



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

THE EFFECTS OF EEC ENTRY ON THE PRODUCTION AND CONSUMPTION
OF SELECTED PORTUGUESE FEEDGRAINS AND LIVESTOCK PRODUCTS

MICH. STATE UNIV
AGR. ECON. DEPT.
REFERENCE ROOM

by

Roberto Curtis

MICHIGAN STATE UNIVERSITY
AG. ECONOMICS DEPT.
RECEIVED

SEP 14 1982

REFERENCE ROOM

Plan B Paper
For Partial Fulfillment
of the Requirements

of

MASTER OF SCIENCE

Department of Agricultural Economics
Michigan State University

1982

TABLE OF CONTENTS

	<u>Page</u>
LIST OF TABLES	iii
LIST OF GRAPHS	v
CHAPTER I -- INTRODUCTION	1
A. Objectives	1
B. Study Organization and Procedures	2
CHAPTER II - BACKGROUND	4
A. Natural Resource Base	6
B. Farm Structure.....	9
C. Structural Characteristics by Commodity	11
D. Portuguese Price Policies and Subsidies	17
CHAPTER III - TRENDS AND PROJECTIONS BY COMMODITY	20
A. Corn	20
B. Barley	25
C. Soybeans	29
D. Beef	31
E. Pork	34
F. Poultry Meat and Eggs	37
G. Milk and Cheese	42
H. Fresh Fish	47

	<u>Page</u>
CHAPTER V - CONCLUSIONS.....	51
A. Continued Trends of U. S. Supplied Commodities Before EEC Entry.....	51
B. Expected Commodity Impacts Under CAP Adoption.....	52
C. General Conclusions.....	55
FOOTNOTES.....	57
BIBLIOGRAPHY.....	62

LIST OF TABLES

<u>Table</u>		<u>Page</u>
1	Agricultural Labor Force in Portugal, 1965/77.....	5
2	Size of Farms in Portugal by District, 1968.....	10
3	Average Yields for Cereals in Portugal and Selected Areas 1976/78	13
4	Carcass Weight of Cattle.....	15
5	Summary of Price and Subsidy Policies and Their Effects, 1965-1976.....	19
6	Portuguese Mixed Feed Production by Type of Livestock 1970 to 1980.....	21
7	Corn Production and Consumption: Actual 1965-1980, Projections 1985-1990.....	23
8	Per Capita Human Consumption in Portugal and the EEC.	24
9	Barley Production and Consumption: Actual 1965- 1980 and Trend Projections 1985-1990.....	28
10	Soybean, Meal and Oil Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990..	30
11	Beef Production and Consumption: Actual 1965- 1980 and Trend Projections 1985 and 1990	33
12	Pork Production and Consumption: Actual 1965- 1980 and Trend Projections 1985 and 1990.....	36
13	Poultry Meat Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990.....	39
14	Egg Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990.....	41
15	Milk Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990.....	44
16	Cheese Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990.....	46

<u>Table</u>		<u>Page</u>
17	Fish Production and Consumption: Actual 1965-80 and Trend Projections 1985 and 1990.....	50
18	Procalfer - Comparison of Portuguese and EC Intervention Prices.....	54

LIST OF GRAPHS

		<u>Page</u>
Map	Climatic Zones of Portugal	7
<u>Graph</u>		
1	Corn Production and Consumption: Actual 1965-1980 and Trend Projections to 1990	22
2	Barley Production and Consumption: Actual 1965-1980 and Trend Projections to 1990.....	27
3	Beef Production and Consumption: Actual 1965-1980 and Trend Projections to 1990....	32
4	Pork Production and Consumption: Actual 1965-1980 and Trend Projections to 1990....	35
5	Poultry Meat Production and Consumption: Actual 1965-1980 and Trend Projections to 1990	38
6	Egg Production and Consumption: Actual 1965-1980 and Trend Projections to 1990....	40
7	Milk Production and Consumption: Actual 1965-1980 and Trend Projections to 1990....	43
8	Cheese - Cow, Sheep and Goat Combined, Production and Consumption: Actual 1965- 1980 and Trend Projections to 1990.....	45
9	Fresh Fish Production and Consumption: Actual 1965-1980 and Trend Projections to 1990	49

CHAPTER I

INTRODUCTION

Portugal has one of the most backward agricultural sectors in Europe; it is less developed and less dynamic than the other countries negotiating entry into the European Economic Community, Spain and Greece.¹

Portugal's entry into the EEC is expected on January 1, 1984.² EEC entry and the required adoption of the Common Agricultural Policy will require Portugal to eliminate its present agricultural policies and substitute them with the established CAP, and the resultant³ often higher EEC consumer prices.

A. Study Objectives

The general objective of this study is to assess the probable impact of Portuguese entry into the EEC on the importation of U. S. feed-grains and livestock products.

The specific objectives of the study are:

1. To describe the current structure of the feedgrain-livestock subsector in Portugal with emphasis on production and consumption for the following commodities: barley, corn, soybeans, beef, pork, poultry meat, eggs, milk, cheese and fresh fish.
2. To project commodity production, consumption and per capita consumption for 1990 using time-trend analysis.
3. To identify probable adjustments EEC membership will impose on the Portuguese feedgrain-livestock subsector.

B. Study Organization and Procedures

A literature review of the effects of EEC enlargement on Portugal was carried out, using material from the U. S. Department of Agriculture, Michigan State University and other information sources. All information was gathered from secondary sources.

The simplest approach commonly used in forecasting production and consumption is to assume that the recent past trend will continue into the immediate future.⁴ This procedure often results⁵ in surprisingly accurate forecasts in the short run⁶ because strong trend elements are common in agriculture. However, the accuracy and reliability of these estimates decline as the⁷ year of the forecasts move farther into the future. Extra-
polation of past trends may be unacceptable as representations of the real world because there is no assurance that past rates⁸ of change and trends will continue.

Trends are associated with changes in tastes and preferences of consumers, increases in population, income and technological changes⁶ in production. The trend analysis for Production, consumption and per capita consumption was conducted using ordinary least squares on the MSU CBC 6500 computer, using the Time Series Processor (TSP) language. Time was the only independent variable used. The dependent variable was that year's production or consumption. The formula used was $Y = a + bT$. T is the time (year), a is the intercept, b is the time coefficient, and Y is production or consumption.

EEC entry will not have a uniform effect on Portuguese commodity prices; some prices will increase and others will decrease or remain

the same and correspondingly affect quantity supplied or demanded. EEC commodities will also be competing with Portuguese produced commodities in the domestic market; consumers may prefer non-Portuguese commodities because of differences in quality, taste or preference. These changes, due to the adoption of the CAP, cannot be accounted for in this trend analysis.

CHAPTER II

BACKGROUND

Portugal has historically depended upon its colonies for a significant portion of its total supply of agriculture commodities and except for price controls and subsidies the domestic agriculture sector has been neglected. Gross Domestic Product (GDP) nearly tripled from 1953 to 1979, while total agricultural GDP remained at nearly the same level.¹ Agriculture as a percentage of GDP has decreased from 32.4 percent in 1953 to 9.2 percent in 1979.²

The share of total employment in agriculture has declined from 35.17 percent in 1965 to 29.4 percent in 1977,³ (See Table 1). This shifting of labor away from agriculture is often a result of freeing marginal labor as agriculture becomes more efficient and capital intensive.

Government pricing policies and subsidies are geared towards low consumer prices which result in low farm gate prices that often do not cover costs of production.⁴ Current government price policies are disincentives to invest in agriculture.⁵ In Portugal's situation farm labor is freed not because of greater efficiency but because of reduction in production. (See production tables in Chapter III). The results of the Portuguese agriculture price policies is a general lack of capital investment, modernization and development in agriculture, and non-intensive, inefficient use of land and labor.⁶

Portugal's dependence upon its colonies for agriculture commodity supply has been transferred to dependency upon the international community for the supply of required agriculture imports. A balance of payment

Table 1

Agricultural Labor Force in Portugal, 1965-77

Year	Agriculture ¹ -----1,000-----	Total	Agricultural labor as a percent of total labor
1965	1227	3488	35.17
1966	1182	3493	33.83
1967	1138	3518	32.35
1968	1093	3535	31.00
1969	1049	3500	29.97
1970	1003	3611	27.78
1971	979	3591	27.26
1972	938	3570	26.28
1973	893	3546	25.18
1974 ²	1312	4048	32.41
1975	1265	4066	31.11
1976	1286	4161	30.91
1977	1228	4177	29.40

¹ Includes fishing, hunting and forestry.

² Method of data collection and computation modified in 1974, resulting in a series which differs considerably from pre-1974 data.

Source: USDA-ESS Statistical Bulletin #664

problem was established and has since continued to grow as farmers⁷ cut back on their production.

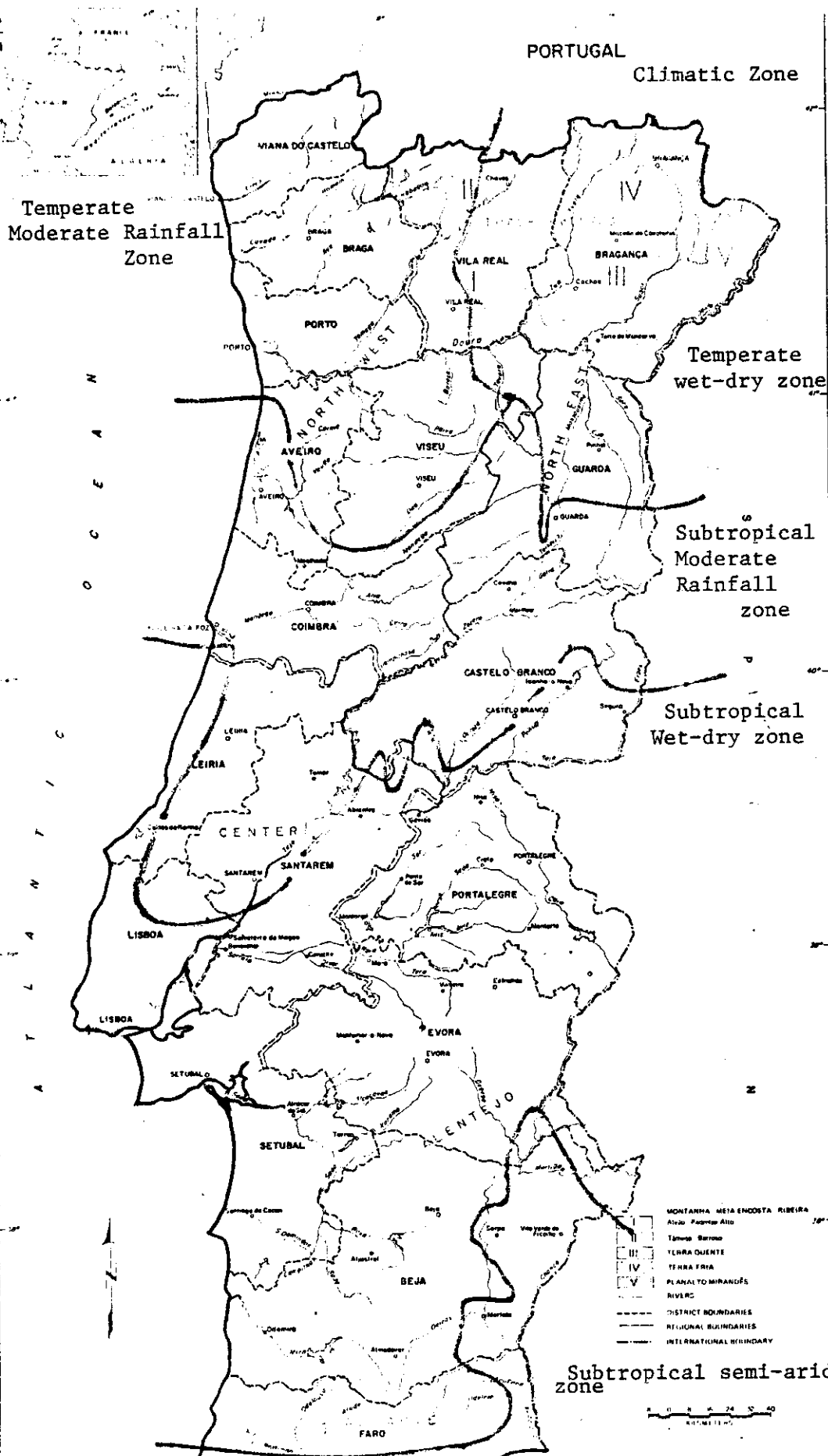
U. S. agriculture commodities accounted for 36 percent of the⁸ volume of Portuguese agriculture imports in 1977, and has since⁹ increased to 70 percent in 1979 and 1980. Most of the U. S. supplied imports are bulk commodities in the form of grain or soymeal. Many U. S. commodities were supplied through P.L. 480 and will be through¹⁰ the CCC. Other major suppliers of Portuguese imports are the European¹¹ Economic Community (EEC), Brazil and Spain.

A. Natural Resource Base

Portugal has a total land area of 8.9 million hectares; 7.2 million ha. are used for agriculture and forestry; 3.6 million ha. are used for¹² cultivated crops but only 2.6 million ha. are suitable for crop production. Cultivated forage and pasture comprise 4.5 million ha.

The wide variability of soil types and rainfall in Portuguese climatic zones determine the livestock and crop production practices.¹³ Portugal has five climatic zones (as described in the AID report, Agricultural Sector Assessment--Portugal) ranging from a temperate, moderate rainfall to a sub-tropical, semi-arid zone.

The temperate, moderate rainfall zone has an average temperature of greater than 10°C for six to nine months of the year. There is sufficient moisture for crop production for eight months of the year with an average rainfall of 1000 mm at lower elevations and 2000 mm in the mountains. Most of the soil is arid with a ph. of 4.0 to 5.5. Much of the land is on moderate to steep slopes which are best suited for forests and/or pastures. Valleys have soils which are suited to cereal production with corn the major crop. Corn is often double-



Sources: Climatic zones described by Multi-national Systems, Inc. Map - from The World Bank

cropped with beans or potatoes. This zone is typified by small family owned farms. Most crops are consumed on the farm, some livestock, mostly dairy cows, are also raised. Corn, wheat and rye yields for this zone are above average for the country. Permanent pasture and forage production is well suited to this zone.

The temperate, wet-dry zone has an average monthly temperature greater than 10°C for six months of the year with sufficient moisture for crop production six to seven months of the year. Annual rainfall is 600 to 800 mm. Soils are generally shallow and steep although many areas of deeper soil exist, soil ph is 4.0 to 5.5. Most farms are small, family operated, with rye, wheat and potatoes as the major field crop. Grapes, olives, chestnuts and almonds are also grown.

The possibility of increasing production in this zone is less than the previous one because of a short growing season and shallow, infertile soils.

The sub-tropical moderate rainfall zone, or Littoral, has an average monthly temperature of 10°C for approximately 10 months or more. For six to eight months of the year there is sufficient moisture for crop production with an annual rainfall of 800 to 1200 mm. The best soils of the country are located in this zone. The dominant crops grown are corn, wheat and potatoes. Rice is grown on irrigated land.

The subtropical, wet-dry zone has an average temperature of 10°C or more for 10 months of the year. There is sufficient moisture for crop production five months of the year or more with an average rainfall of 600 to 800 mm. Wheat and oats, the dominant crops, are grown on moderately sloped land, the rest of the soils are quite shallow. It is

estimated that there are over 2 million ha. of pasture land that could be improved for use as forage and permanent pasture in this zone.

The subtropical, arid-dry zone has a temperature of 10°C or more throughout the year. Annual rainfall is less than 500 mm and there is only sufficient moisture for crop production three to four months of the year. Pasture and forage are the predominant form of agriculture land use.

B. Farm Structure

In Portugal 43.5 percent of total land area is accounted for by less than one-half of one percent of the total number of farms.¹⁴ The average size farm in Portugal is 6.1 ha. Over 77 percent of the total farms are under 4 ha. in size (see Table 2).

The structure of land holdings is marked by a sharp distinction between North and South. In the North over 80 percent of the farms are 4 ha. or less in size. These small farms account for 46.1 percent of the land area. Less than 0.2 percent of the farms have over 100 ha. but account for 8.1 percent of the land area. Southern farms of 4 ha. or less accounted for 59 percent of the total number of farms but only 3.6 percent of the land area.¹⁵

The latifundia structure is dominate in the south. Latifundias are characterized by large land holdings with a semi-fuedal tenure sytem, absentee land owners, tenant farmers, share croppers and landless laborers. In 1975 a large-scale occupation of southern estates by former tenants and laborers occurred. Over one million ha. were taken over.¹⁶ The occupied estates were left in large holdings (not divided into smaller parcels) in the form of collective farms and large cooperatives.¹⁷ Many of the occupied estates, except for the

Table 2

Size of Farms in Portugal by District, 1968

	Total number of farms	Less than 4 hectares	4 to 20 hectares	20 to 100 hectares	over 100 hectares	Average farm size	Land area
Northern Districts -----1,000 Farms-----							Hectares (1000 ha.)
Aveiro	69.0	62.5	6.0	0.4	0.04	1.9	132.4
Braga	61.1	51.0	9.6	0.5	0.02	2.2	135.7
Braganca	31.5	12.4	15.9	3.0	0.2	10.0	314.7
Castelo Branco	44.3	30.4	11.4	2.0	0.5	9.2	409.1
Coimbra	70.4	62.6	7.4	0.4	0.04	2.1	146.9
Guarda	43.7	26.6	14.9	2.1	0.1	5.9	259.6
Leiria	60.5	53.1	6.9	0.5	0.04	2.5	150.7
Lesboa	41.6	34.0	6.9	0.6	0.1	3.6	120.7
Porto	62.2	54.2	7.4	0.6	0.02	1.9	352.9
Santarem	55.5	42.5	11.3	1.5	0.3	6.3	67.0
Viana do Castelo	43.9	40.7	3.0	0.1	0.01	1.5	165.0
Vila Real	43.6	31.4	11.1	1.0	0.05	3.8	203.2
Viseu	81.4	68.1	12.4	0.9	0.07	2.6	
Northern totals	708.8	569.5	124.2	13.6	1.49	4.1	
Southern Districts							
Beja	20.8	8.8	7.7	3.0	1.2	35.8	754.0
Evora	11.4	6.5	3.3	0.9	0.7	49.6	572.0
Faro	34.3	20.8	11.0	2.3	0.3	7.8	267.1
Portalegre	16.2	10.3	3.9	1.3	0.7	28.4	470.7
Setubal	17.3	12.8	3.1	1.0	0.4	16.7	293.9
Southern Totals	100.0	59.2	29.0	8.5	3.3	27.66	
Totals	808.8	628.7	153.2	22.1	4.8	6.1	4874.2

Source: USDA-ESS Statistical Bulletin #664.

most efficient cooperatives and collective farms, have been returned
18
to their former owners.

The small owner-cultivated plots in the north were not affected
by the land reform. The fragmented nature of production in this
19
region is accounted for by part-time and older farmers.

Provided they are allowed entry into the EEC, Portugal will be the
only country, except for the United Kingdom with over 50 percent of
its land area controlled by farms of 50 ha. or more. It should be
noted that 30.5 of U.K. farms are over 50 ha. in size, whereas, only
20
1.9 percent of the farms in Portugal are of this size. Farms
less than 20 ha. in size account for 95.6 percent of the total number
of farms and 37 percent of the total land area. In the EEC farms less
than 20 ha. comprise 78 percent of the total farms and less than
21
30 percent of the land area.

In 1973, thirty-four percent of Portugal's farmers were at
least 55 years old; only twenty-four percent of French and Italian
22
farmers fit into this age bracket. It is generally assumed that these
older farmers are retired or semi-retired and work small parcels of
23
land for their own consumption purposes.

C. Structural Characteristics by Commodity

Agriculture commodity imports and exports are controlled by
state marketing boards and corporations. The Cereal Institute (ICEP)
is concerned with technical matters such as cereal quality control,
processing and cereal by-products. The Cereal Supply Corporation
(EPAC) controls all cereal imports and all domestic wheat purchases,
24
and other cereal support measures.

The National Livestock Product Committee (JNPP) is responsible for the direct regulation of the livestock sector. The JNPP administers milk subsidies, directly intervenes in milk production and consumption, supervises and regulates all slaughter houses, estimates intervention price levels, buys and sells regulatory livestock product stocks and controls livestock product imports.²⁵ The JNPP can restrict or encourage meat, milk and dairy product consumption by price policy²⁶ and import quotas.

Most farmers, especially those in areas with restricted pasture²⁷ area rely upon corn as the principal feed for their animals. Corn has a higher feed value than its closest substitutes; corn provides nutritional value equal to 1.163, 1.321 and 1.070 those of^{27a} sorghum, oats and barley. Wheat is not used for animal feed in²⁸ Portugal; its only use is for human consumption.

Corn is also the major input in the mixed feed industry. The²⁹ mixed feed industry used corn for 82 percent of all feedgrain inputs.

The main producers of corn are small northern land owners who account for 80 percent of total corn production. Producers in the northwest districts of Viana do Castelo, Braga and Porto produce³⁰ approximately 50 percent of the domestic corn. These northern³¹ areas are characterized by poor, acidic soils.

Corn is produced as a basic subsistence item of which the surplus is marketed. Nearly 60 percent of total corn production is consumed on farms where they are produced; 36 percent is sold in the market and³² only 4 percent is sold to EPAC.

Approximately 95 percent of domestic corn is consumed as grain³³ and 5 percent as forage or silage. Corn yields are less than one-fourth EEC average corn yields and one-half world average corn yields (see Table 3).

Barley is used primarily for beer production (92 percent) and animal feed (8 percent). EPAC buys only 6 percent of domestic production and imports are almost exclusively used by the beer³⁴ industry. Portugal has extremely low barley yields, 649 kg/ha, compared to the EEC average yield of 3827 kg/ha. and the world average of 1978 (see Table 3). It is possible to increase barley production by³⁵ using fertilizer and lime on the soils as well as suitable seed. Wheat and corn are the crops planted to the largest areas, much of this soil is unsuitable for these crops. Reducing the marginal producing areas planted to corn and wheat and substituting them with barley production could possibly double the land area planted to³⁶ barley.

Table 3
Average Yields for Cereals in Portugal and Selected
Areas 1976/77 Average kg/ha.

	<u>Barley</u>	<u>Corn</u>
Portugal	649	1246
Spain	2019	4074
Greece	2299	3950
Italy	2577	6330
France	3547	4850
EEC	3827	5393
World	1978	2961

Source: AGRA EUROPE, p. 44.

Soybeans are not grown in Portugal. The government plans to introduce soybean cultivation since it is felt that climatic conditions³⁷ favor high yields.

Soybean imports were originally in the form of soymeal and oil. The construction of oilseed crushing plants allows for an increase in soybean imports. Soy oil imports have been reduced to near zero since soybean crushing has increased in Portugal (soy oil is a by-product). Improved soy oil refining procedures and facilities produces a soy oil of equal or better quality than imported oil.

The structure of swine production ranges from small-scale agriculture to large, modern farms to large swine herds under an extensive³⁸ pasturing system south of the Tagus River. Over 75 percent of Portuguese hog farmers in 1972 had only one or two animals. These farms accounted for 31 percent of the country's total swine herd. Some officials speculate that these animals which are largely destined for home consumption do not enter into official estimates for herd⁴⁰ size and consumption. Four percent of the producers owned more than 50 animals each and accounted for over 22 percent of the total herd. Confined pig production has grown in use. In 1980 there were³⁹ over 300 confined pig farms with a total of nearly 40,000 sows. These production units are mostly concentrated around Lisbon.

A major problem faced by pig producers has been the African Swine Fever which was thought to be under control in the early 1970s but losses during the 1975-79 period accounted for an 8 percent loss of the swine⁴¹ herd. The control of this disease will permit increased pork production.

Beef production consists of small farmers in the north with one or two animals, mostly dairy cows, to large pastured herds in the southern Latifundias.⁴²

The carcass weight of young cattle, less than 18 months, has increased 41 kg. per carcass from 1968 to 1978. The rise in beef yields is primarily due to an increase in the use of concentrated feeds.⁴³

Table 4
Carcass Weight of Cattle

Year	Proportion of Total Carcass weight of less than 18-month old cattle to adult weight	Average Carcass Weight	
		Young cattle (less than 18/mo)	Adults
1968	16.6%	107 kg.	228 kg.
1978	24.1%	148 kg.	248 kg.

Source: AE, p.63.

Over one-half of the beef slaughtered is in Lisbon and Porto which is then distributed in these population centers.⁴⁴

The poultry industry is one of Portugal's most efficient and competitive industries. Portugal is nearly self-sufficient in egg and poultry meat production.

Nearly 80 percent of the total egg output is produced in industrial aviaries, mostly concentrated in Leiria, Viseu, Coimbra, Aveiro, Santarem and Lisboa. Small-scale production units predominate. Of the nearly 2000 egg aviaries, 75 percent have 2000 layers or less.⁴⁵ In 1977, nine aviaries had more than 2000 birds and this increased to 30 aviaries in 1977.⁴⁶

Broiler or poultry meat production is concentrated in the central part of the country near Lisbon and Porto. The average size of the poultry meat production units is much larger than the egg production units.⁴⁷ Over 80 percent of the poultry meat is produced in commercial enterprises.⁴⁸

Milk production is mainly concentrated on small farms located in the northern and central regions of Portugal where the average size of the dairy herd is very small. The last agricultural census (1977) revealed that herds of less than five cows accounted for more than 98 percent⁴⁹ of the total number of dairy cows in the country.

Milk production and collection are partially controlled by the JNPP which actively reaches 59,000 dairy farmers in the country, 86 percent of which were located north of the Tagus River in 1979. Milk production in the JNPP-organized collection areas accounted for 67⁵⁰ percent of the total milk production in the country in 1978.

The Portuguese government has established cooperative milking stations within walking distance of dairy cow population centers. Most are located in the north of Portugal where there is a large concentration of small land holders and dairy cows. The milking centers have modern milking machines, cooling facilities and transportation systems. A farmer can have his cows milked by machine for a small percentage of a cow's dairy milk production. The farmer has the option of selling all his milk or only a part of it. The cooperative milking stations have allowed farmers to increase the number of cows they own⁵¹ due to the convenience of the milking stations.

D. Portuguese Price Policies and Subsidies

Agriculture commodities, especially livestock products and feedgrains, have been controlled by government market intervention to maintain stable retail prices and low consumer prices. 52

Portugal's cheap food policy allows consumers to purchase most products at prices below world market levels due to substantial producer and consumer subsidies. 53

The government sets maximum fixed prices on basic consumer goods such as eggs, milk, chicken, beef and pork. Fixed marketing margins are set for specific manufacturing and distribution functions of food and nonfood items. 54

The government also uses guaranteed and intervention prices to support certain agriculture commodities. Intervention prices are designed to provide farmers with an incentive or minimum price for products such as barley and corn. Farmers can sell their products at higher than guaranteed prices if they exist in the market. Government purchases are used to maintain guaranteed prices. Intervention prices are also used in the livestock sector to control seasonal fluctuations. 55

Prices not subject to the controlled price regimes are considered to be free or uncontrolled. Because the controlled prices for different levels of the production and marketing system frequently do not cover costs, direct subsidies are required. These subsidies, which come from the general budget, go primarily to public trading enterprises (i.e., EPAC and IAPO) and to private trading firms. The agribusiness sector is an important recipient of these subsidies. Subsidy funds are

are released from the "Ministry of Finance and Planning" through the
56
Supply Fund (Fundo de Abastecimento). Consumer subsidies also exist
for many commodities.

The Portuguese government uses four separate subsidies and three
57
different prices in an attempt to regulate the corn economy. The
subsidies apply to domestic and imported yellow and white corn. Guar-
anteed prices paid to farmers, international (CIF) prices and the
prices paid for corn by the milling and mixed feed industries are the
three different prices used by the government.

There is one guaranteed price paid to feed barley producers and three
58
guaranteed prices to producers whose barley is used for beer. Beer
barley is controlled by the beer industry through prices and production
58b
permits. The beer industry receives no fixed price for its grain input,
which means when guaranteed domestic prices surpass international CIF
prices, beer producers will prefer to use imported grains. The grain
barley subsidy is equal to the difference between the high guaranteed
59
price received by the farmers and the price paid by the feed industry.

Pork is bought and sold on a relatively open market, although a
minimum purchase price and a maximum intervention price are published
60
by the government.

Most beef subsidies were discontinued in 1977. 61 Since then
government intervention through the JNPP has consisted of the maintenance
62
of regulatory stocks to raise or lower market prices.

Government intervention in the egg and poultry meat markets is
minimal and occurs only when producer prices drop beneath estimated
production costs. The government has also established retailer and
63
wholesaler marketing margins.

Milk production is heavily subsidized, which reflects an attempt
64
to raise the low levels of milk consumption. Milk subsidies are provided for milk producers, processors, distributors and consumers. Consumers prices, in general, do not cover the guaranteed price paid to farmers plus the processing and marketing costs.

Table 5

Summary of Price and Subsidy Policies and their Effects, 1963-1976

	Meat		Milk		Corn		Wheat	
	Intended Effect	Real Effect	Intended Effect	Real Effect	Intended Effect	Real Effect	Intended Effect	Real Effect
1. Guarantee an adequate price to a specific class of producers	No		Yes	No	Yes	No, since free market prices have been higher than guaranteed prices	Partially	Yes
2. Stimulate the efficient production of larger quantity	Yes	Yes, through carcass weights but without increased herd size	Yes	Some	Yes	Slightly, through increase in yields	No	No
3. Improve product quality	Yes	No, substitution of second class for first class meat	Yes	Somewhat, organized milk collection has increased	N.A.	N.A.	N.S.	N.A.
4. Reduce costs in production, transportation, processing and marketing	Yes	Some, middlemen have benefitted the most	Yes	Unknown	Yes	Yes, has reduced input costs to feed industry, meat and milk producers	N.S.	Increased margins of bakers and millers
5. Maintain real income of consumers	Yes	No	Yes	Not much	N.A.	N.A.	Yes	Yes, until 1975
6. Reduce imports	Yes	No	N.S.	No	Yes	No	N.S.	No
7. Eliminate price differentials between imported and domestically produced commodities	N.A.	N.A.			Yes	No	N.S.	Yes, but due to increasing world prices
8. Remove structural obstacles	N.S.	No	Yes	No	Yes	No	Yes	No

N.S. = not stated.
N.A. = not applicable.

Source: World Bank, Portugal-Agricultural Sector Survey, p. 314.

CHAPTER III
TRENDS AND PROJECTIONS BY COMMODITY

A. Corn

Corn has become the most important cereal consumed in Portugal by volume and value. However, the area planted has decreased 100,000 hectares since 1965. Yields per hectare increased to 1330 kg/ha in the early 1970s but have since decreased to an average of 1225 kg/ha.

While total corn production has decreased 100,000 metric tons (MT) since 1965, corn consumption has increased 500 percent. Corn imports have increased from 139,000 MT in 1965 to 2,800,000 MT in 1980. The U. S. share of the import market has steadily increased from an average of 30 percent of total imports in the late 1960s to over 90 percent since 1975. PL 480 and the CCC were instrumental in this increase ¹ of U. S. supplied corn.

The major source of corn demand is from farmers or livestock feeders who find it more economical to quickly fatten livestock on imported corn and feed concentrates than to produce the corn for animal consumption or graze cattle on pasture. This occurs because of government price policies and subsidies that set lower prices on imported corn than the domestic corn price level. ² Government subsidies were also awarded for each head of cattle slaughtered as an incentive to rapid growth weights. Seventy percent of the corn consumed ³ is used by the mixed feed industry.

Human corn consumption has decreased 10 kg/per capita from 1963/65 to 1980. Reduced per capita consumption of corn is possibly an indicator of a shifting demand in personal consumption from grains to livestock products due to larger disposable incomes. Corn per capita consumption in 1980 is still five times larger than EEC average consumption for the period 1975/77 (see Table 8).

Table 6

Portuguese Mixed Feed Production by Type of Livestock
1970 to 1980

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Livestock				(1000 metric tons)							
Poultry	340	396	472	492	595	593	736	909	888	957	1098
Cattle	282	319	364	430	480	436	577	612	606	749	853
Swine	309	445	519	575	677	767	856	1202	1012	1002	1357
Total	931	1160	1355	1497	1752	1796	2169	2723	2506	2708	3308

Source: USDA Selected Agricultural Statistics on Portugal, 1965 to 1977.
USDA Attache Report, 3-19-81.

If historical trends continue, total corn utilization is projected to continue to increase to 3,312,900 MT in 1985 and 4,054,000 MT in 1990. Corn production would diminish to 394,300 MT and 352,800 MT in 1985 and 1990 respectively.

Corn imports would expand from the 1980 level of 2,800,000 MT to 2,918,000 MT in 1985 and 3,701,200 MT in 1990.

Graph I

CORN PRODUCTION AND CONSUMPTION, ACTUAL 1965-1980,
AND TREND PROJECTIONS TO 1990

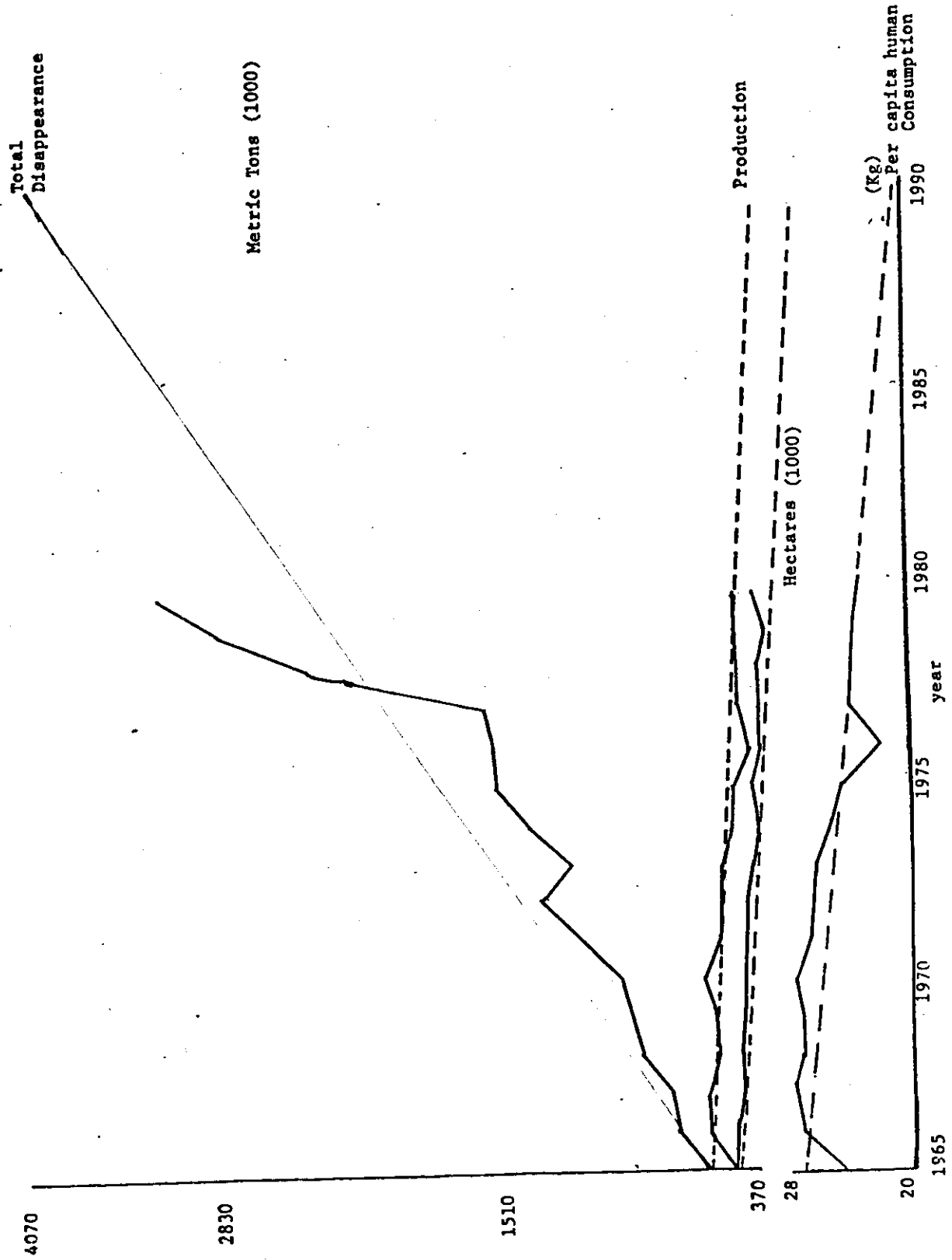


Table 7

1
CORN PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980 AND TREND PROJECTIONS TO 1990

Year	Production		Total	Per Capita Human	Imports ³	
	Disappearance		Metric	Consumption	Total	U. S. ⁴
	Metric	Hectares			Metric	Metric
	Tons		tons	Kilograms	tons	tons
	(1000)	(1000)	(1000)		(1000)	(1000)
1965	459	483.6	596	24.5	139	
1966	565	473.0	730	27.8	291	
1967	577	436.5	767	28.1	196	92.3
1968	548	433.9	880	27.3	400	360
1969	553	426.9	932	27.4	416	83.2
1970	581	417.8	984	28.0	321	106.2
1971	526	393.2	1173	26.7	505	342.0
1972	519	389.9	1340	26.7	787	453.2
1973	509	372.3	1222	26.2	794	509.8
1974	486	359.8	1421	25.2	987	586.7
1975	451	371.5	1567	24.2	1215	1118.8
1976	379	348.7	1577	21.6	1196	1149.9
1977	442	360.7	1620	23.8	1202	1181
1978 ²	449	366.8	2400		1962	1641
1979	456	338.2	2850		2302	2020
1980	468	370.0	3300		2800	2520
1985	394.3	290.2	3313	21.3	2918.6	
1990	352.8	247.7	4054	19.6	3701.2	

Data Sources: 1. USDA-ESS Statistical Bulletin # 664, Unless other wise stated
 2. USDA/FAS Attache Reports, All 1978-80 Data
 3. OECD Commodity Market Summaries
 4. U.S. Supply of Imports

Table 8

PER CAPITA HUMAN CONSUMPTION OF SELECTED COMMODITIES IN PORTUGAL AND THE EEC
(kg/head/year)

	PORTUGAL					EEC
	1963/65 ¹	1975/77 ¹	1980	1985 ²	1990 ²	1975/77 ¹
*FRESH FISH	25.2 ⁴	23.5	23.7	22.9	21.9	11.0 ³
BARLEY	.28	.15	0	0	0	.48
CORN	33.0	23.2	23.0	21.3	19.6	4.1
*BEEF	7.0	13.1	10.7	14.9	16.5	25.3
*POULTRY MEAT	4.7	12.3	14.4	18.9	22.7	12.3 ³
*EGGS	3.8	5.0	6.7	7.1	8.1	13.7
MILK	33.9	59.2	62.5	79.24	90.6	104.0
CHEESE	2.5	2.6	4.0	3.8	4.3	10.8
*PORK	6.2	15.2	19.1	21.4	24.6	33.1
*Major Protein Sources - Total			74.6	85.2	93.8	95.4

Data Source: AGRA EUROPE, p. 97, and USDA/FAS and ESS reports.

¹ Annual averages for periods shows

² Projections

³ 1975 only

⁴ 1966 only

* Total beef, pork, poultry meat, eggs and fresh fish per capita human consumption.

B. Barley

Barley production has dropped from 72,000 MT in 1965 to 40,000 MT in 1980. The area planted to barley has also declined from 124,800 MT in 1965 to 72,000 MT in 1980. In the early 1970s, yield per hectare increased 50 percent to reach 824 kg/ha but has since waned to near the 1965/67 level of 550 kg/ha. Current barley yields are one-fourth of the world average and one-seventh of the EEC average yields (see Table 3).

Consumption has increased to an average 96,700 MT for the period 1977/80.

Per capita human consumption has diminished from .6 kg. in the 1965/67 period to .15 in the 1975/77 period. However, barley consumption in the form of beer has increased from 4.4 liters to 24 liters per capita from 1963 to 1977.⁴ This dramatic augmentation of beer consumption may possibly continue at the same pace. Per capita beer consumption in West Germany was 145.6 liters in 1978.⁵ Beer consumption in Portugal is near one-seventh per capita consumption in West Germany.

Barley Projections -- Given current trends and production practices, barley production would reach 49,530 and 43,160 MT in 1985 and 1990 respectively. Utilization would attain 120,750 and 104,800 MT for the same years, respectively. Imports would be 53,200 MT in 1985 and 61,640 MT in 1990.

It is estimated that barley production can double by 1985 given improved technology and increased investment.⁶ Barley total yield would still be less than one-half of the world average production. See Table 3, p. 12. It is suggested that barley should be substituted for corn and wheat where

they are produced on marginally productive soils. This could result in an increase of 100,000 hectares planted to barley in 1985. These two improvements would result in total production of 194,952 MT in 1985 allowing an export of 92,954 MT.

Human per capita consumption will decline to a trace (less than .01 kg) in 1985 and 1990, but this does not take into consideration barley consumed in the form of beer and malt.

Graph 2

BARLEY PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980,
AND TREND PROJECTIONS TO 1990

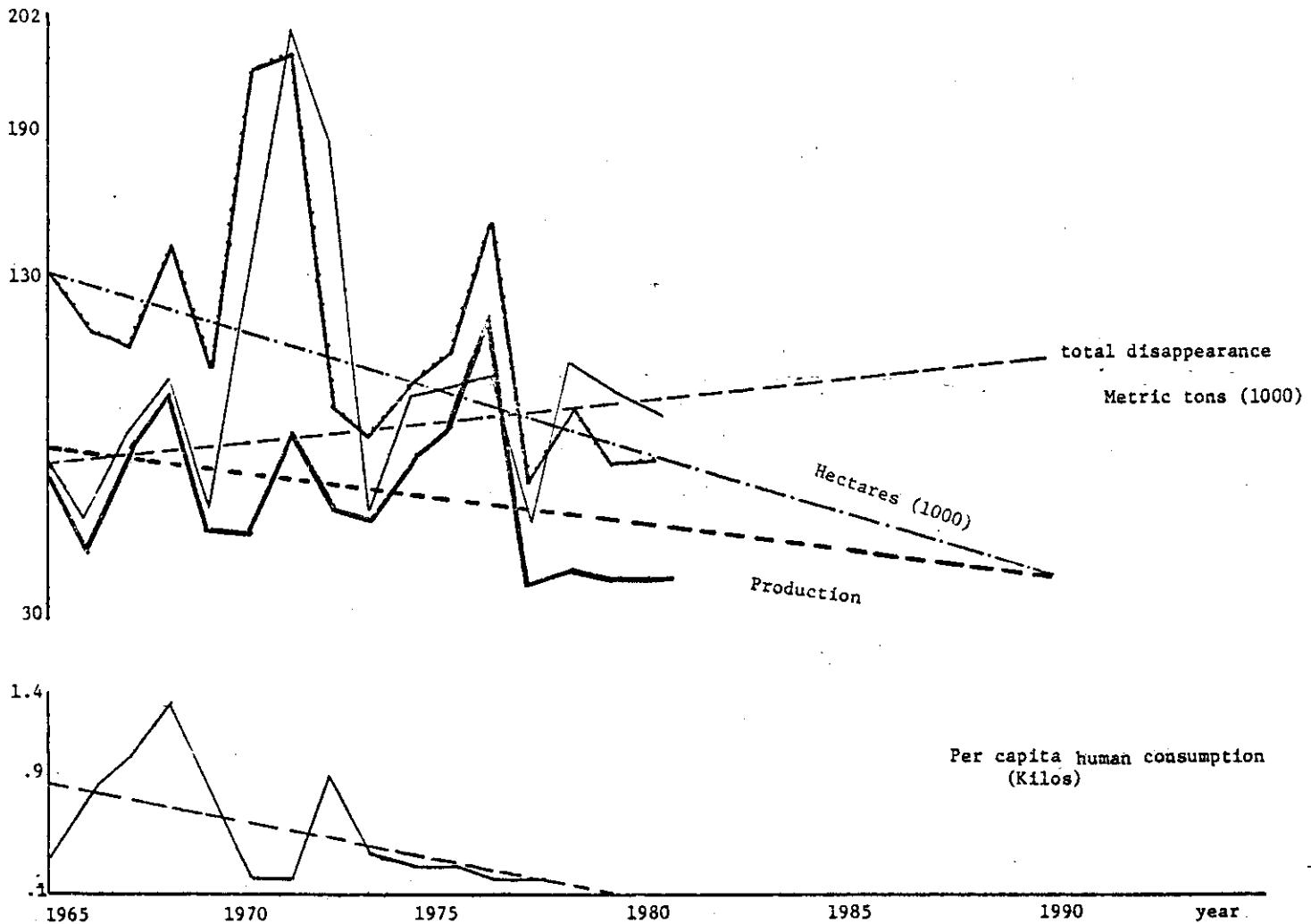


Table 9

1
BARLEY PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980 AND TREND PROJECTIONS 1985-1990

Year	Production		Total	Per Capita	Imports ³	
	Disappearance		Metric Tons (1000)	Human Consumption Kilograms	Total	U.S. ⁴
	Metric Tons (1000)	Hectares (1000)			Metric tons (1000)	Metric tons (1000)
1965	72	128.4	77	.2	6	0
1966	50	111.2	57	.7	8	0
1967	74	106.7	81	1.0	9	0
1968	94	135.0	97	1.4	4	0
1969	55	100.5	63	.8	10	0
1970	54	188.1	124	.1	70	17.8
1971	85	192.1	202	.1	118	62.4
1972	63	89.4	169	.9	121	18.0
1973	57	80.8	61	.3	13	0
1974	74	93.5	91	.2	34	0
1975	87	100.5	95	.2	9	0
1976	117	142.1	99	.1	0	0
1977	39	67.3	58	.1	31	0
1978 ²	44	85.6	103		49	2.7
1979	41	74.1	97		60.6	0
1980	40	72.0	90		50	0
1985	49.5	62.5	102.8	0	53.3	
1990	43.2	43.2	104.8	0	61.6	

Data Sources: 1. USDA/ESS Statistical Bulletin # 664, unless otherwise stated
 2. USDA/FAS Attache Reports, all 1978-80 Data
 3. OECD Commodity Market Summaries
 4. U.S. Supply of Imports

C. Soybeans

The major oilseeds grown in Portugal are safflower and sunflowers. Soybeans are not grown in Portugal and have, thus, been unregulated by government price policies.

Soybean use in the mixed feed industry is a relatively new occurrence and available information is often scarce and not consistent among sources. The OECD⁸ first listed Portuguese soybean imports in 1967 when 23 MT were imported. Imports have expanded to 231,000 MT in 1980. Soy meal and soy oil were first listed by OECD Portuguese reports in 1977. Soy meal imports have increased 600 percent from 1977 to 1980.

Soy meal consumption in 1977 was 308,000 MT. Consumption for 1985 and 1990 is projected at 474,000 MT and 613,000 MT respectively.

Soy oil consumption in 1980 was 18,000 MT and projections show consumption of 35,500 MT in 1985 and 48,300 MT in 1990 given current trends.

Soybean consumption is projected at 305,000 MT and 370,000 MT for 1985 and 1990 respectively, but these projections are based on data for only three years and may not reflect actual consumption trends.

Table 10

SOYBEAN, MEAL AND OIL PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980¹ AND
TREND PROJECTIONS 1985 and 1990

Year	Total Disappearance			Imports ³				
	Beans	Meal	Oil	Beans		Meal		Oil
	(1000 metric tons)			Total	U.S. ⁴	Total	U.S.	Total U. S.
				(1000 metric tons)				
1965								
1966								
1967				.023				.368 .153
1968				.001				.479
1969				.18	13			.351
1970				52.5	41.5			.080
1971		128.4	0	52.5	52.5			.316
1972		99.4	0	36.7	26.7			.446
1973		120.5	2.5	5.0	5.0			.484
1974		173.9	5.1	66.0	56.3			1.809
1975		155.8	9.5	66.3	50.7			3.050
1976		197.1	14.9	159.0				3.6
1977		279.6	18.5	146.0	137.4	47.3		19.4
1978 ²	210	301.8	20.6	197.5	197.5	169.2		5.9
1979	235	308.0	19.3	229.2	174.1	170.6		.5
1980	236		18.0	231.0	127.9	279.4		
1985	305	474.4	35.5	336.4	269.9	537		0
1990	370	613.6	48.3	448.2	357.0	812.5		0

- Data Sources: 1. USDA/ESS Statistical Bulletin #664, unless otherwise stated
2. USDA/FAS Attache Reports, all 1978-1980 data
3. OECD Commodity Market Summaries
4. U. S. Supply or Imports

D. Beef

The beef self-sufficiency ratio (production divided by consumption) for 1965/68 was 78 percent, 68 percent for 1975/77 and 87 percent for 1978/80. The pattern of self-sufficiency shows a greater dependence on imports for the 1975/77 period but a lesser dependence for the 1978/80 period.

Most frozen beef imports are from Argentina, Uruguay and the EEC.
Live calf and steer imports are chiefly from EEC countries.

Beef per capita consumption has increased from an average of 7.0 kg in 1963/65 to 13.1 kg in 1975/77 which is still nearly one-half of the EEC per capita consumption for the 1975/77 period. In 1980 per capita consumption decreased to 10.7 kg.

Beef Projections -- If past trends prevail, beef production is projected at 107,700 MT in 1985 and 120,000 MT in 1990. Consumption is projected at 139,500 MT and 155,800 MT for the same years. The ratio of self-sufficiency would decline from its 1980 level of 87 percent to 63 percent in 1990 necessitating a greater dependency on imported beef. Total beef imports are projected to increase to 35,800 MT in 1990.

Per capita beef consumption would reach 16.5 kg in 1990 which is well below average EEC per capita consumption but more than double 1965 consumption in Portugal.

BEEF PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980 AND TREND PROJECTIONS
TO 1990

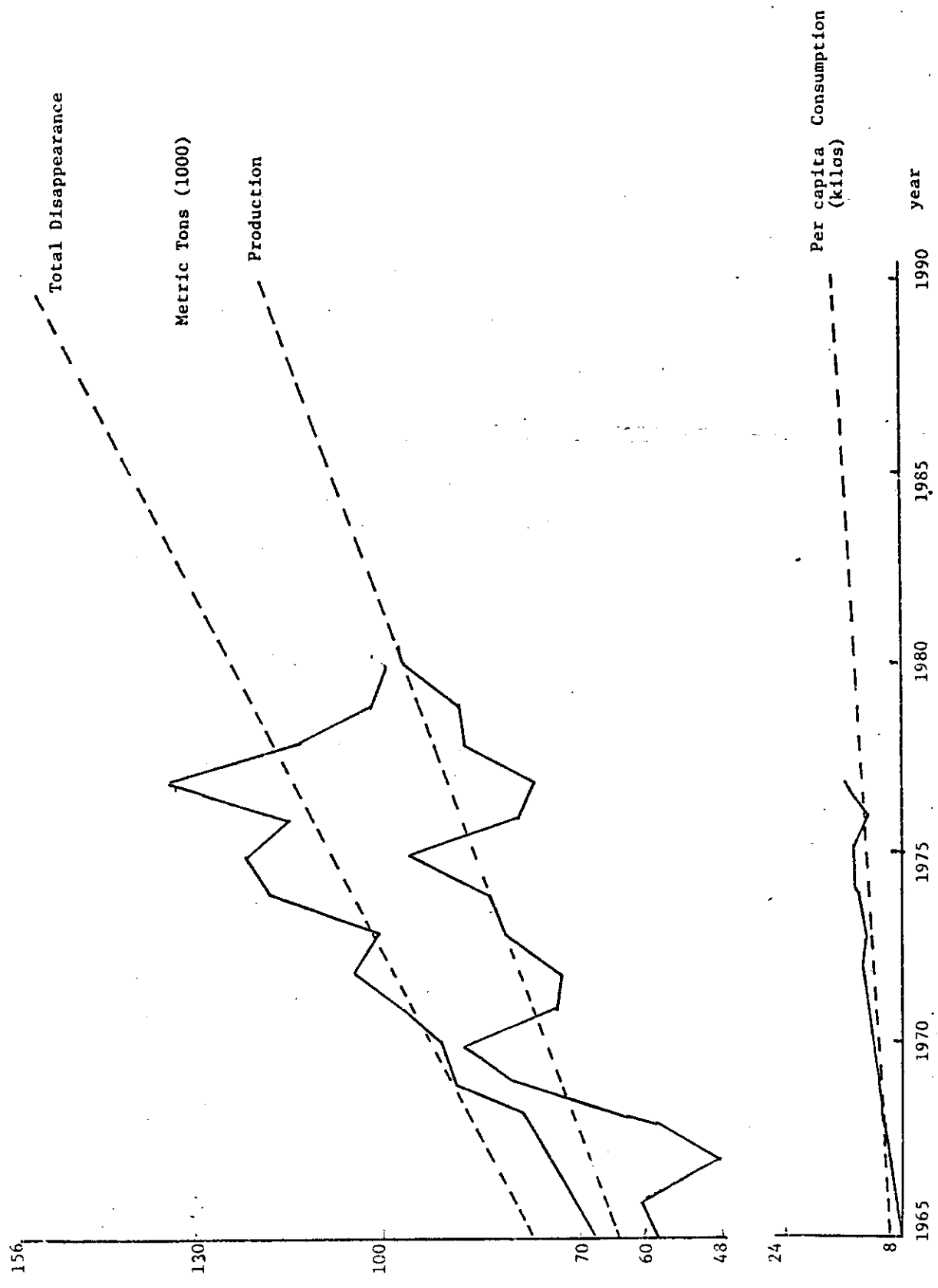


Table 11

BEF PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980,¹
AND TREND PROJECTIONS 1985-1990

Year	Production		Total Disappearance		Per Capita Consumption		Live Cattle		Imports ³	
	Metric	tons (1000)	Metric	tons (1000)	Kilograms (1000)	(1000)	(1000)	(1000)	Total	U.S. 4
1965	58.1		67.8		7.3		1108			
1966	60.5		71.3		7.8		1080			
1967	48.1		74.3		8.2		1050			
1968	57.9		78.3		8.8		1100			
1969	79.2		89.1		10.2		1050			
1970	87.2		91.3		10.6		1020			
1971	74.2		97.0		11.3		1060			
1972	73.0		104.9		12.2		1339			
1973	81.2		101.3		11.7		1400			
1974	84.3		118.2		13.5		1072			
1975	97.7		121.9		12.9		1100		24.2	
1976	79.3		115.4		11.9		1080		36.1	
1977	77.4		134.2		14.5		1100		56.8	
1978 ²	88.1		113.5		12.2				25.4	
1979	88.0		102.2		10.9				13.2	
1980	97.5		100.		10.7				2.5	
1985	107.7		130.5		14.9				31.8	
1990	120.0		155.8		16.5				35.8	

Data Sources: 1. USDA/ESS Statistical Bulletin #664, unless otherwise stated
2. USDA/FAS Attache Reports, All 1978-80 data
3. OECD Commodity Market Summaries
4. U.S. Supply of Imports

E. Pork

While pork production has nearly doubled since 1965, consumption has increased twice as fast as production. Imports have risen to 32,000 MT in the 1979/80 period, eight times larger than the 1965/67 average imports.

Pork Projections -- Continuation of trade in consumption and production to 1985 would result in required imports of 26,500 MT. In 1990 imports would be 33,000 MT, similar to the import requirements for 1979/80.

Projected per capita consumption will increase to 24.6 kg in 1990, well below the EEC average consumption of 33.1 kg for 1975/77.

Graph 4

PORK PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980, AND TREND
PROJECTIONS TO 1990

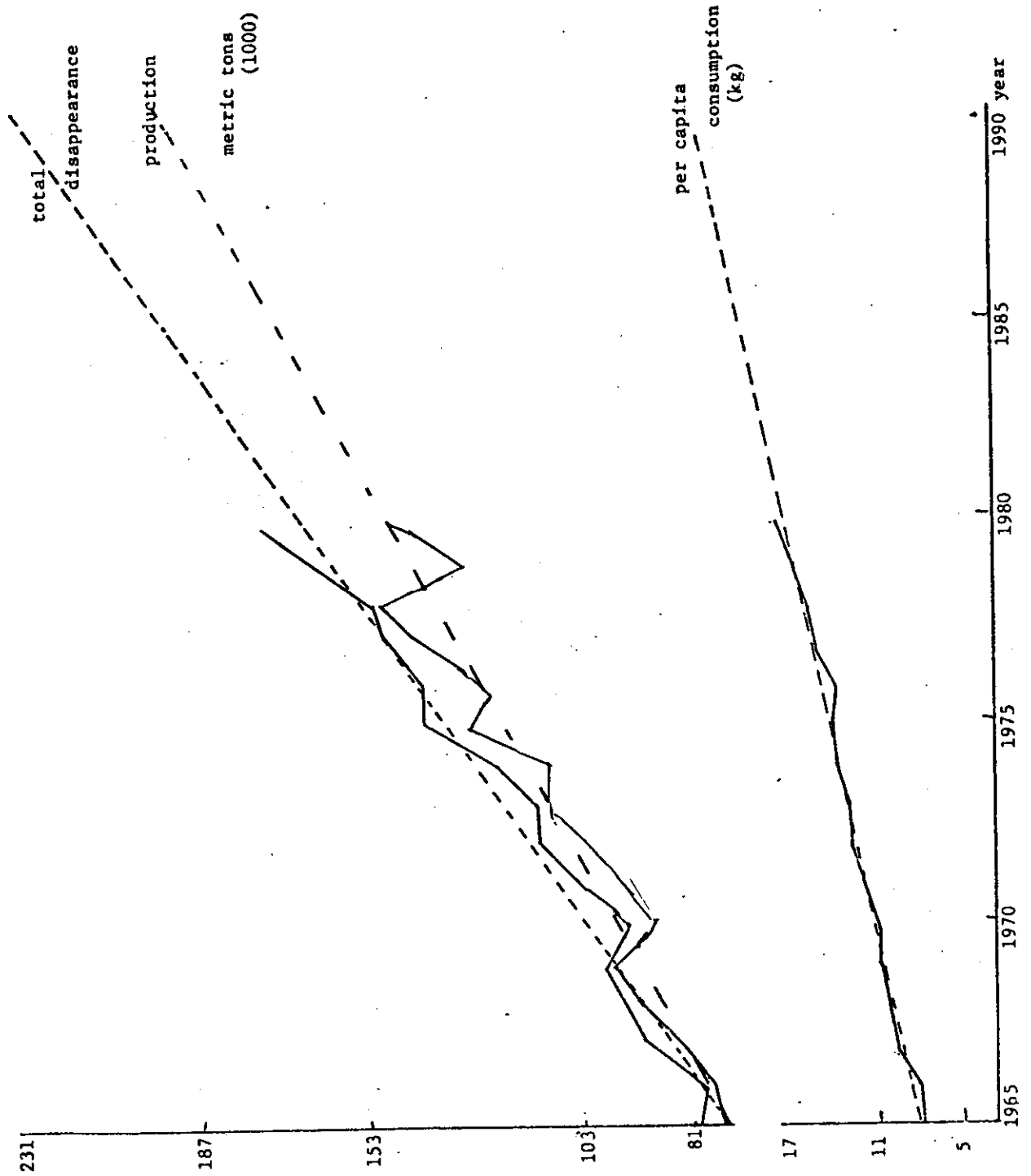


Table 12

PORK PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980¹
AND TREND PROJECTIONS 1985 and 1990

Year	Production	Slaughtered Hogs	Live hogs	Total Disappearance	Per capita consumption	Imports ³	
	Metric tons (1000)	Head (1000)	(1000)	Metric tons (1000)	Kilograms	Total	U.S. ⁴
1965	75.4	638.1	1365	80.2	8.7		
1966	78.0	762.1	1441	78.2	8.5		
1967	84.6	619.8	1450	91.7	10.2	7.2	0
1968	93.1	855.2	1700	96.3	10.9	3.3	0
1969	99.6	1018.7	1550	100.0	11.5	.2	0
1970	91.5	858.1	1300	95.7	11.1	4.4	0
1971	95.3	941.7	1820	105.5	12.3	10.2	0
1972	103.1	1071.1	1977	115.4	13.4	12.5	0
1973	112.0	1248.2	2100	116.3	13.5	5.4	0
1974	113.2	1220.8	1977	125.0	14.4	11.6	.07
1975	132.0	1502.7	2000	140.9	14.9	6.5	0
1976	126.9	1416.6	2100	142.1	14.7		
1977	140.1	1595.8	2200	147.8	16.0		
1978 ²	151.2			152.2	16.4		
1979	133.0			165	17.7		
1980	146.0			178	19.1		
1985	173.2		2776.4	199.7	21.4		
1990	198.1		3136.6	231.4	24.6		

Data Source: 1. USDA/ESS Statistical Bulletin #664, unless otherwise stated
2. USDA/FAS Attached Reports, all 1978-1980 data
3. OECD Commodity Market Summaries
4. U. S. Supply of Imports

F. Poultry Meat and Eggs

Portugal is nearly 100 percent self-sufficient in poultry meat and egg production. Egg imports comprise less than one-half of one percent of total production. Imported eggs are used for hatching purposes and nearly all imports are from Spain.¹⁰ The U. S. supplied 12 MT in 1975, which was 75 percent of the years' total egg imports. Poultry meat imports are of even less importance than eggs.

Per capita poultry meat consumption was greater than the average EEC consumption for 1975/77. Per capita egg consumption is less than half the EEC level.

Projections -- Trends in poultry meat consumption indicate increase to 212,900 MT in 1990 and per capita of 22.7 kg.

Since 1980 poultry meat consumption levels are larger than the EEC per capita consumption for 1975/77. It is possible that poultry meat consumption is nearing the market saturation point. It is questionable how much more poultry meat the Portuguese are willing to consume and will determine the maximum level of production unless poultry meat is exported to other countries.

Egg consumption in 1990 is projected to increase to 81,360 MT with per capita consumption of 8.1 kg, well below EEC average consumption of 13.7 kg for the 1975/77 period.

Egg production and consumption can continue to increase before reaching the consumption saturation point.

Graph 5

POULTRY MEAT PRODUCTION AND CONSUMPTION: ACTUAL 1965-80 AND TREND PROJECTIONS TO 1990

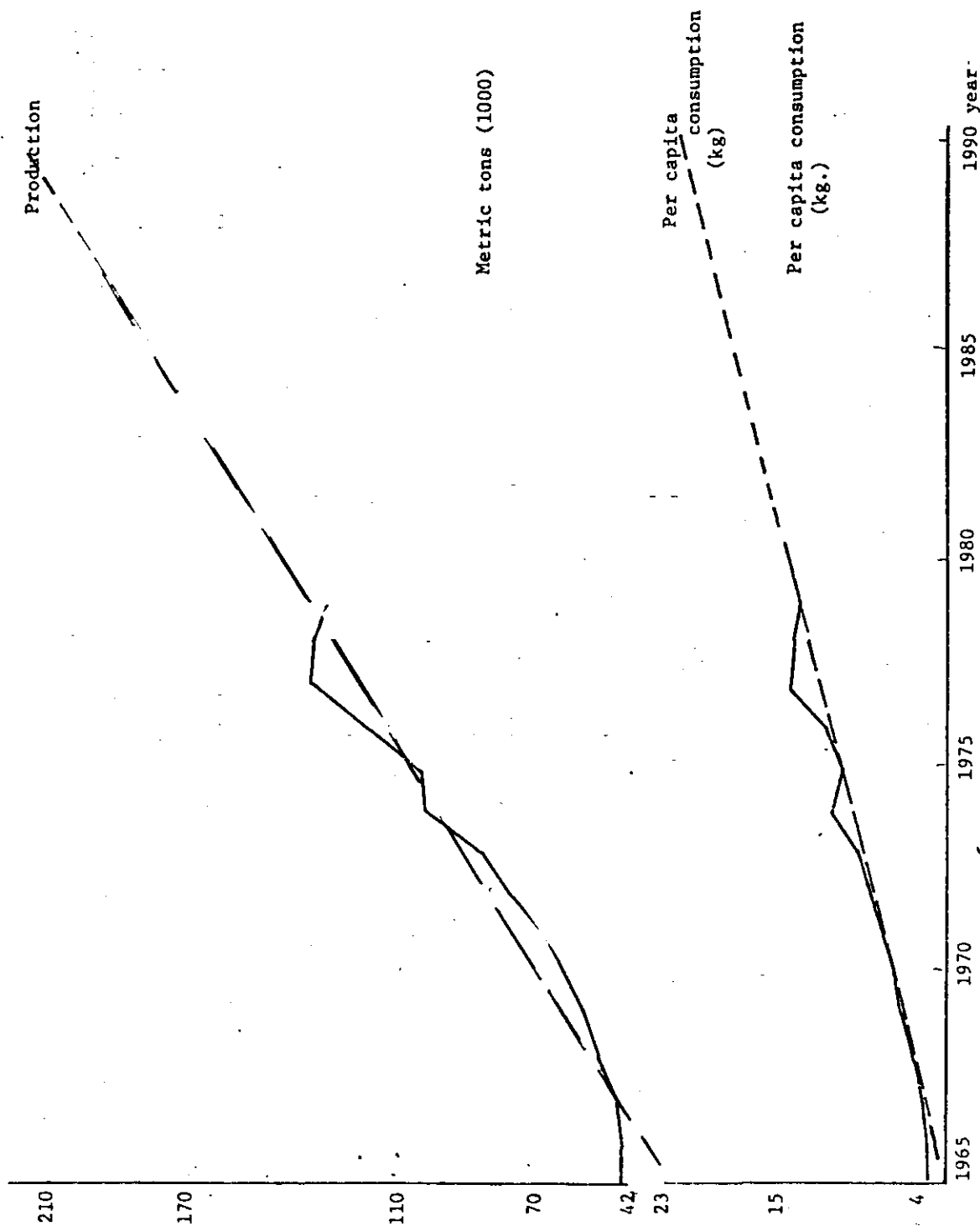


Table 13

POULTRY MEAT PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980¹
AND TREND PROJECTIONS 1985 - 1990

Year	Production	Total Disappearance	Per Capita Consumption	Imports ³	U.S. ⁴
	Metric tons	Metric tons	Kilograms	Total Metric tons	Metric tons
	(1000)	(1000)		(1000)	(1000)
1965	42.5	42.6	4.6		
1966	42.9	42.9	4.7	.006	0
1967	43.2	43.2	4.8	.009	0
1968	49.7	49.5	5.5	.012	0
1969	52.2	53.2	6.1		
			6.8	.019	0
1970	58.2	58.0	7.8	.029	0
1971	67.2	67.0	8.7	.113	0
1972	75.0	74.7	9.6	.053	0
1973	82.2	82.9	11.4	.067	0
1974	99.6	99.5			
			10.5	.043	0
1975	100.0	99.9	11.8		
1976	114.8	114.7	14.5		
1977	133.8	134.0	14.3		
1978 ²	132.5	132.5	13.7		
1979	128.0	128.0	14.4		
1980	134.6	134.6			
			18.9	0	
1985	176.3	176.3			
			22.7	0	
1990	212.9	212.9			

Data Sources: 1. USDA/ESS Statistical Bulletin # 664, unless otherwise stated
2. USDA/FAS Attache reports, all 1978-1980 data
3. OECD Commodity Market Summaries
4. U.S. supply of imports

Graph 6

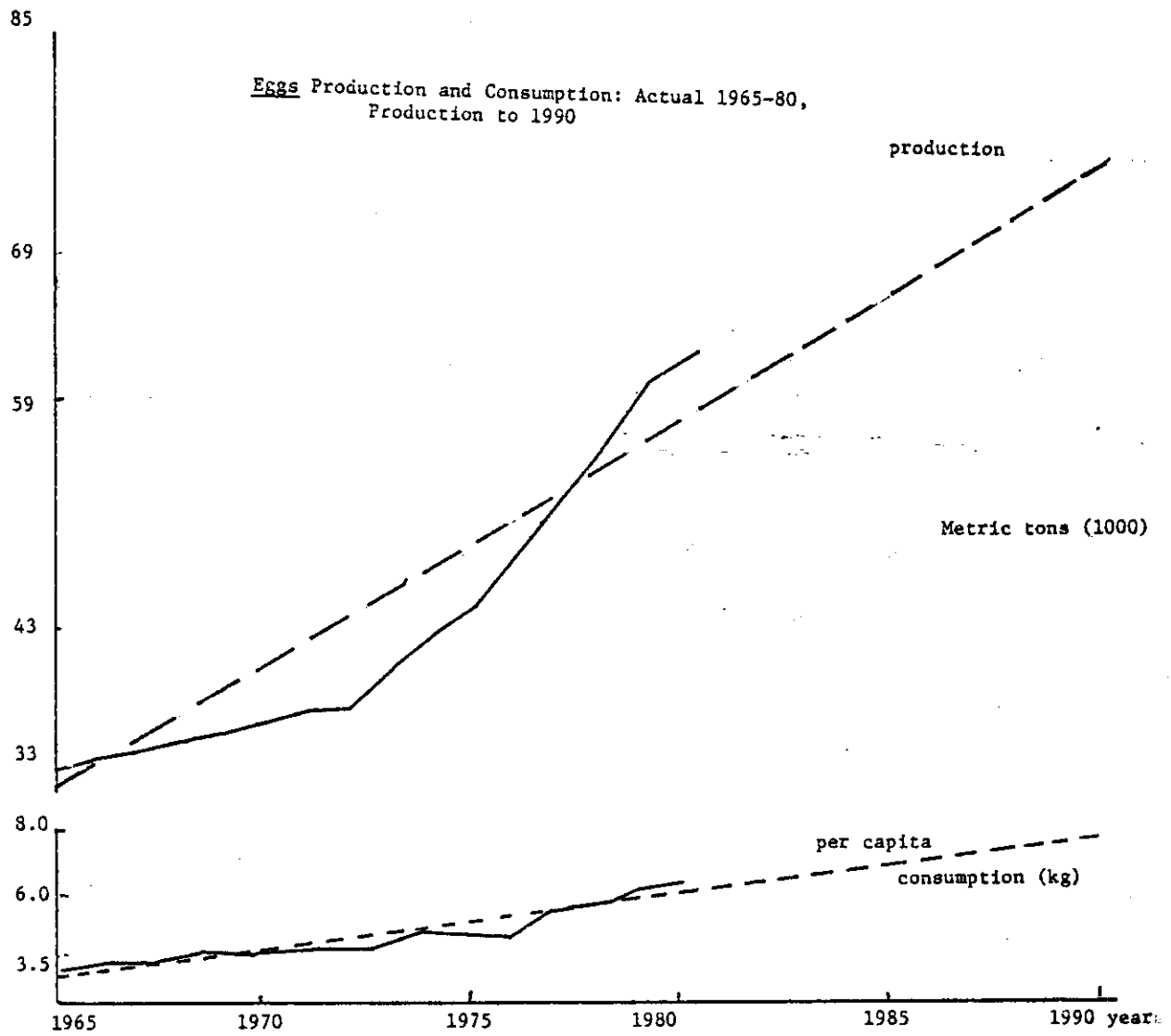


Table 14

EGG PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980,¹
AND TREND PROJECTIONS 1985-1990

Year	Production	Total	Per Capita	Imports ³	
		Disappearance	Consumption	Total	U. S. ⁴
	Metric tons (1000)	Metric tons (1000)	Kilograms	Metric tons (1000)	
1965	33.3		3.6		
1966	34.0		3.7		
1967	34.6		3.8	.021	
1968	35.2		4.0	.005	
1969	35.9		4.1	.008	
1970	36.5		4.2	.025	
1971	37.2		4.3	.016	
1972	37.4		4.3	.012	
1973	40.1		4.6	.023	.006
1974	42.7		4.9	.023	.009
1975	44.7		4.7	.016	.012
1976	44.2		4.6	.023	.011
1977	52.2		5.7	.017	.006
1978 ²	55.8		6.0	.004	0
1979	60.8		6.5		
1980	62.4		6.7		
1985	66.6		7.1		
1990	76.1		8.1		

- Data Sources:
1. USDA/ESS Statistical Bulletin # 664, unless otherwise stated
 2. USDA/FAS Attache Reports, all 1978-1980 data
 3. OECD Commodity Market Summaries
 4. U. S. Supply of Imports
 5. Total Disappearance equals Production since imports are so small

G. Milk and Cheese

Portugal is nearly self-sufficient in the production of milk and cheese. Cheese imports reached a 16-year high of six percent of total production in 1979, while milk imports reached a high of two percent of production in 1976. U.S. supply of Portuguese milk imports reached a high in 1972 when the U.S. provided 72 MT of milk.

Milk production increased from the 1965/67 average of 367,900 MT to 564,300 MT for 1978/80. Average milk production has fluctuated between 2576 kg/cow and 2770 kg/cow in the 16-year period of this study. The total number of dairy cows has increased from a low of 136,000 head to 224,000 head in 1977. The increase in dairy herd size has accounted for the increased milk production.

Milk cows are also used as draft animals on small farms and this added energy output reduces milk production per cow.

Graph 7

MILK PRODUCTION AND CONSUMPTION: ACTUAL 1965-80 AND TREND PROJECTIONS TO 1990

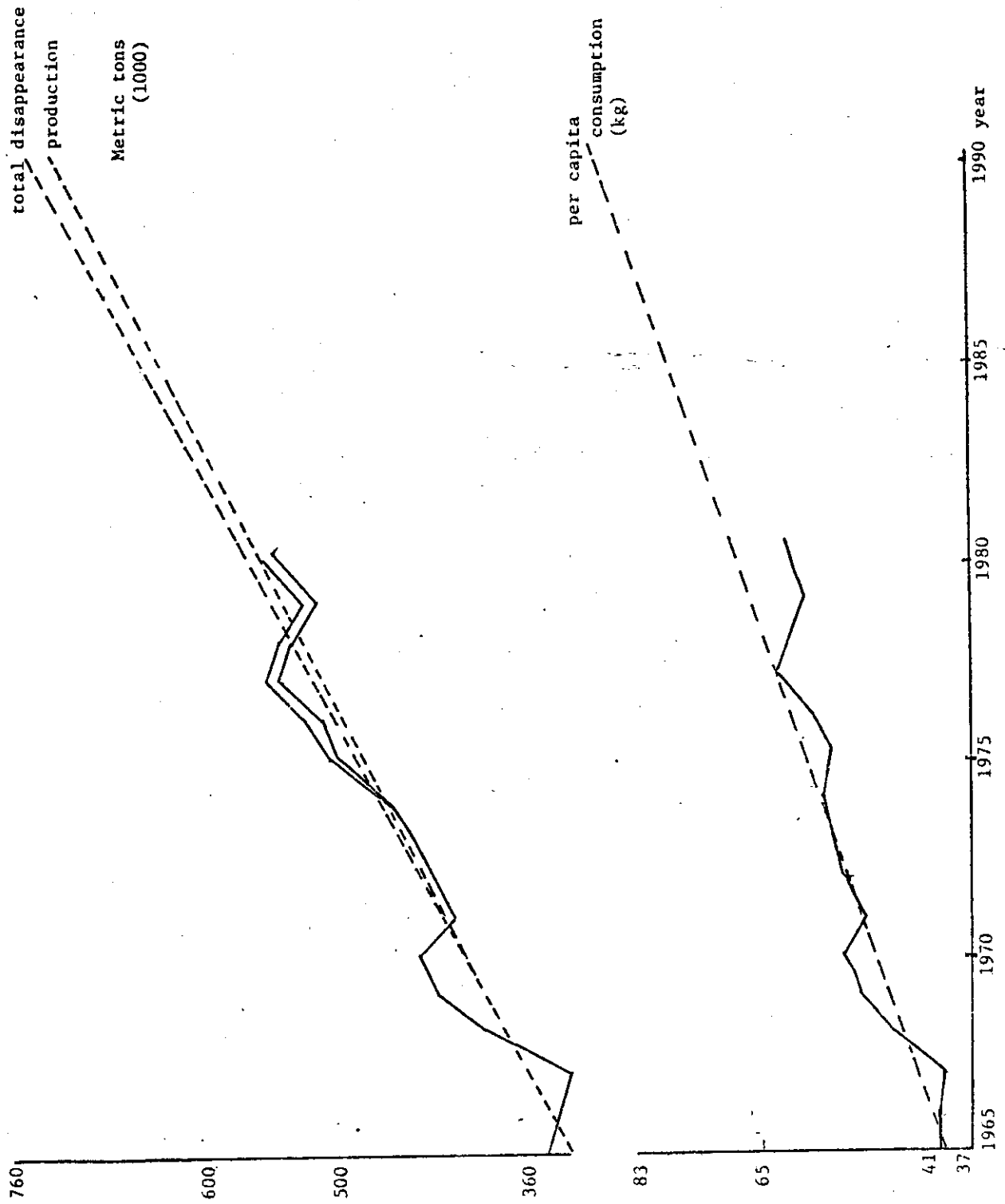


Table 15

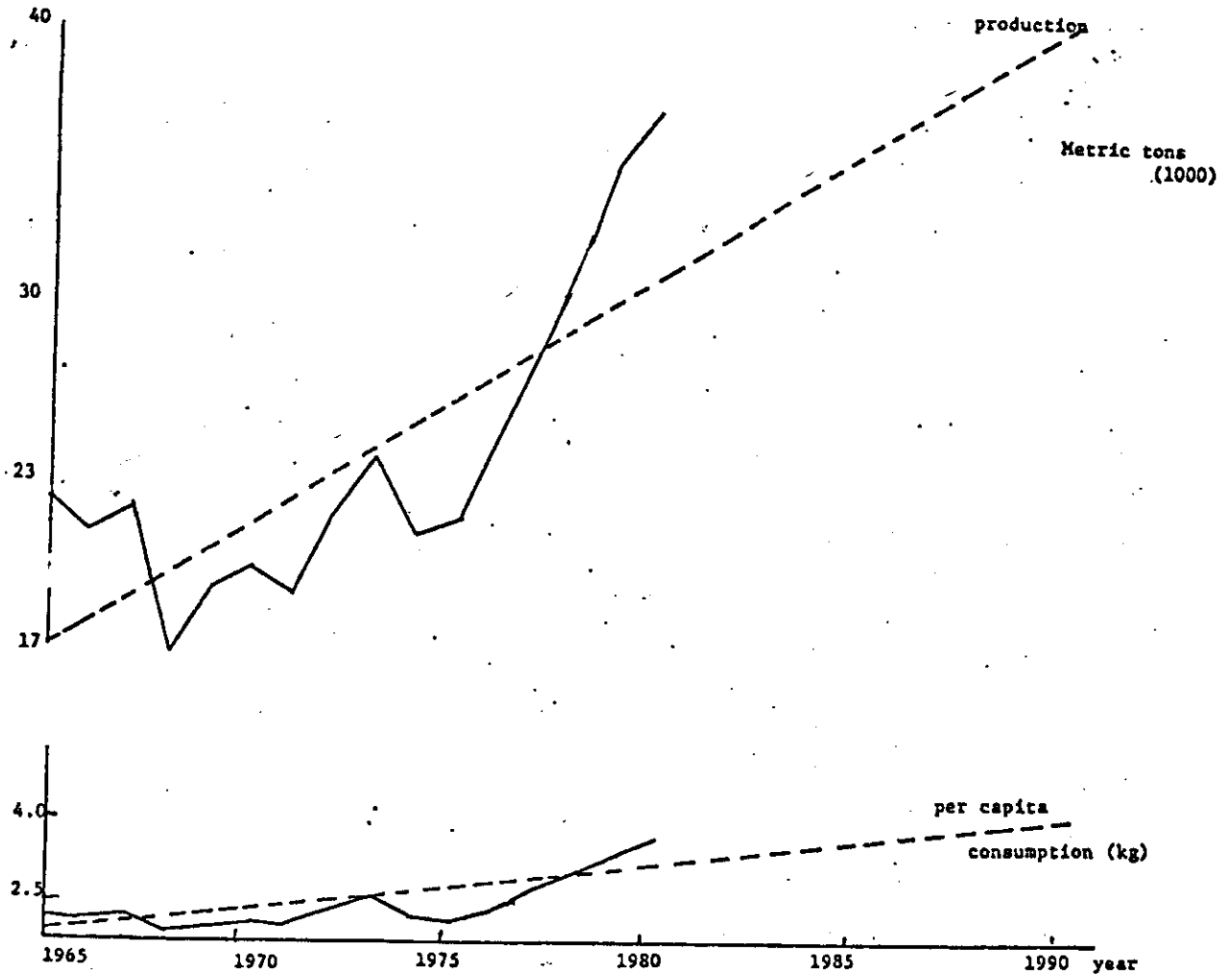
MILK PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980¹, AND TREND PROJECTIONS 1985-1990

Year	Production	Total Disappearance	Per Capita Consumption	Dairy Herd size	Imports ³	
	Metric tons (1000)	Metric Tons (1000)	Kilograms	Head (1000)	Total Metric tons (1000)	U. S. ⁴
1965	377.0	377.0	40.8	143		
1966	367.8	367.8	40.8	139		
1967	359.0	360.4	39.9	136	1.4	.013
1968	416.8	417.5	47.1	150	.8	.002
1969	457.8	458.3	52.5	166	.5	.001
1970	472.4	472.8	54.9	172	.4	.002
1971	446.6	447.1	52.0	161	.5	.001
1972	460.4	462.4	53.8	167	2.0	.072
1973	476.5	478.5	55.3	184	2.0	.007
1974	498.7	499.8	57.4	188	1.1	.004
1975	530.6	535.8	56.7	200	5.2	.003
1976	544.5	555.4	57.3	206	10.9	.002
1977	577.2	588.1	63.6	224	10.9	.004
1978 ²	568.9	577.3	62.1		8.4	.001
1979	549.0	558.0	59.8			
1980	575.0	584.0	62.5			
1985	666.4	679.9	79.24	266	13.3	
1990	741.1	758.3	90.6	299.6	17.2	

Data Sources: 1. USDA/ESS Statistical Bulletin #664, unless otherwise stated
 2. USDA/FAS Attache Reports, all 1978-1980 data
 3. OECD Commodity Market Summaries
 4. U. S. Supply of imports

Graph 8

CHEESE - COW, SHEEP AND GOAT COMBINED: PRODUCTION AND CONSUMPTION: ACTUAL 1965-80
AND TREND PROJECTIONS TO 1990



¹
CHEESE PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980²
AND TREND PROJECTIONS, 1985 and 1990

Year	PRODUCTION	TOTAL DISAPPEARANCE	PER CAPITA CONSUMPTION
	Metric tons (1000)	Metric tons (1000)	Kilograms
1965	23.0	23.0	2.4
1966	21.7	21.7	2.4
1967	22.3	22.3	2.3
1968	17.0	17.0	2.3
1969	19.5	19.5	2.35
1970	20.3	20.3	2.3
1971	19.4	19.4	2.5
1972	22.1	22.1	2.6
1973	24.5	24.5	2.6
1974	21.5	21.5	2.5
1975	22.0	22.0	2.4
1976	24.8	24.8	2.5
1977	27.8	27.8	2.7
1978	29.7	29.7	2.9
1979	34.2	34.2	3.7
1980	36.0	36.0	4.0
1985	34.9	34.9	3.8
1990	39.3	39.3	4.3

¹Cheese from sheep, cow and goat milk.

²USDA/ESS Statistical Bulletin #664 unless otherwise stated.
USDA/FAS Attache Reports for 1978-80 data.

H. Fresh Fish

66

The World Bank has summarized the Portuguese fish industry as follows:

Fisheries represent a relatively small proportion of Portugal's GDP. However, fish represented 32 percent of animal protein consumption in 1976.

Most fishing nations have experienced reduced catches since the late 1960s and have further been vulnerable to new constraints such as the depletion of certain marine species, expansion of territorial waters and rising fuel and labor costs.

Growing competition for a dwindling supply of certain species and unfettered intrusion in Portuguese territorial waters have also been detrimental to Portugal's fisheries.

The number of fishermen in continental Portugal has declined from 36,000 in the 1950s to 26,000 in 1974. The obsolescence of the Portuguese fleet and fishing ports and insufficient facilities for storage and marketing, further restricted growth of fisheries in Portugal.

The landed weight of fresh fish has decreased from 366,000 MT in 1965 to the 1980 level of 202,400 MT. Consumption has also declined but not at the same rate as production which results in a greater dependence upon fish imports to meet internal demand. Decrease in consumption is probably due to greater income levels allowing the substitution of livestock products for grain and fish and to possibly higher fish prices.

Per capita human consumption has decreased from a high of 29.4 kg/year to 23.7 kg in 1980.

Projections -- Given the continuation of current trends, production would continue to decline at a faster rate than declining consumption; imports would increase to 92,000 MT in 1990.

Graph 9

FRESH FISH PRODUCTION AND CONSUMPTION: ACTUAL 1965-80 AND TREND PROJECTIONS TO 1990

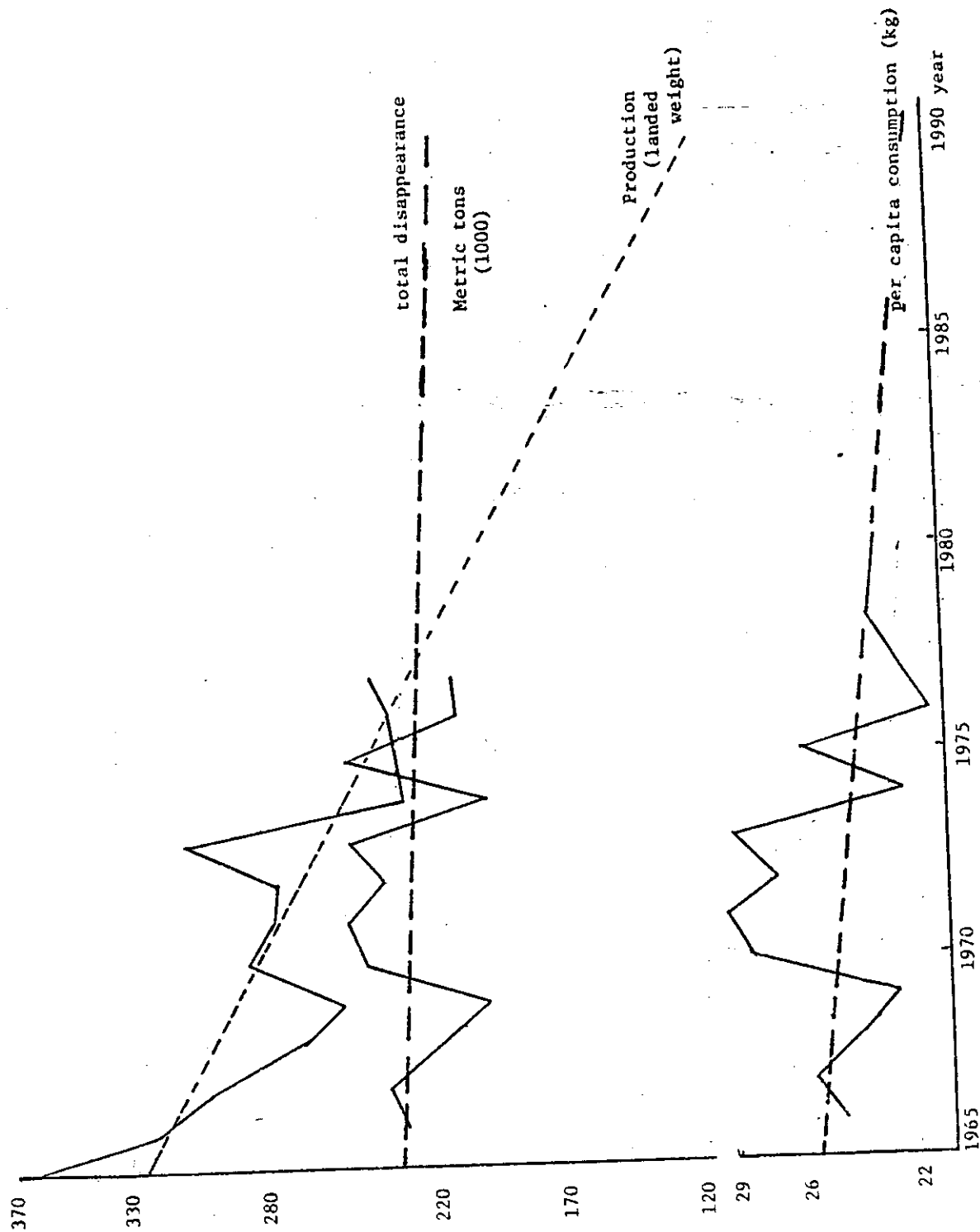


Table 17

FISH PRODUCTION AND CONSUMPTION: ACTUAL 1965-1980¹, AND TREND PROJECTIONS 1985 and 1990

Year	Production*	Total Disappearance	Per capita Consumption	Imports ³	
	Metric tons (1000)	Metric tons (1000)	Kilograms	Total	U. S. ⁴
1965	366.0				
1966	321.4	231.0	25.2	63.7	0
1967	303.6	237.6	26.3	17.9	0
1968	270.9	218.6	24.6	49.2	.058
1969	252.9	202.4	23.2		
1970	286.9	245.5	28.5	60.1	.440
1971	276.5	252.1	29.4	73.0	0
1972	275.4	237.6	27.6	81.5	.402
1973	307.8	250.2	29.0	76.7	.030
1974	229.6	198.4	22.8	80.0	.089
1975	231.4	250.2	26.5	81.5	.962
1976	234.0	210.4	21.7	86.1	.542
1977	240.7	211.2	22.8	88.3	.335
1978 ²	218.9	222.8	24.0	58.2	.037
1979	210.6	221.9	23.8		
1980	202.4	221.0	23.7		
1985	161.1	216.4	22.9		
1990	119.8	211.8	21.9		

* Landed weight

Data Sources: 1. USDA/ESS Statistical Bulletin #664, unless otherwise stated
 2. USDA/FAS Attached Reports, all 1978-1980 data
 3. OECD Commodity Market Summaries
 4. U. S. Supply of Imports

CHAPTER IV

CONCLUSIONS

A. Continued Trends on U. S. Supplied Commodities

Livestock production is directly related to feedgrain consumption. An increase in livestock production would result in an increased demand of feedgrains given the recent livestock production patterns of feeding grain to animals rather than letting them forage for feed. This would result in an increased demand on feedgrain imports.¹

The U.S. is the largest supplier of agriculture products to Portugal. In 1977, U.S. supplied commodities accounted for 36 percent of agricultural imports.² The majority of U.S. supplies are bulk commodities such as grains, while the U.S. supply of livestock products is minimal.³⁴

In the 1967/70 period, U.S. supplied corn accounted for 46.5 percent of total corn imports. In the 1977/80 period, U.S. supplied corn had risen to 96.3 percent of total corn imports.⁵ Brazil, Argentina and South Africa also supply corn to Portugal.⁶

It is possible that the U. S. domination of Portuguese corn imports will continue. It should be noted that studies indicate that corn yields could increase to two MT per hectare by 1985, given improved technology, increased capital investment and reduced government intervention in the market.⁷ This level of yield is still below the world average and less than one-half of the EEC average. Projected production with this average yield would be 580,400 MT in 1985 and 495,400 MT tons in 1990 given projected hectare plantings. Total corn imports (1985) would be reduced 200 to 300,000 MT which is not of much importance considering projected imports of 3,701,200 MT in 1990.

The U.S. has supplied barley to Portugal in only six of the 16 years under study in this paper. The maximum supply from the U.S. was 62,500 MT in 1971. In 1970 and 1972, the U.S. supplied 17,900 MT of imported barley but has supplied only minimal amounts since then. France has been the main source of barley imports. It is expected that France and Spain will supply future import demands.

The U.S. has been the main supplier of Portuguese soybeans, soy meal and soy oil imports with major competition from Brazil. Argentina was a supplier one year. It is expected that Brazil and the U.S. will continue to be the major suppliers of Portuguese soy imports.

B. Expected Commodity Changes Under CAP Adoption

EEC prices, except for milk, are higher than Portuguese prices. CAP adoption will result in higher producer prices for all commodities, except milk.⁹ The higher the EEC price is in relation to Portuguese prices, the greater will be the stimulus to expand production, other things being equal.¹⁰ Economic theory also suggests that increased producer prices will result in increased consumer prices which will depress consumer demand.

Thompson states that beef and pork prices are higher than EEC prices and thus will be severely hurt as output prices must fall and input prices must rise. It should be noted that Thompson used prices for the 1977/78 period while the Procalfer study used trend price projections from more recent data (1980). The Procalfer

-33-

study projects 1981 pork and beef prices at 57.23 and 81.02 percent respectively, of EEC prices. See Table 18. For other commodities the Thompson and Procalfer price data are in agreement.

Internal Portuguese corn prices would have to rise upon joining the EEC and the variable levy would be charged on EEC non-member corn imports. Average EEC corn import levies were 76.01 u.a./ton (\$113) in 1977/78. Corn levies would have cost 90 million u.a. or \$134 million¹² that year, (1 u.a. = \$1.49). Higher priced corn imports should stimulate increased plantings of corn and the substitution of cheaper¹³ nutritional sources. Higher mixed feed prices could cause the¹⁴ substitution of forage for mixed feed in dairy and beef production.

Barley should experience a substantial stimulus from the¹⁵ adoption of the CAP due to increased producer prices. Portugal is likely to substitute EEC supplied barley for higher priced U.S.¹⁶ corn, which will increase imports of feed barley from the EEC.

Overall feedgrain demand is likely to continue its recent rapid¹⁷ growth unless significant feedgrain substitutes are utilized.

Thompson's scenario with Portuguese beef and pork prices at a level higher than EEC prices would result in decreased production due to a loss of subsidies at both the consumer and producer level and¹⁹ a new lower producer price resulting in smaller gross margins.

Poultry meat production should be competitive with EEC pro-²⁰duction and may possibly continue its recent trend to enable Portugal to export poultry meat. However, McDonnell mentioned the possibility of poultry producers not being able to compete with older, more efficient EEC producers.

Milk and dairy products will lose the numerous producer and consumer subsidies that correspond to them. Gross margins will decrease

Table 18

PROCALFER

Comparison of Portuguese and EC Intervention
Price Projections (1000 Escudos/ton)¹

		EEC	Portugal	Portuguese/EEC Price ratios
Barley	1981	13.16	12.60	95.74
	1985	25.34	23.92	94.39
	1990	48.35	46.93	97.07
Corn	1981	13.16	13.00	98.78
	1985	25.34	24.28	95.83
	1990	48.35	46.99	97.19
Beef	1981	120.10	97.30	81.02
	1985	233.48	192.34	82.38
	1990	457.78	438.66	95.82
Pork	1981	144.15	82.50	57.23
	1985	275.62	117.17	64.28
	1990	515.52	487.43	94.55
Milk	1981	18.62	18.65	100.14
	1985	36.21	35.01	96.71
	1990	70.99	68.89	97.94

¹ Prices are projected by trends under different scenarios to arrive at these figures.

Source: Josling, Pearson and Langworthy, Procalfer, Part III, pp. 17 and 18.

as producer prices are lowered to the EEC price level and subsidies are removed. Milk production can be expected to decrease; dairy²¹ product imports will increase to meet the rising demand. The actual reduction in milk production may not be large due to the production structure of two to three dairy cows per farmer and the cooperative milking stations. The EEC has large dairy surpluses and would²² welcome an extra outlet.

In general, consumers will experience a significant reduction in real income from higher EEC food prices. Grain producers will benefit from²³ increased EEC prices. Beef and pork prices will also rise from their 1980 levels. Milk producers will suffer the effects of CAP adoption.

C. General Conclusions

The demand for imported feedgrains is dependent upon livestock production practices and domestic feedgrain production. The U. S. should be expected to continue to provide most of the Portuguese corn imports since the EEC is deficient in corn supply. However, corn import demand will be tempered by the EEC import levies.

Soybeans are not a protected commodity and oil and meal are allowed free entry into the EEC without an import levy. The U.S. may continue to be the major supplier of soy commodities if its C.I.F. price continues to be competitive with Brazil and Argentinan C.I.F. prices.

Barley will continue to be supplied by EEC producers. The small percent of the market the U.S. had on barley supplies will be eliminated as a result of the import levies.

The U.S. has had little influence in the livestock import market. U.S. livestock supplies will likely be replaced by EEC supplies.

The U.S. may possibly enter the live animal market by providing genetically superior animals or chickens.

Fish production may possibly increase as higher consumer beef and pork prices force consumers to look for cheaper meat substitutes. Economic theory suggests that an increased demand would result in higher fish prices which could possibly entice fishermen to increase their production.

24

In summary, we can expect EEC prices and CAP import restrictions to affect production and consumption (total disappearance) of the commodities in this study. The total impact of EEC entry will vary by commodity. Barley, corn, beef and pork production should expand beyond their recent trend lines due to higher EEC prices. Barley, corn, soybean, meal and oil total disappearance is expected to continue along their trend lines and may possibly expand beyond recent trends depending upon the method and degree of pork and beef production expansion. Pork and beef consumption is expected to decrease due to higher EEC prices; it is beyond the scope of this study to determine the degree of this reduction.

Poultry meat, eggs, milk and cheese production and total disappearance are expected to continue along their trend lines.

Fresh fish production and consumption may possibly expand beyond their recent trend lines in response to higher EEC beef and pork prices.

CHAPTER I

1. Agra Europe, The Agricultural Implications of EEC Enlargement Part II: Portugal, Special Report No. 5, London, 1980, p.33.
2. Gaston Thorn, Agra Europe, No. 977, April 30, 1982, No. E2.
3. Roma Fernandes, Carlos, The Implications of Portugal's Accession To The European Communities on Trade with Third Countries, n.p., n.d., passim.
4. Ferris, John N., "A Brief Survey of Techniques for Long-Range Projections and Forecasts in Agriculture," Staff Paper 76-39, Department of Agricultural Economics, MSU, 1976, p.2.
5. Tomek, William G. and Kenneth Robison, Agricultural Product Prices, Cornell University Press, Ithaca, 1981, p. 300.
6. Ferris, John N., p. 2.
7. Fox, Robert, et al., Procalfer, University of Arizona, 1981, p. 160.
8. Ferris, John No. p. 2

CHAPTER II

1. USDA-ESS, Selected Agricultural Statistics on Portugal 1965-77, Economics and Statistical Service, Statistical Bulletin, # 664, Washington, D. C., passim.
2. USDA-ERS, passim.
3. USDA-ERS, passim.
4. World Bank, Portugal Agricultural Sector Survey, Washington, D. C. 1978, passim.
5. World Bank, passim.
6. World Bank, passim. and Agra Europe, passim.
7. Agr Europe, passim.
8. Agra Europe, p. 25.
9. USDA-FAS, "Attache Report: Portugal," 3-10-81, p. 69.
10. USDA-FAS, p. 98.
11. Agra Europe, p. 56, 62 and 67.
12. Agra Europe, p. 16.
13. USAID, Agricultural Sector Assessment - Portugal, Washington, D.C., 1979, passim.

14. Agra Europe, p.17.
15. Agra Europe, p. 17.
16. Agra Europe, p. 19.
17. Agra Europe, p. 19.
18. USDA-FAS, p. 29.
19. Agra Europe, p. 18.
20. Cortez de Iobao, Antonio, Agricultura Portuguesa e Integração Europeia, Instituto Gulbenkian De Ciencia, Maio, 1979, p. 196.
21. Agra Europe, p. 17.
22. Cortez de Bobao, passim.
23. Agra Europe, p. 20.
24. Agra Europe, p. 44
25. Fox, p. 75.
26. Agra Europe, p. 45.
27. Fox, p. 40.
- 27a. Fox, p. 38,
28. Agra Europe, p. 47.
29. Fox, p. 40.
30. Fox, p. 40.
31. Fox, p. 44.
32. World Bank, passim, and Agra Europe, op.cit., passim.
33. Fox, p. 44.
34. Fox. p. 51.
35. Fox. p. 49.
36. Agra Europe, p. 50.
37. Agra Europe, p. 56.
38. Fox, p. 82.
39. Fox, p. 76.
40. Fox, p. 78.
41. World Bank, passim.

42. World Bank, passim.
43. Agra Europe, p. 63.
44. Fox, p. 92.
45. Fox, p. 94.
46. Agra Europe, p. 69.
47. Fox, p. 94.
48. Agra Europe, p. 68.
49. Fox, p. 83.
50. Fox, p. 83.
51. World Bank, passim.
52. Fox, p. 7.
53. Thompson, Robert L., "Purdue Trip Report", Department of Agricultural Economics, Purdue University, April 18-May 23, 1981, p. 6.
54. Fox, p. 8.
55. Fox, p. 9.
56. Fox, p. 9
57. Fox, p. 44.
- 58a. Fox, p. 54.
- 58b. Agra Europe, p. 49.
59. Fox, p. 55.
60. Fox, p. 80.
61. FAS, passim.
62. Fox, p. 92.
63. Fox, p. 96.
64. Fox, p. 83.
65. Fox, p. 88.
66. World Bank, p. 43.

CHAPTER III

1. USDA-FAS, passim.
2. USDA-FAS, "Attache Report - Portugal," 5/13/81, passim.
3. USDA-FAS, 3/10/82/ p. 10.
4. Agra Europe, p. 50.
6. Agra Europe, p. 50.
7. Agra Europe, p. 50.
8. OECD, Trade by Commodities-Market Summaries, Paris, France, for the years quoted, passim.
9. OECD, passim.
10. OECD, passim.

CHAPTER IV

1. Agra Europe, p. 35.
2. Agra Europe, p. 25.
3. USDA-FAS, 3/10/81, passim.
4. OECD, passim.
5. OECD, passim.
6. OECD, passim.
7. Agra Europe, p. 48 and World Bank, p. 122.
8. Agra Europe, p. 88.
9. McDonnel, Richard T., AGATT, "Memorandum," December 12, 1979.
10. Thompson, p. 8.
11. Thompson, p.8.
12. Agra Europe, p. 49.
13. Thompson, p. 10.
14. Thompson, p.10. World Bank passim, and AID, passim.
15. Thompson, p. 10.

16. Thompson, p. 11.
17. Thompson, p. 11.
18. Thompson, p. 16.
19. Thompson, p. 15.
20. McDonnel, Richard T., AGATT, "Memorandum, "
11/19/79
- 21 Thompson, p. 17.
22. Thompson. p. 17.
23. Thompson. p. 17.
24. Sampson, Gary P. and Alexander Yeats, "An Evaluation of the
Common Agricultural Policy as a Barrier Facing Agricultural
Exports to the European Economic Community," American
Journal of Agricultural Economics, Vol. 59, Number 1,
February 1977, p. 106.

BIBLIOGRAPHY

Agra Europe, The Agricultural Implications of EEC Enlargement - Part II: Portugal, Special Report No. 5, London, 1980.

Agra Europe, "C.A.P. Monitor," -- An Agra Europe Information Service of the EEC.

American Soybean Association, Soybean Blue Book, 1980 and 1981.

Commission of the EEC, Livestock Product Agriculture Markets-Prices, Brussels, October 1980.

Cortez Lobão, Antonio, Fernando Silva and Fernando Estacio, "Agricultural Policy and EEC Membership," Fundação Gulbenkian, Lisbon, 1979.

Cortez Lobão, Antonio, Agricultura Portuguesa e Integração Europeia, Instituto Gulbenkian De Ciencia, 1979.

Ferris, John N. "A Brief Survey of Techniques for Long-Range Projections and Forecasts in Agriculture," Staff Paper 76-39, Department of Agricultural Economics, MSU, 1976.

Hillman, J. S., Roger Fox, et al. Procalfer, University of Arizona, 1981

Keefe, Eugene, Area Handbook for Portugal, U. S. Government Printing Office, Washington, D. C. 1977.

Organization for Economic Cooperation and Development, Portugal - OECD Economic Surveys, Paris, France, 1979.

OECD, Trade by Commodities - Market Summaries, Paris, France, for years quoted.

McDonnel, Richard T., AGATT, 'Memorandum', December 4 and November 19, 1979.

Multinational Agribusiness Systems, Inc. Agricultural Assessment - Portugal, AID Contract # AID/PDC/SOC-C-0218, Washington, D. C., 1979.

Purcell, Wayne, Agricultural Marketing: Systems, Coordination, Cash and Futures Prices, Reston Publishing Co., Reston, VA, 1979.

Roma Fernandes, Carlos, "The Implications of Portugal's Accession to the European Communities on Trade with Third Countries," No publisher, no date.

Sampson, Gary P. and Alexander Yeats, "An Evaluation of the Common Agricultural Policy as a Barrier Facing Agricultural Exports to the European Economic Community." American Journal of Agricultural Economics, Vol. 59, Number 1, February 1977, p. 106.

Thompson, Robert L., "Portugal Trip Report," Department of Agricultural Economics, Purdue University, April 18 - May 23, 1981.

Tomek, William and Kenneth Robinson, Agricultural Product Prices, Cornell University Press, Ithaca, NY, 1981.

United Nations, Statistical Yearbook, 13th Issue, NY, NY, 1979.

USDA, Foreign Agricultural Service, "Agricultural Attache Reports," Various years.

USDA, Selected Agricultural Statistics on Portugal 1965-77, Economics and Statistical Service, Statistical Bulletin # 664.

U. S. Department of Commerce, U.S. Exports - Commodity By Country, Washington, D.C. 1979 and 1980.

World Bank, Portugal Agricultural Survey, Washington, D.C. 1978.

World Bank, Portugal: Current and Prospective Economic Trends, Washington, D. C. 1978.