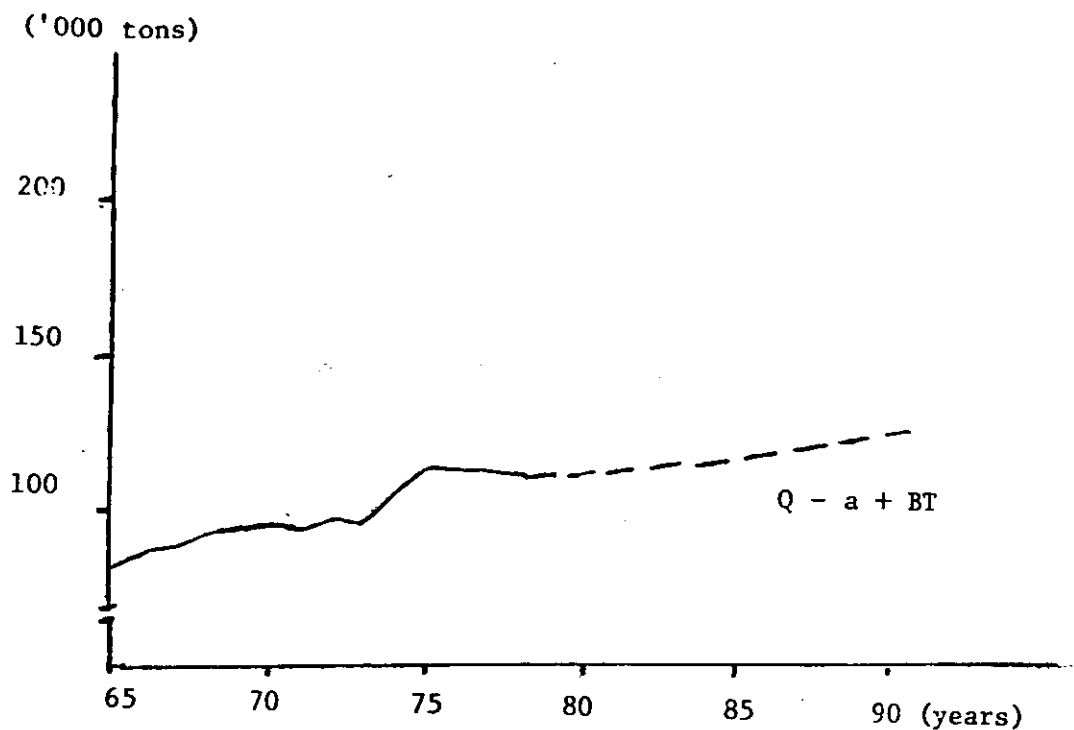
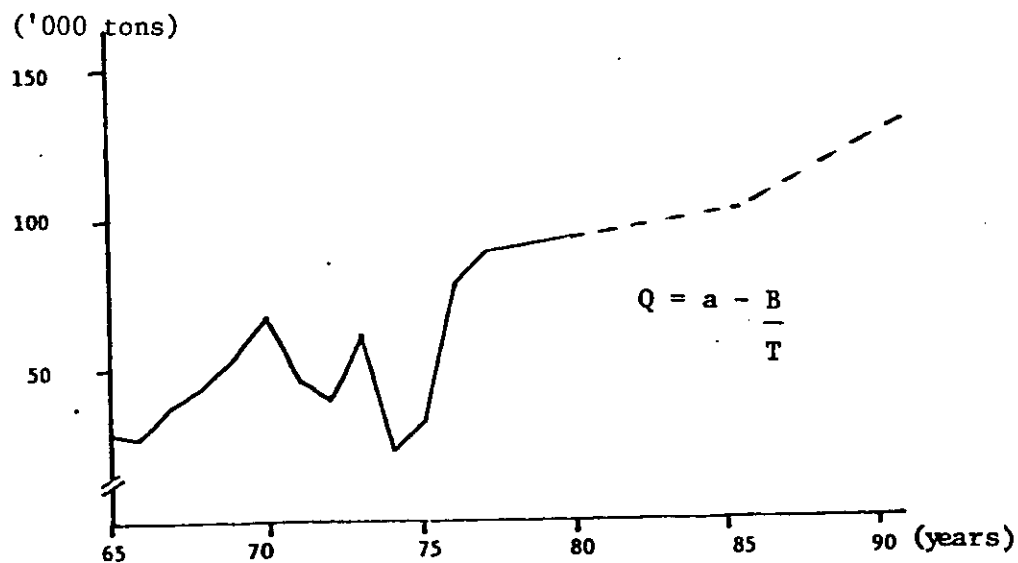


FIGURE 4.1.c.

BEEF IMPORTS IN GREECE, ACTUAL 1965-1978
AND TREND PROJECTIONS 1985,1990



2. Sheep and Goats

Sheep and goat production is the most important industry within the Greek livestock subsector, contributing about 25 percent of the total value of livestock production. The climate and geographic conditions of the country are suited to extensive grazing, making sheep and goat farming the basis of the rural economy in the mountainous and semi-mountainous areas where they utilize land unfavorable to crops. Furthermore, they are found in the plains as a complementary activity to crop farming, utilizing cereal crop aftermath, especially wheat. Sheep and goats are raised mainly in free grazing flocks by the typical small family farm which owns 10 to 50 head.

Sheep and goat flocks increased slowly between 1965 and 1979. The number of goats increased from 3895 million to 4508 million and the number of sheep from 7819 to 8075 million. Output grew at the lowest rate of all the livestock groups. Production of both meats rose from a combined total of 70,300 tons in 1965 to 119,000 tons in 1979 including 80,000 tons of sheepmeat and 39,000 tons of goat meat ⁽²³⁾ (Table 4.2).

Greek production of sheepmeat amounts to over 20 percent of the total production in the EEC-9. Despite this high level of production for a country with a human population of under 10 million, Greece is only 90 percent self-sufficient in sheepmeat and goat meat due to the extraordinary high level of consumption, 14 kg. per capita, compared to the 3 kg. per capita average of the EEC. ⁽²⁾

To support this consumption level, imports which reached a maximum of 60,000 tons in 1971 were required. During recent years

TABLE 4.2

SHEEP AND GOAT MEAT PRODUCTION, CONSUMPTION AND
TRADE IN GREECE, 1965-1979

	Production			Imports	Consumption	
	Sheepmeat	Goatmeat	Total		Total	Per capita
		Thousand	tons			Kilograms
1965	53.4	25.9	79.3	31.7	109.1	12.8
1966	55.3	26.9	82.2	33.6	117.3	13.6
1967	57.0	27.6	84.6	34.6	118.5	13.6
1968	55.9	28.5	84.4	33.4	117.9	13.5
1969	59.3	30.5	89.8	35.8	126.4	14.4
1970	59.9	31.0	90.9	40.1	129.6	14.7
1971	63.2	32.9	96.1	60.3	155.1	17.7
1972	66.3	34.1	99.4	46.8	146.6	16.5
1973	69.8	35.9	105.7	41.0	136.3	15.3
1974	74.3	38.1	112.4	7.8	115.2	12.9
1975	76.3	38.9	115.2	12.0	125.0	13.8
1976	79.0	40.7	119.7	13.3	133.1	14.5
1977	79.4	41.1	120.5	8.0	133.5	14.4
1978*	79.9	41.9	121.8	11.0	131.8	
1979*	80.2	38.5	118.7	8.0	126.7	

Source: USDA selected agricultural statistics on Greece, 1965-1977.

* AGRA EUROPE Special report No. 9.

however, consumption has settled at the level of 130,000 tons, about 20 percent lower than 1971. Imports have been stabilized at around 10,000 tons annually, mainly frozen meat imported from New Zealand and Argentina (Table 4.2).

Projections of trends in sheepmeat and goat meat production consumption and trade indicate that during the next decade, Greece could be a potential exporter of these meats. Production in 1985 is estimated at 143,000 tons and about 157,000 tons in 1990 based on past trends (Figure 4.2.b) while consumption increases to 141,000 tons and 144,000 tons (Figure 4.2.a). Consequently, Greece could be an exporter of 2000 tons and 13,000 tons by 1985 and 1990 respectively (Figure 4.2.c.).

FIGURE 4.2.a.

SHEEP AND GOAT MEAT CONSUMPTION IN GREECE,
ACTUAL 1965-1978 AND TREND PROJECTIONS,
1985,1990

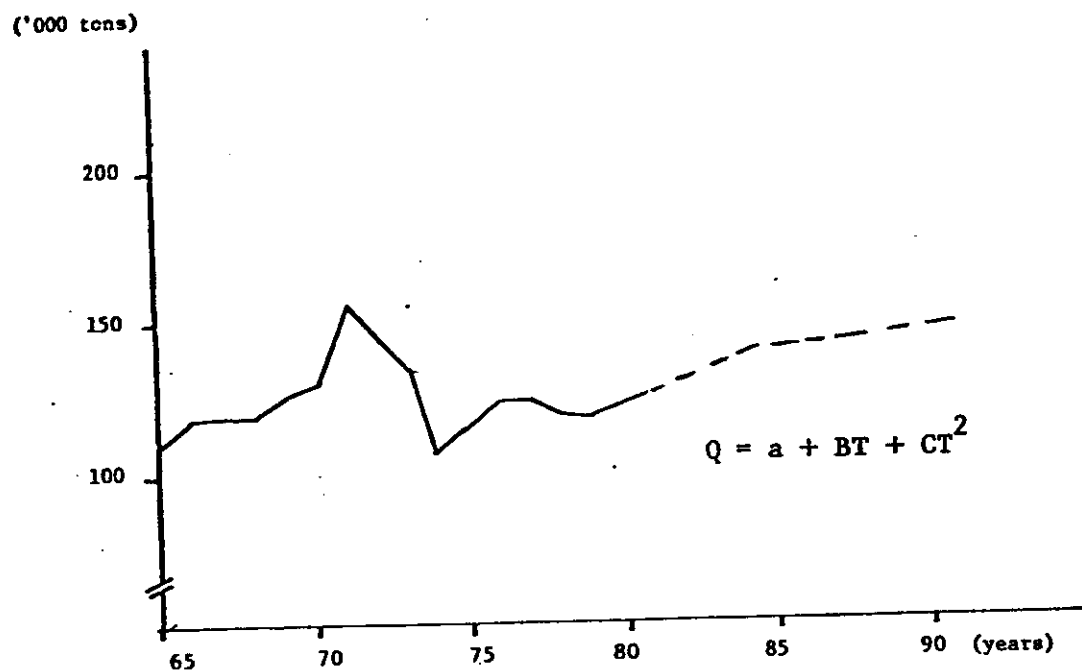


FIGURE 4.2.b

SHEEP AND GOAT MEAT PRODUCTION IN GREECE, ACTUAL,
1965-1978 AND TREND PROJECTIONS, 1985, 1990

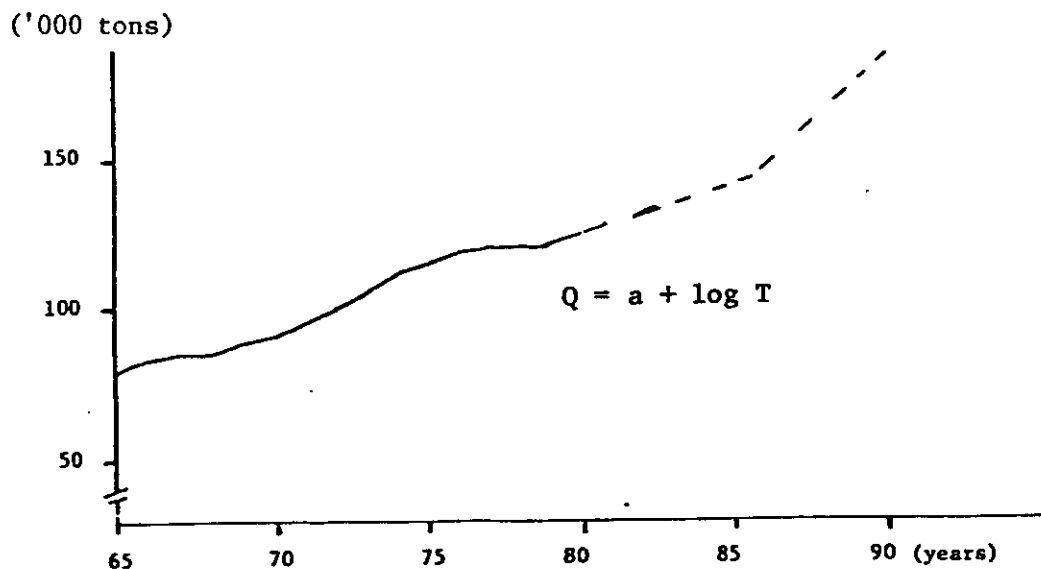
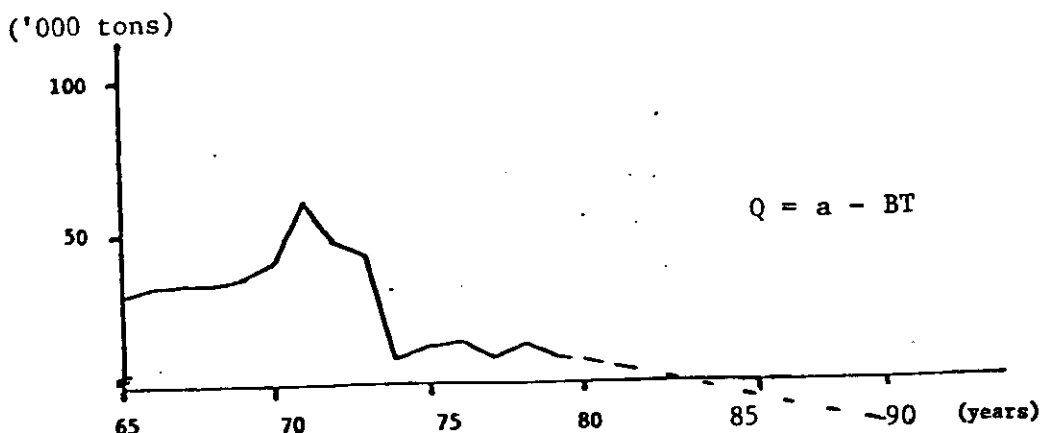


FIGURE 4.2.c.

SHEEP AND GOAT MEAT IMPORTS IN GREECE, ACTUAL 1965-1978
AND TREND PROJECTIONS, 1985-1990



3. Pigmeat

The swine industry in Greece expanded rapidly during the early 1970s when modern, larger-scale specialized units became established. The industry contributed about 12 percent of the total value of the livestock products by 1976.

Because of improved infrastructure, modern units, high technology and improved swine breeds combined with satisfactory producer prices, pig numbers increased from 558,000 head in 1965 to 1,042,500 head in 1979. Pigmeat production rose from about 45,000 tons to 135,000 tons over the same period, (Table 4.3)

Per capita consumption rose from 5.8 kg/head in 1965 to an estimated 15.5 kg/head in 1979 with about 80 percent of total consumption taking place during the last months of the year (cold season). Greece is about 90 percent self-sufficient in pigmeat, importing an average of 15,000 tons annually during recent years. Imports are mainly from Bulgaria and Hungary in

the form of fresh or frozen hams, (Table 4.3).

TABLE 4.3

PIGMEAT PRODUCTION, CONSUMPTION AND IMPORTS
IN GREECE, 1965-1980

	Production	Imports	Consumption	
			Total	per capita
	Thousand	tons		Kilograms
1965	46,500	0.5	47,000	5.5
1966	46,741	2.5	49,200	6.1
1967	51,225	0.8	52,100	5.4
1968	46,140	1.1	47,200	5.1
1969	39,841	4.9	44,700	5.2
1970	44,826	1.2	46,000	6.1
1971	52,056	1.2	53,300	7.3
1972	63,219	0.4	63,600	8.4
1973	73,785	0.4	74,200	10.2
1974	90,530	0.4	90,900	11.8
1975	105,646	0.3	105,900	11.6
1976	103,279	1.6	104,900	12.4
1977*	111,217	2.0	113,200	14.2
1978*	120,473	11.1	131,400	15.5
1979*	135,450	19	154,000	
1980**	144,337	16	160,000	

Source: USDA selected agricultural statistics on Greece,
1965-1977

* AGRA EUROPE special report 5.

** Unofficial estimates of the Greek Ministry of Agriculture

Projecting past trends it is estimated that production could reach 182,000 and 220,000 tons in 1985 and 1990 respectively (Figure 4.3.b). For the same years consumption is projected at 197,000 and 239,000 tons (Figure 4.3.a). These figures indicate that both production and consumption will continue increasing at about the same rate and imports will remain around those of the recent years or about 15,000 to 20,000 tons annually.

FIGURE 4.3.a

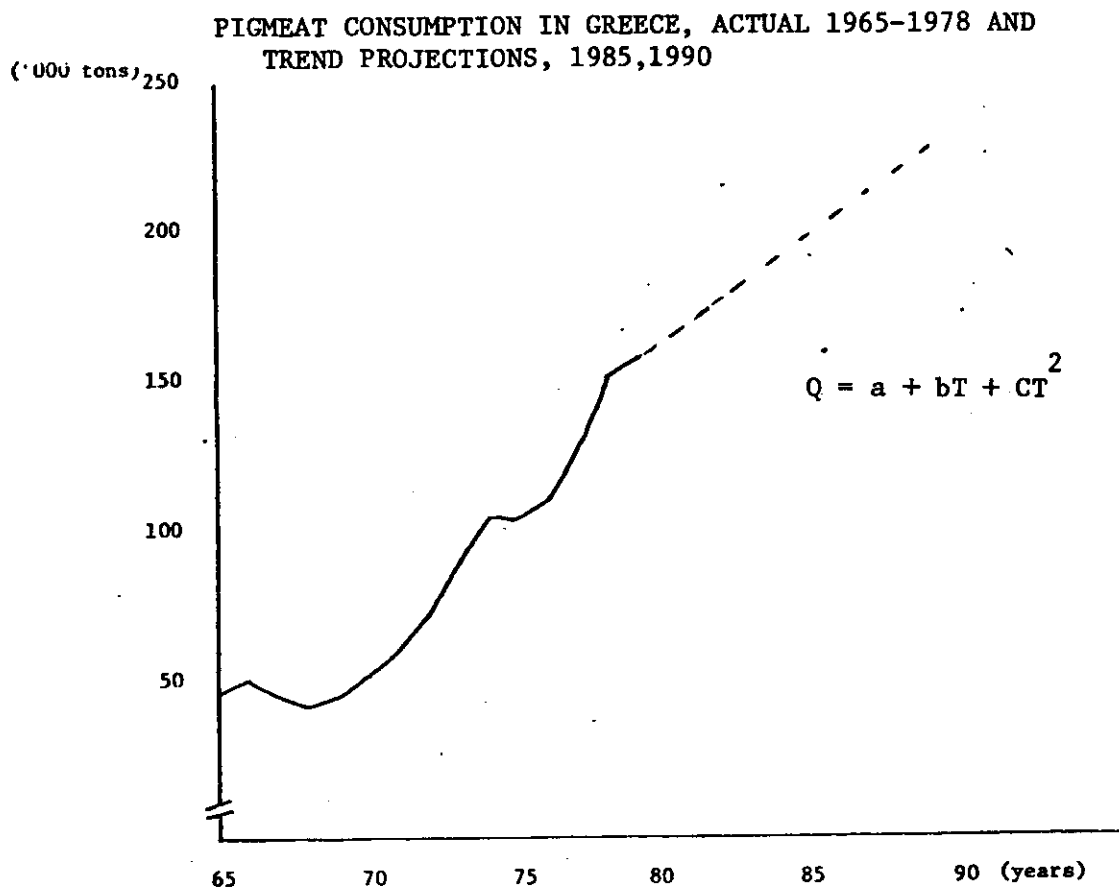
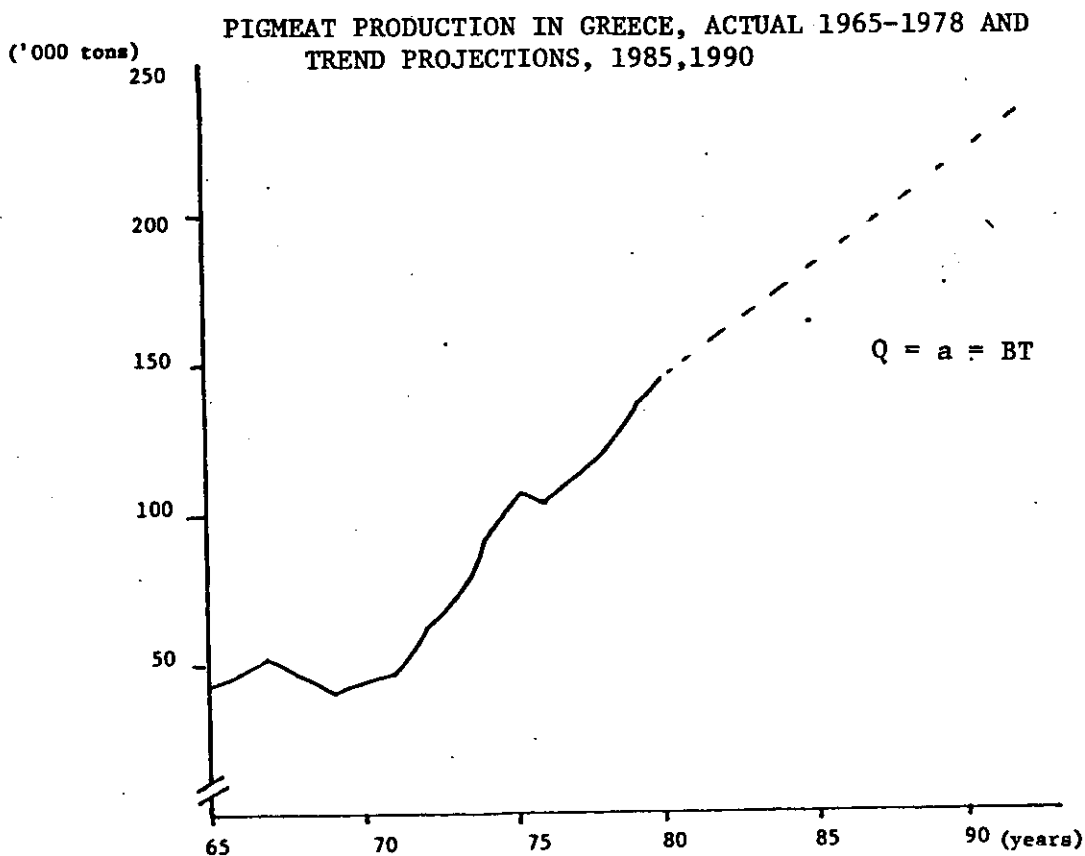


FIGURE 4.3.b.



4. Poultry

(a) Poultry meat. Poultry meat production has expanded rapidly in Greece as a result of the developing of modern poultry-raising techniques involving intensive production. Modern units with over 5000 birds each are now common in Greece and 85 percent of production comes from large, commercial enterprises.⁽²⁾ The value of poultry meat represents about 16 percent of the value of all meat and 10 percent of the gross value of livestock products.

Over the period, 1965-1977, production increased 458 percent, reaching 117,400 tons in 1977 against 25,100 tons in 1965. Per capita consumption rose from 4.3 kg. to 12.9 kg. during 1965-1977 (Table 4.4), almost at the EEC's level which ranges between 12.1 to 13.8 kg.

Greece has maintained 100 percent self-sufficiency since 1974 as consumption has tended to follow the fluctuations in production. An extension of past trends indicates that during the next decade Greece could become deficient in poultry meat. More specifically, while consumption, according to projections, is expected to reach 174,000 tons in 1985 and 199,000 tons in 1990 (Figure 4.4.a.) production is estimated to be 138,000 tons and 162,000 tons for the respective years (Figure 4.4.b.)

TABLE 4.4

POULTRY MEAT PRODUCTION, CONSUMPTION AND TRADE AND
EGG PRODUCTION IN GREECE, 1965-1977

	Production	Stocks	Imports	Exports	Consumption		Egg Production* (million eggs)
	Thousand	Tons			Total	Per capita Kilograms	
1965	25.1	1.7	11.5	-	26.7	4.3	1633.4
1966	33.0	1.6	11.3	-	44.3	5.1	1745.7
1967	43.5	1.6	7.8	-	51.9	6.0	1751.2
1968	42.0	1.0	11.6	-	53.1	6.1	1790.2
1969	55.5	1.5	6.3	-	62.5	7.1	1904.0
1970	67.4	0.8	2.1	-	69.3	7.9	1930.7
1971	84.0	1.0	2.9	-	86.5	9.9	2154.3
1972	94.1	1.4	1.9	-	95.5	10.7	2096.3
1973	104.9	1.9	5.0	-	111.4	12.5	2079.8
1974	103.9	0.4	1.3	-	105.5	11.8	9099.8
1975	116.5	0.2	0.1	-	116.8	12.9	2115.6
1976	121.8	-	-	-	118.8	130.	2342.9
1977	117.4	3.0	-	-	119.4	12.9	2234.2

Source; USDA selected agricultural statistics on Greece, 1965-1977.

FIGURE 4.4.a.

POULTRY MEAT CONSUMPTION IN GREECE, ACTUAL 1965-1978
AND TREND PROJECTIONS, 1985,1990

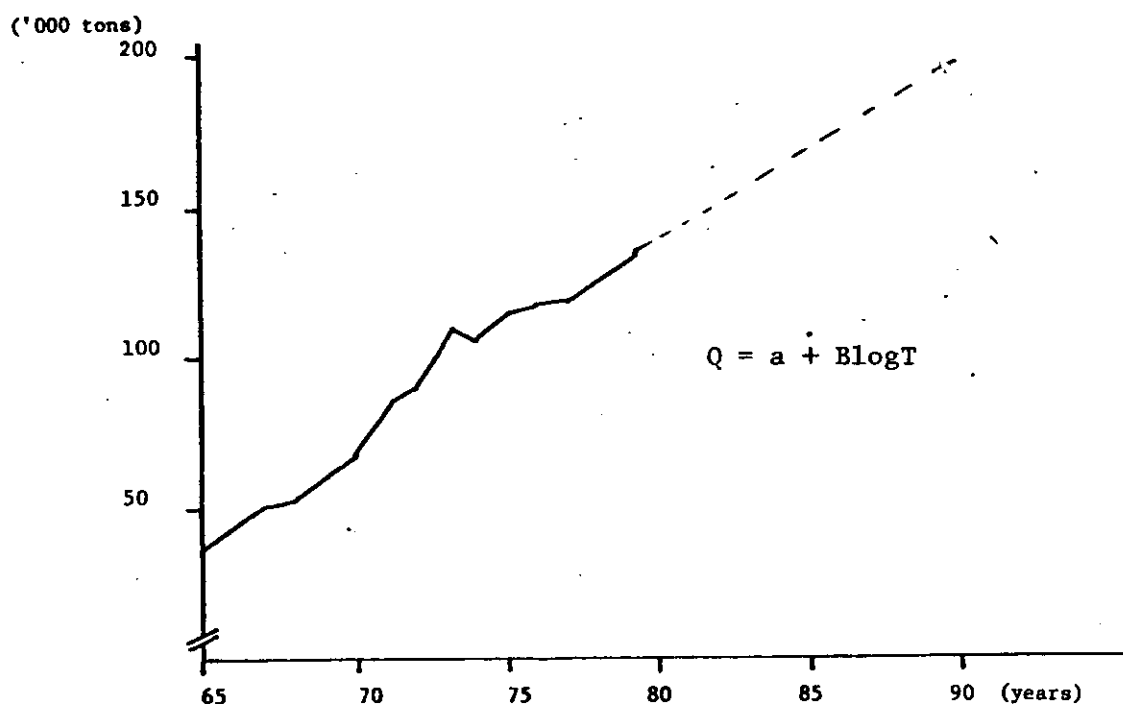
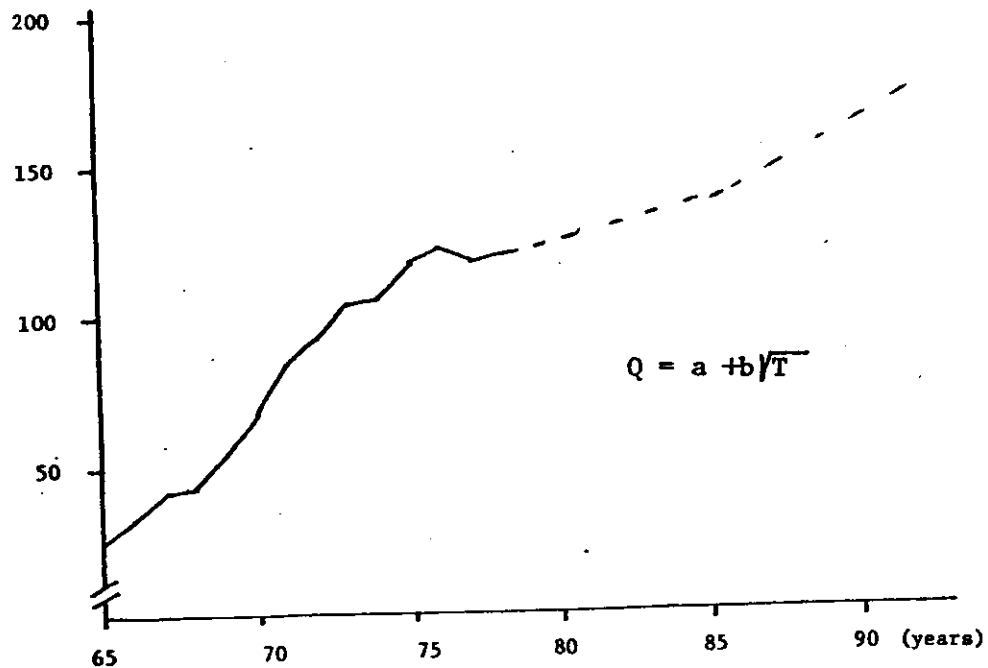


FIGURE 4.4,b.

POULTRY MEAT PRODUCTION IN GREECE, ACTUAL 1965-1978,
AND TREND PROJECTIONS, 1985,1990



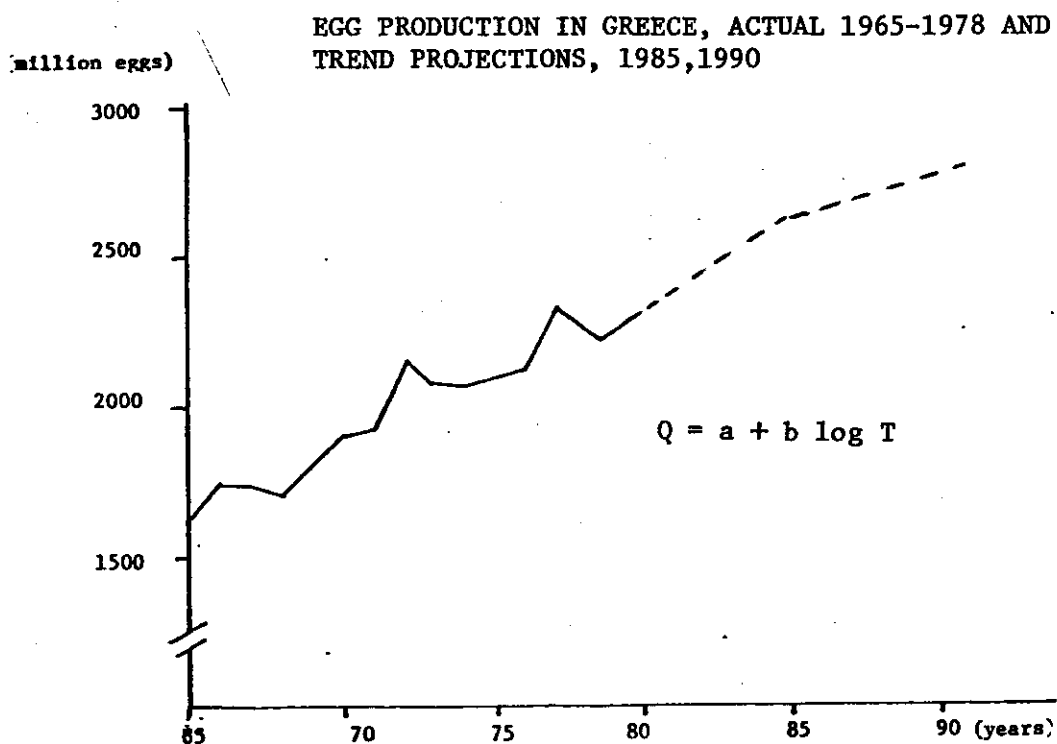
In such a case, Greece's 100 percent self-sufficiency would be reduced to about 80 percent and imports of about 35,000 to 40,000 tons would be required annually.

(b) Eggs. Egg production experienced a rapid expansion during the past two decades mainly due to the reorganization of production on a cooperative basis. Thus, while about two-thirds of the eggs are supplied by small family poultry farms (the balance supplied by large, specialized farms) cooperatives have been established handling the marketing of inputs. As a result higher quality inputs at a relatively lower cost are available to the producer. Simultaneously, the cooperatives undertake the wholesaling of eggs contributing to a more efficient operation of the marketing system. The value of egg production amounts to about 9 percent of the value of livestock products and 2.7 percent of the total value of agricultural products.

Over the period, 1965 to 1977, production rose from 1,633 million to 2,234 million eggs (Table 4.4) a 40 percent increase, while per capita consumption in 1977 was 12.9 kg. compared with 9.6 kg in 1965 (Table 4.4). Trade in eggs is minimal. In 1978 imports amount to only three tons and exports to 97 tons.

Based on past trends, it is estimated that production will increase to 2600 million and 2800 million eggs in 1985 and 1990 (Figure 4.4.c).

FIGURE 4.4.c.



5. Milk

Milk production in Greece contributes about 9 percent to the total value of livestock production. Cow's milk accounts for about 40 percent of total milk production, while sheep's milk accounts for 35 percent and goat's milk for 25 percent.

During the last decade significant improvements in milk marketing resulted from the establishment of cooperatives which buy all milk produced at guaranteed prices. As a result

milk output expanded rapidly from 1.1 million tons in 1965 to 1.7 million tons in 1979. Cow's milk production is increasing faster than sheep and goat milk with an increase of 55 percent over the period 1965-77. Dairy cow numbers have declined gradually but average milk yields per cow have been rising steadily from 1026 kg. per capita in 1965 to 1776 kg. per capita in 1979. Consumption has followed production increases, reaching 1,985 thousand tons in 1977 compared with 1,379 thousand tons in 1965. Per capita consumption rose from 161 kg. to 214 kg. over the same period (Table 4.5)

TABLE 4.5 MILK PRODUCTION (BY KIND AND TOTAL) AND UTILIZATION IN GREECE, 1965-1977

	Cow Milk	Sheep Meat	Goat Meat	Total Production	Stocks	Imports	Total Consumption	Per Capita Consumption
	Thousand Tons							Kilograms
1965	444.5	375.7	289.4	1109.6	63.6	236.3	1377.0	161.1
1966	488.0	398.2	303.7	1189.9	20.9	223.2	1386.3	160.9
1967	529.2	415.5	320.4	1265.1	40.5	207.1	1413.1	162.1
1968	517.2	407.7	327.6	1252.5	89.5	225.8	1542.9	176.5
1969	534.3	431.5	333.0	1298.8	15.4	233.1	1503.4	171.4
1970	557.8	452.8	347.4	1357.9	27.9	260.2	1564.8	178.0
1971	560.1	477.8	362.7	1400.6	59.1	206.5	1569.6	179.0
1972	557.7	500.2	393.2	1430.3	64.1	214.9	1659.2	186.7
1973	648.7	529.6	405.2	1571.5	5.6	321.3	1866.8	209.1
1974	661.7	551.0	414.9	1617.9	26.4	299.2	1894.8	211.4
1975	711.2	563.7	419.7	1689.9	26.4	256.1	1908.7	211.0
1976	717.4	567.8	420.8	1750.0	26.4	272.3	1948.0	212.5
1977	679.0	569.0		1668.7	47.1	304.1	1983.4	214.0
1978*	706.0			1696.0				
1979*	684.0			1694.0				

Source: USDA selected agricultural statistics on Greece 1965-77.

* AGRA EUROPE Special report 5.

Liquid milk sales took between 35 and 40 percent of total milk production in 1979 and 1980 with cow's milk accounting for about 75 percent of the liquid sales. Cheese production mainly from sheep and goat milk, accounts for another 40 percent of milk utilization.

Milk imports consist mostly of condensed milk imported from the EEC which reached a level of 93,000 tons in 1979. Fresh milk imports come from Yugoslavia and are used mainly in cheese production. However, in 1980, imports of fresh milk fell to 10,000 tons, a 70 percent decrease from the previous year's level of 35,000 tons.

Extending past trends, milk consumption in Greece is estimated to reach 2,330 thousand tons in 1985 and 2,515 thousand tons in 1990 (Figure 4.5.a) while production is estimated at 1,970,000 tons and 2,122,000 tons in the respective years (Figure 4.5.b) which means that Greek milk deficits would rise to about 360,000 tons in 1985 and 393,000 tons in 1990.

FIGURE 4.5.a.

MILK CONSUMPTION IN GREECE, ACTUAL 1965-1978 AND
TREND PROJECTIONS, 1985,1990.

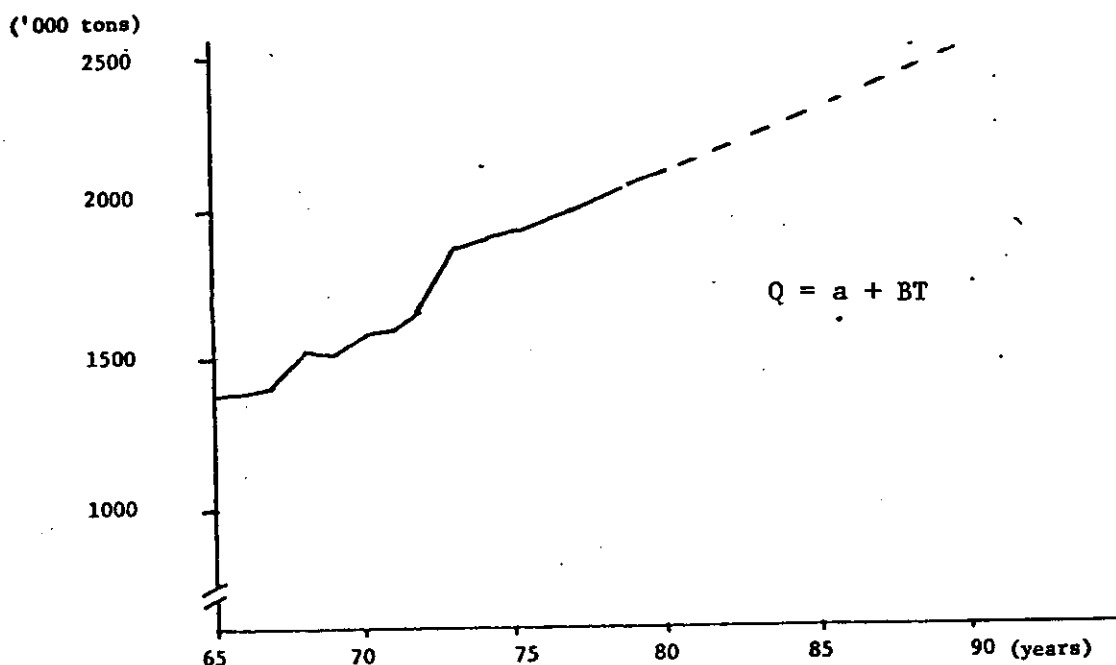
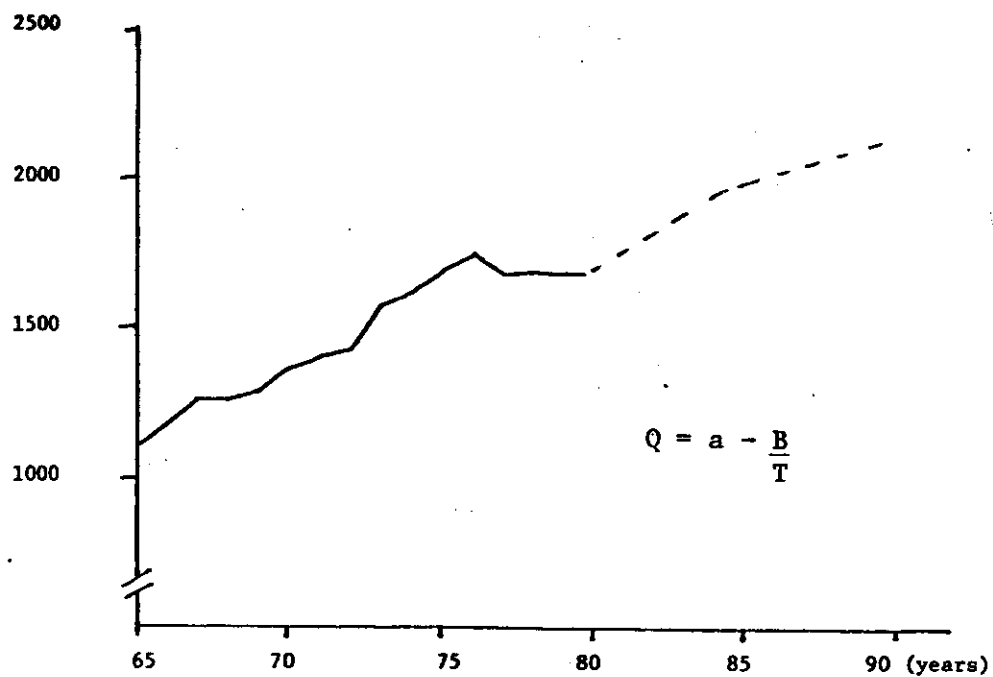


FIGURE 4.5.b.

MILK PRODUCTION IN GREECE, ACTUAL 1965-1978
AND TREND PROJECTIONS, 1985,1990



B. The Feedgrain Industries

The value of production of the main feedgrains in Greece, barley and maize, amounts to less than 3 percent of the gross value of agricultural products and only 5 percent of the value of total crop production. This is an indication of the inability of domestic feedgrain production to satisfy a rapidly increasing demand due to the expansion of the livestock subsector taking into account that wheat has not been used for livestock feed. Consequently, Greece has experienced a sharp rise in feedgrain imports, especially maize, during the last decade.

In order to stimulate production and to reduce the dependence on imports, the various Greek governments have taken a number of measures. While prices for feedstuffs rose relative to those for other crops, the feedgrain producer also receives direct income supports as a fixed percentage of the value of his production as well as input subsidies (e.g. on fertilizer purchases).

However, Greek farmers have continued to devote only their marginal (lower productivity) land to feedgrains since production of wheat or high-priced industrial crops, such as cotton, tobacco and sugarbeets is more attractive.

1. Barley

Barley covers about 25 percent of the area under cereal cultivation and about 10 percent of the total cultivated area.

It is the second most important cereal following wheat in terms of area planted, quantity produced and value of production.

During the last few years increasing demand has led to mechanization of production and the use of better varieties.

Yields increased from an annual average of 1344 kg/ha. during the period 1961-65 to 2250 kg/ha. in 1979. Overall production has kept increasing steadily from 338,000 tons in 1965 to 950,000 tons in 1978, while 1979 production fell to 860,000 tons due to bad weather. A small proportion of the production, about 50,000 tons, is used in malting.

Total barley consumption ranged from 850,000 to 950,000 tons annually for the last 10 years and was almost satisfied by production. Imports are low with the exception of the years 1977 and 1979 when they reached 155,000 and 117,500 tons due to reduced production caused by poor weather (Table 4.6).

TABLE 4.6 BARLEY PRODUCTION, CONSUMPTION AND TRADE IN GREECE, 1965-1977

	Production	Imports	Exports	Consumption			
				Feed	Waste Seed and	Human	Total
	Thousand	Thousand	Metric Tons				
1965	338	19	-	296	36	30	362
1966	563	41	11	498	54	30	582
1967	774	-	75	567	69	30	666
1968	471	4	49	387	57	30	474
1969	448	24	-	389	50	30	469
1970	737	-	15	601	67	40	708
1971	781	9	5	684	72	40	796
1972	874	4	-	759	79	40	878
1973	850	150	-	811	80	40	931
1974	969	29	45	816	80	40	936
1975	916	-	-	830	78	50	958
1976	943	0	0	824	79	50	953
1977	662	155	-	700	67	50	817

Source: USDA, selected agricultural statistics on Greece, 1965-1977.

The official target for 1980 was to increase area under barley as well as production by 5 percent over 1978 figures, which would raise total production to over one million tons. In order to expand production the Greek government provides a number of incentives to the producers. In 1980 the guaranteed price was set at 9.40 drs/kg. a 24 percent increase compared with the 7.61 drs/kg. set in 1979. Simultaneously, barley producers receive a fixed amount for each hectare planted with barley (about 1000 drs/ha) and an additional payment proportional to the value of production (approximately 5 percent) is paid to farmers in the mountainous and semi-mountainous areas.

Until recently barley marketing was handled by the state, however, during the last year the management of feed-grains has been entrusted to a central cooperative organization (KYDEP). The Ministry of Commerce continues to regulate the prices and imports.

As was mentioned earlier, the past trends indicated steadily increased consumption and production. By extending these trends, it is estimated that consumption could increase to 1,150,000 tons and 1,320,000 tons by 1985 and 1990 respectively (Figure 4.6.a) while production could rise to 1,120,000 tons and 1,250,000 tons for the respective years (Figure 4.6.b). According to the projections, consumption will increase faster than production, resulting in increasing imports which could reach approximately 30,000 tons by 1985 and 70,000 tons by 1990.

FIGURE 4.6.a.

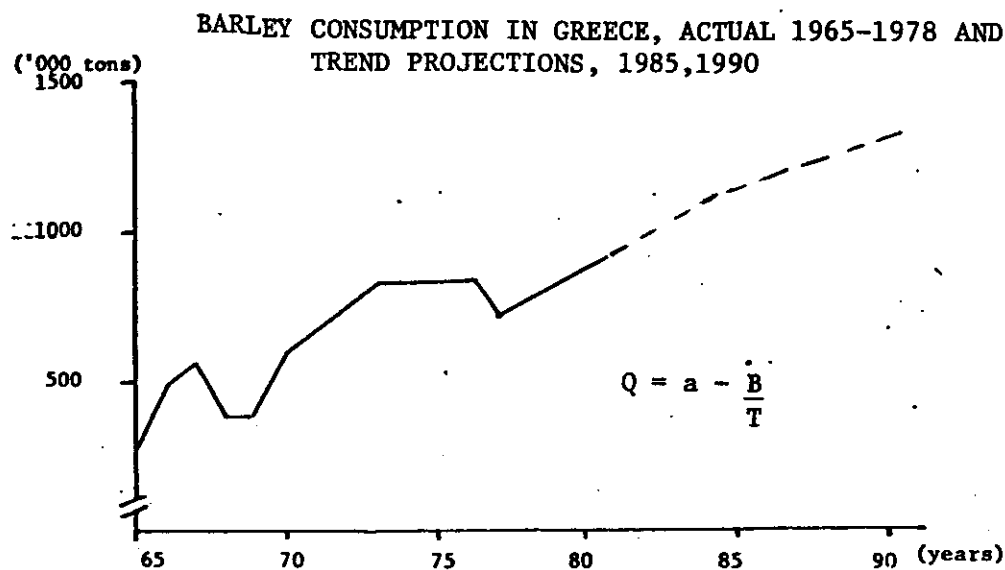
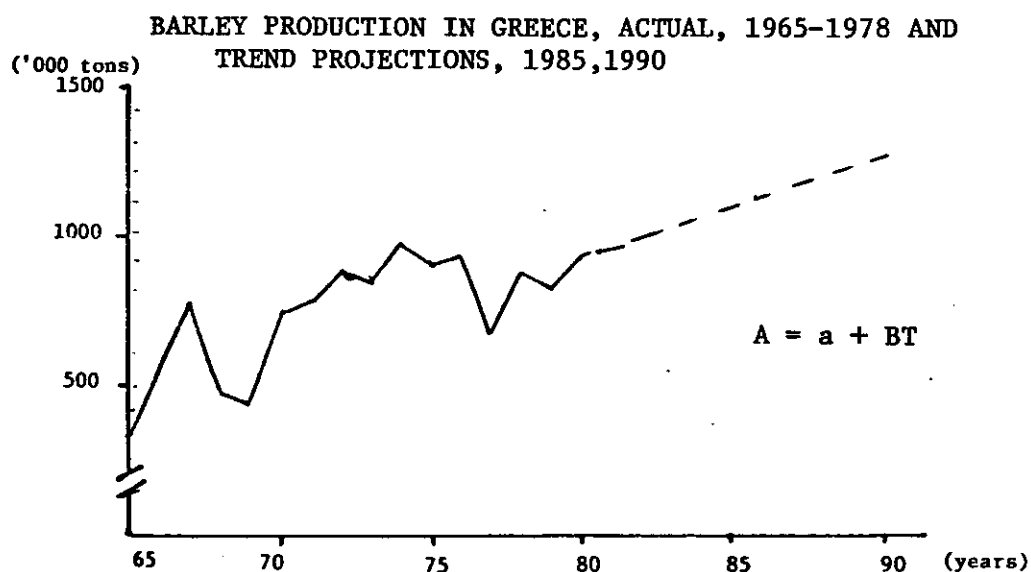


FIGURE 4.6.b.



2. Maize

The second main feedstuff in Greece is maize which is providing a spectacular example of increased production through higher yields. Until 1977 maize production was increasing slowly. Over 85 percent of the maize is irrigated and it does not compete economically with other irrigated crops. However, increased use of new hybrid maize varieties resulted in markedly higher yields. These higher yields, plus the

government's limitation on area planted to industrial tomatoes and sugarbeets is expected to result in a further expansion of maize area.

While average yield for the period 1951-65 was 1449 kg/ha, it reached 4475 kg/ha in 1978 and increased further to 5990 kg/ha in 1979. Even so, production has not kept up with the demand of the growing livestock sector since domestic production satisfies only one-third of the consumption needs. As a result Greece is heavily dependent on maize imports which have become one of the largest items of expenditure for agricultural imports. Maize imports come mainly from the United States which supplied 1084 thousand tons in 1979; 570,400 thousand tons of which were under the CCC program (Table 4.7).

TABLE 4.7 MAIZE PRODUCTION, CONSUMPTION AND IMPORTS IN GREECE, 1965-1977

	Production	Imports	Consumption			
			Feed	Waste Seed	Human	Total
	Thousand		Tons			
1965	249	183	277	15	60	352
1966	275	238	524	15	60	599
1967	313	199	425	16	60	501
1968	344	217	501	18	60	579
1969	413	418	721	20	60	801
1970	511	191	639	24	70	733
1971	571	213	661	26	70	757
1972	584	341	832	26	70	928
1973	605	927	1216	26	70	1312
1974	459	696	1115	20	70	1205
1975	489	718	1200	20	80	1300
1976	504	793	1242	22	80	1344
1977	426	992	1420	21	80	1521
1978 *	513	1036				
1979 *	731	1190				

Source: USDA, selected agricultural statistics on Greece, 1965-1977.

* AGRA EUROPE Special Report 5.

Like barley, maize trade was a state monopoly with the Ministry of Commerce as the sole agency authorized to import grains. This situation, however, has changed recently and imports of maize are handled by KYDEP.

The extension of past trends shows that in 1985 and 1990 domestic demand would reach about 1,900,000 and 2,200,000 tons respectively (Figure 4.7.a) while production would remain under 900,000 tons, more specifically, 770,000 tons in 1985 and 890,000 tons in 1990 (Figure 4.7.b). In such a case, imports would reach approximately 1,130,000 tons and 1,310,000 tons for 1985 and 1990 (Figure 4.7.c).

FIGURE 4.7.a

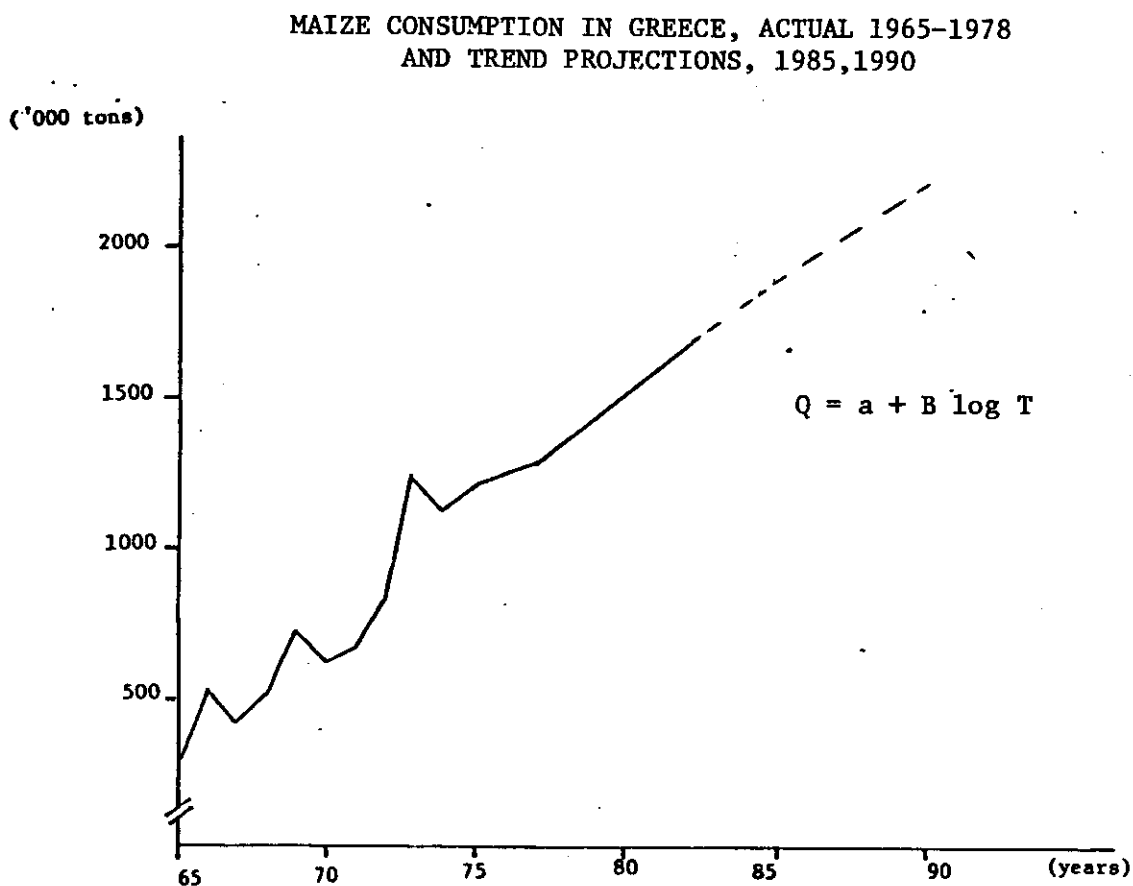


FIGURE 4.7.b.

MAIZE PRODUCTION IN GREECE, ACTUAL, 1965-1978 AND
TREND PROJECTIONS, 1985,1990

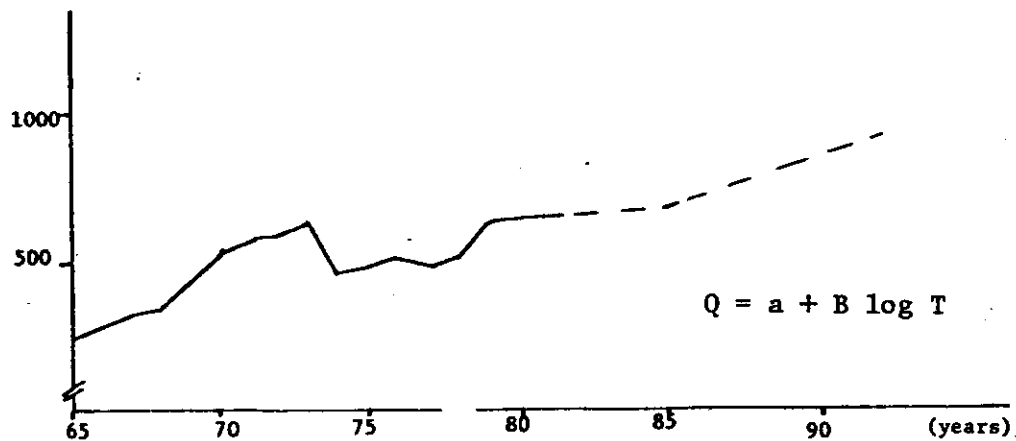
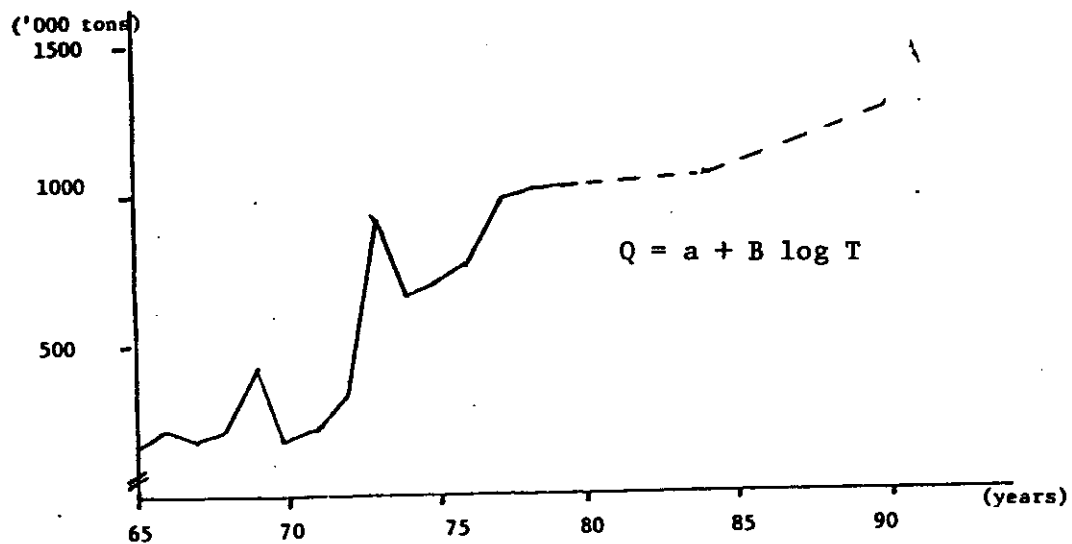


FIGURE 4.7.c.

MAIZE IMPORTS IN GREECE, ACTUAL 1965-1978 AND
TREND PROJECTIONS, 1985,1990



CHAPTER V

EVALUATION OF TRENDS UNDER THE CAP

A. Beef and Veal

The projections for beef and veal are generally in accordance with the views held in Greece. It is not anticipated that the demand for red meat can be satisfied by domestic production because the soil and climatic conditions are unfavorable, although production could expand at a higher rate if the price received by the producers is raised sufficiently to cover production costs. (19) Until January 1, 1981, the Greek government had operated maximum wholesale price controls as part of its anti-inflation policy, thus, limiting returns to the producers.

During 1980, the immediate pre-accession period, the Greek authorities increased the guaranteed price for beef intending to compensate for the elimination of subsidized supplies of feedgrains since they are not allowed under the CAP. The overall beef price increase in 1980 was 24 percent. The Greek price of beef reached 97 percent of the EEC's intervention price. Consequently, Greece adopted the full EEC guide and intervention price levels upon accession on January 1, 1981.

Since a 24 percent price increase has been achieved and imported feedstuffs have also been available at a 10 to 15 percent higher cost, an increase in production should be expected.

Under this assumption the projected production of 149,500 tons in 1985 and 165,000 tons in 1990 could be justified. Although the price rise could stimulate recovery in production, it could also limit any growth in consumption. The 24 percent price increase, combined with

the elimination of feedgrain subsidies has resulted in lower demand and a shift of consumption from beef to pork. Consequently, after the EEC entry, the consumer assumes the entire production cost through the higher retail prices. Furthermore, per capita consumption is not expected to continue rising at the rate of the past 15 years, since it has reached 21.4 kg. per capita, almost equivalent to the EEC's average. Therefore, the projected consumption of 253,000 tons in 1985 and 292,000 tons in 1990 is probably overestimated.

If this is the case, with production expanding at a slightly higher rate than demand, imports should be stabilized under the 100,000 tons per year compared with the projected 103,000 tons in 1985 and 127,000 tons in 1990. As a result the recent degree of self-sufficiency of 60 percent is expected to be further reduced.

B. Sheep and Goat Meat

Population of sheep and goats in Greece has remained relatively stable during recent years. This is due to a number of constraints associated with the existing types of farming. While the profitability of the pastoral type of farming depends on a large flock size and a more intensive production system (based on home-grown feedstuffs and high quality forage) and on the introduction of high productivity breeds, however, both production systems face the constraints of high labor and feed costs.

A price increase of about 25 percent associated with the entry into the EEC is expected to result in increasing production. For this reason the projected production of 143,000 tons in 1985 and 157,000 tons in 1990 is considered to be slightly underestimated. On the other hand, consumption is estimated to reach 141,000 and 144,000 tons in 1985 and 1990 respectively, lagging behind production. This

seems reasonable since per capita consumption at 14 kg is already very high as compared with the EEC's average of 3 kg.

In general, the view that Greece could be an exporter of sheep and goat meat in the coming year seems justified. The expected expansion in the number of large production units based on high productivity sheep breeds utilizing forage and supplemental grains, such as soft wheat, could result in increased surpluses. Consequently, the actual exports could be rather higher than the projected 2,000 tons for 1985 and 13,000 tons in 1990. The same optimism is held by European analysts according to which "...previous forecasts of static production of sheepmeat and goat meat in Greece may have to be modified in view of future higher prices and stability."⁽²⁾

C. Pigmeat

Greece is about 90 percent self-sufficient in pigmeat and the projections suggest that it can probably retain this level. Upon entering the EEC the industry faces two serious problems. First, the new prices, although about 10 percent higher than the previous ones, do not cover the higher feed costs under the CAP. Second, strong competition is expected from the highly efficient Northern European swine industries. As a result the growth in production during the next decade should be much lower than during the last 10-15 years. This suggests that projections of production expanding to 182,000 tons in 1985 and 220,000 tons in 1990 are probably overestimated.

Per capita consumption of 15.5 kg. is very low as compared with the EEC's average of 37.2 kg. Thus, significant increases should be expected. In addition, higher beef prices, shifting consumption from beef to pork as well as rising total demand for meat could result in

increasing demand for pigmeat. Consequently, the projected consumption of 197,000 tons in 1985 and 239,000 tons in 1990 seem under-estimated.

Overall, the self-sufficiency ratio is expected to decline and imports are likely to increase above the present levels of 15,000 to 20,000 tons per year.

D. Poultry

1. Poultry meat.

The validity of the projections for poultry meat which show the self-sufficiency level of 100 percent declining during the next decade to about 80 percent should be questioned.

More specifically, while an extension of past trends in production would indicate 138,000 tons in 1985 and 162,000 in 1990, it has already reached 145,000 tons in 1980. This came as a result of the expansion of cooperative organizations which caused further concentration of production in large units utilizing modern management techniques. This is in accordance with the optimistic view held by Greek authorities which emphasize the exporting potentials of the industry.

Per capita consumption is expected to rise further, although the recent level of about 13 kg per capita is near the EEC's 13.8 kg per capita. Higher beef prices are expected to lead to the substitution of poultry meat for beef. Additional demand should also result from the expanding tourist industry. Overall, demand could reach the projected levels of 174,000 tons in 1985 and 199,000 tons in 1990.

At the same time the industry probably will not face strong competition from the other EEC industries. This suggests that the problems associated with the increasing feed costs will be overcome.

Consequently, Greece could be an exporter of 10,000 to 15,000 tons of poultry meat annually.

2. Eggs

Greece is self-sufficient in egg production. Problems of relatively high costs and inefficient market organization are expected to be solved through mechanization, establishment of cooperatives and favorable margins over feed costs.

The projected increase in production of 2,600,000 eggs in 1985 and 2,800,000 eggs in 1990 is considered to be reasonable and possibly underestimated. Egg production reached 2,400,000 in 1980.

Furthermore, demand is not expected to increase significantly, since during the period 1965-77, per capita consumption increased only about 20 percent, from 9.6 to 11.9 kg. In general, the above justifies the belief that Greece is a potential exporter in the near future, particularly to the Arab countries.

E. Milk

Greece's deficit in dairy products is expected to continue during the next decade. This comes as a result of the structural problems which the cattle component of the industry faces and the strong competition expected from the highly efficient European industries.

Although the new prices under the CAP are higher, they do not seem to be sufficient to cover higher feed costs. As a result, supply expansion is not expected to meet consumption requirements for cow's milk. However, a reorganization of production systems based on high productivity cows utilizing rations composed of high quality forage and limited amounts of grain may improve the competitive position of milk production.

A different situation is expected for the other component of the Greek dairy industry, that is the production of sheep and goat milk, which provides about 60 percent of the total milk output. With prices high enough to cover production costs, and no competition expected, sheep and goat milk production should show an upward trend during the next decade at least satisfying domestic demand.

Greek per capita consumption in 1978 amounted to 70 kg liquid milk and 16 kg of processed milk; average consumption in the EEC was 75 kg and 16 kg, respectively. While consumption of liquid milk in Greece is expected to increase further, it is not believed that it will be followed by increases in consumption of milk products such as butter (although it amounts to 1 kg/head compared with 6 kg/head in the EEC), or cheese from cows milk. This is mainly because Greek consumers' prefer olive oil over butter and white cheese from sheep and goats' milk rather than cows' milk cheese.

Overall total milk production is not expected to match consumption requirements. This is accordance with the trend projections. While supply could reach 1,970,000 tons in 1985 and 2,122,000 tons in 1990, demand could reach 2,300,000 tons and 2,515,000 tons. In such a case, imports, primarily of condensed milk and to a lesser degree pasteurized milk, utilized by the rapidly expanding ice cream demand and the yogurt industries, could reach 360,000 tons in 1985 and 393,000 tons in 1990.

F. Feedgrains

The development of the feedgrain industries will depend primarily on the changes in the livestock subsector and secondly on technological changes.

The expected increase in the livestock numbers should lead to increasing feedgrain demands compared with previous years. At the same time production should be stimulated even more since prices are expected to rise to the EEC's levels. Intervention prices in the Community during 1980 were 10 to 15 percent higher than the Greek prices. However, given the higher profitability of the non-feedgrain crops, the potential expansion is not expected to be enough to cover domestic requirements. Furthermore, the amount of demand increase could be tempered by the availability of imported feedstuffs since the dismantling of the state monopoly in feedgrain imports will open the Greek market to the U. S. and Canada feedgrains.

From this point of view the deficit projected for barley of 30,000 tons in 1985 and 70,000 tons in 1990, seems reasonable and may be underestimated. Production is not expected to increase significantly since Greece's average yield of 2.86 tons/ha is in the upper level achieved by the other Mediterranean countries. Italy's average yield is 2.7 tons/ha, Spain's 2.2 tons/ha and Portugal's 0.5 tons/ha. At the same time acreage expansion will be limited. Barley production could substitute for soft wheat production which is decreasing rapidly due to the low EEC prices. However, as the current trends show, this is not very probable since barley has to compete with the more profitable durum wheat and expansion has already taken place at the expense of soft wheat. Consequently, the projected production of 1,120,000 tons and 1,250,000 of barley for 1985 and 1990 respectively could be viewed as slightly overestimated.

On the other hand, since consumption is expected to increase, the projections of 1,150,000 in 1985 and 1,320,000 in 1990 could be justified. Overall, the deficit mentioned previously, could increase to approximately 120,000 tons per year. A portion is expected to be substituted from other imported feedgrains, the magnitude of the substitution depending on the relative price relationships.

Trend projections for maize showed that the deficit is going to increase significantly to 1,130,000 tons in 1985 and 1,310,000 in 1990. However, this seems unlikely since production projections of 770,000 in 1985 and 890,000 tons in 1990 are probably far too low. Estimates for 1980 production indicate that output had already reached 1,223,000 tons, representing a 67 percent increase over the 731,000 tons of 1979. This is due to a 35 percent increase in area planted and more importantly, due to the use of high-yielding hybrid varieties. It is also believed that the 1980 yield of 7,270 kg/ha can be raised to 12,000 or 16,000 hg/ha. However, such an increase can be achieved only on irrigated land by restricting cultivation of industrial tomatoes and sugarbeets as was the case in 1980. Since 1980 the official target has been a 20 percent annual increase in area under maize production, which recently has been at the level of 170,000 hectares. This expansion is planned to take place on irrigated land and total irrigated land is expected to expand by 40,000 to 50,000 hectares or about 10 percent per year. Consequently, the expansion of maize can be achieved by devoting a part of the newly irrigated land to maize. However, this can be done only at the expense of other irrigated crops such as tomatoes, cotton and sugarbeets. In such a case the optimism expressed

by the Greek government that maize imports could be eliminated by
the mid-1980s⁽²⁾ appears to be within the realm of possibility.

Overall the projected demand of 1,900,000 tons in 1985 and 2,220,000 in 1990 should be expected to be satisfied to a large extent by domestic production. This would result in a higher degree of self-sufficiency which may attain the level of 85 to 95 percent if production reaches the expected level of 1,800,000 tons by the mid-1980s and 2,200,00 by 1990.

As mentioned earlier, the relative price changes and the opening of the Greek market should shift the composition of livestock and poultry rations. Furthermore, utilization of soybeans, soy meal and possibly sorghum is expected to increase. The use of soy meal as a feedstuff in Greece started in 1975 and by 1978 imports reached a level of 90,000 tons, chiefly from the U.S. Potentially soybean and soybean meal use could reach 270,000 tons by 1985 and 400,000 by 1990.

Finally, feedstuffs imports from other EEC members appear unlikely, given the EEC's deficit. However, a potential expansion of barley production in Spain⁽¹¹⁾ associated with its entry into the Community could cover a part of Greece's deficit.

CHAPTER IV

CONCLUSIONS

This paper assessed some of the potential impacts that the entry into the EEC will likely have on the Greek feedgrain-livestock subsector.

Consumption, production and trade of the main feedgrain and livestock products were projected by extending the trends of the past 15 years. These projections were then modified qualitatively by taking into account the effects of the harmonization of the Greek agricultural policy with the EEC. Furthermore, special attention was given to the latest technological and production system developments.

Livestock production is expected to rise despite the elimination of the subsidies on feedstuffs. Production of beef, sheep meat, goat meat and poultry should expand, taking advantage of anticipated favorable margins over feeding costs. However, pork and milk producers will have to compete with the Northern European countries. Some significant shifts on the demand side will likely occur in response to price and income changes, the most important being the shift toward greater utilization of pork and poultry meat.

While Greece will continue to require imports of meat in order to satisfy its needs, it could become a net exporter of certain kinds of meat, such as sheep meat and poultry, as well as eggs.

Demand for feedgrains is expected to rise significantly, but it is not expected to be fully satisfied by domestic supply. Imports

of maize which reached approximately 1,000,000 tons per year could decrease substantially as a result of the expansion of maize production. The problems associated with potential maize expansion should not be under-estimated, since it has to compete for irrigated land with highly profitable crops such as tomatoes, cotton and sugarbeets. At the same time, imports of soybeans and soybean meal should increase at a faster rate than the current level, possibly about 270,000 to 400,000 tons by the end of the decade.

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