THE HISTORY AND EXPERIENCE OF SPANISH, GREEK AND PORTUGUESE AGRICULTURE IN THE EUROPEAN UNION

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ABSTRACT

THE HISTORY AND EXPERIENCE OF SPAINISH, GREEK AND PORTUGUESE AGRICULTURE IN THE EUROPEAN UNION

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In this thesis, Greek, Portuguese and Spanish accession of European Union is investigated. Agricultural production, consumption and trade patterns of Greece, Portugal and Spain have changed by the full application of Common Agricultural Policy. The commodity composition of these countries experienced an adjustment, too. The production of vegetables, fruits, fish and other typical Mediterranean products have increased. The composition of consumption has moved from low-income elastic products to high-income elastic products. The agricultural trade direction of these countries has shifted to the European Union. Trade with neighbouring EU member states increased relatively faster than the trade increase with other members of the European Union. Most of the trade volume of these countries is with the Mediterranean countries of the European Union.

Key words: Spanish, Greek and Portuguese agriculture, EU Mediterranean enlargement.

ÖZ

İSPANYOL, YUNAN VE PORTEKİZ TARIMLARININ AVRUPA BİRLİĞİNDEKİ TARİHLERİ VE TECRÜBELERİ

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Bu tezde Yunanistan, Portekiz ve İspanya'nın Avrupa Birliği üyeliği incelenmiştir. Ortak Tarım Politikası'na tam geçiş, İspanya, Portekiz ve Yunanistan'ın üretim, tüketim ve ticaret kalıplarını değiştirmiştir. Bu ülkelerin üretim yelpazeleri de intibaktan geçirmiştir. Sebze, meyve, balık ve diğer tipik Akdeniz ürünlerinin üretimi artmıştır. Tüketim kalıpları gelir esnekliği düşük ürünlerden gelir esnekliği yüksek ürünlere kaymıştır. Bu ülkelerin tarımsal ticaretlerinin yönü Avrupa Birliğine yönelmiştir. Komşu olunan AB ülkesi ile ticaret, diğerler AB üyesi ülkeler ile olan ticaret artışına göre daha hızlı artmıştır. Bu ülkelerin ticaret hacimlerinin büyük bir bölümü AB'nin Akdeniz ülkeleri ile gerçekleşmektedir.

Anahtar Kelimeler: İspanya, Portekiz ve Yunanistan tarımı, AB Akdeniz genişlemesi.

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I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

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CHAPTER 1

INTRODUCTION

The objective of this thesis is to analyse Greece, Portugal and Spain, which are the three Mediterranean countries of the European Union excluding Italy and France in terms of agriculture. Those three countries reflect approximately similar characteristics about their agriculture. For instance, the production methods, rural demographics, composition of individual consumption and the trade structure is very similar in these countries.

Agriculture in these countries experienced various major steps through their histories. Production, trade and other indicators have changed massively with those historical facts. Mostly, those facts are common for those countries such as land reforms, the effect of World War II, Marshall Plan, totalitarian regimes and so on. But the most important fact in their history for all of these countries is the European Union accession.

The type of agricultural production reflects typical Mediterranean structure, which is the outcome of climatic conditions, geographical properties and political and historical backgrounds. These factors resemble within the Mediterranean region as it is like in Spain, Portugal and Greece. In order to understand, analyse and evaluate these countries not only about economical conditions but also for sociological and political dimensions, one has to figure out the agricultural structure of these economies. From this point of view, located in the same region with a strong maritime influence as well as economical, historical and political resemblance of Greece, Portugal and Spain directs academics to regard those countries together in their research and analyses. In this regard, this thesis looks at Spain, Portugal and Greece as a whole to analyse the net effect of the Common Agricultural Policy.

In this thesis, agricultural production, consumption and trade of those countries analysed with various aspects. In the chapter II, the general outlook of the agricultural tendencies of those countries explained with a descriptive method, which includes the outline of the EU accession process of Greece, Portugal and Spain.

Chapter III investigates Spanish, Greek and then Portuguese farming with a detailed numerical data series as well as figures and tables. The agricultural crop patterns, the factors of production in agriculture, commodity composition, external trade structure with EU and the rest of the world are the main subjects of the chapter III. As the main part of the thesis, Chapter III also indicates to consumption trends as well as to main historical events.

Combined nomenclature has been used to determine the agricultural commodity composition of the thesis as a whole. As it is known, the first 24 products in the nomenclature product list are the agricultural products. In this thesis, the 2 digit codes of the products have been used. Eurostat intra and extra trade data CDs are the main data source. With the help of those CDs, 24 different kinds of products' trade composition such as total agricultural imports and exports of Greece, Portugal and Spain for the year 2000 can be found.

The Food and Agricultural Organisation's database is another source of data in terms of long term agricultural production data, factors of production such as mechanisation and consumption of fertilisers, farm structure and demographics of Greece, Portugal and Spain.

The analysis starts with Spain then continues with Greece and lastly Portugal. The reason of forming this kind of sequence is not only Spain being the most advanced country in terms of agricultural production, consumption and trade but also it is the country which has been researched most intensively. There are a huge number of detailed studies and articles about agriculture in Spain.

There are only few studies and academic research published in English if on Greece and Portugal. However, even though there are not sufficient resources, there are some basic books and articles, which give the key information about the agricultural situation of Greece and Portugal.

CHAPTER II

MEDITERRANEAN AGRICULTURE: AN OVERVIEW

2.1 Structural Characteristics

The word of "Mediterranean" mainly refers to the sea that is located between the Continents of Europe and Africa. Apart from the geographical definition, Mediterranean has a wider meaning for the social scientists. It is the reflection of common values and heritage, but particularly the common life style of production, consumption and trade of the region itself.

The choice of crops, the cultivation methods, even the shape of land plots, and obviously the diet in these countries of Mediterranean reflects homogeneity. In this sense, there are plenty of reasons that affect the lives of people in addition to historical background, such as the physical condition of landscape and the climate around the Mediterranean coast. "The culture of south-western Europe can be conveniently referred as Euro Latin, for it dates back to common heritage under the

imperial Rome, a heritage which moulded so many of its institutional features, so much of its behaviour, from language and religion to the legal system (Tortella, C. G., 2000)."

2.1.1 Physical Structure

The physical condition of Mediterranean differs from the core Europe with its unique mountainous shape. Very high altitude differences, many coasts, bays and islands create the differentiation of the Mediterranean physical structure from central Europe. The mountainous shape constitutes one of the obstacles against production of agricultural goods. This unique shape determines the high transportation costs and stands as a difficulty on agricultural market formation of these countries' history. In this sense, the main reason lies behind the backwardness of these economies in the early 20th century can be related to physical structure as well as inadequate market organisation, less developed production, transportation and marketing infrastructure and so on.

High altitude differences also create difficulties for the irrigation. It is easy to dam water in the Mediterranean countries but it is a big impediment for constructing water transportation pipes and canals for less irrigated lands. Therefore, while west Europe achieving high levels of industrialisation with capital formation and labour transfers by the agricultural transformation in the 19th and 20th centuries, the periphery of Europe was coping with infrastructure construction for agriculture. That's why most of the economists believe that there is a link between modernisation and agricultural improvement. Countries, which were unable to "revolutionise" their

agriculture, remained undeveloped, and this is what happened to the Euro-Latin countries (Tortella, C. G., 2000).

2.1.2 Climatic Conditions

Climatic conditions are different in the south Europe than it is in the north as well as physical conditions. Relatively high temperatures constitute dry conditions for plants in the Mediterranean region. In this sense, coupled with tough physical conditions, the climatic fluctuations cause high levels of soil erosion. Inadequate precipitation levels boost the need for irrigation infrastructure. But the unique climate also enables specific conditions for various Mediterranean agricultural products such as, fruit and vegetables, tobacco, olive and so on.

2.1.3 Political History

The political history of Mediterranean is another aspect that affects production, consumption and trade patterns as well as climatic conditions and physical structure. The invasions of Romans and Islamic Moors, endless wars within Europe or at the territories in South America and Africa in the imperial ages created the roots of 20th century volatile political, economical and social structure of Greece, Portugal and Spain.

As explained briefly above, there are too many factors against agricultural production in the Mediterranean basin. That's why social scientists refer to identify Europe as centre and periphery not only in political terms but also in social and economic terms, too. Geography and culture reinforce each other as obstacles to modernisation process in most of the Mediterranean nations.

2.2 Greece, Portugal and Spain: Periphery of EU

Greece, Portugal and Spain are the countries, which have similar economies in terms of production, consumption and trade. Moreover, the structures of the economies reflect resembling characteristics such as the shares of agriculture, industry and services over GDP. In addition to these, the social characteristics are similar, for example, the regional disparities, income gaps between the rural and urban societies, infrastructure inadequacies.

TABLE 2—1: Agriculture in the Economy (2001)

Country	Share of agriculture in the GDP (GVA/GDP) (%)	Share of imports of food and agricultural products in imports of all products (%)	Share of exports of food and agricultural products in exports of all products (%)	External trade balance in agricultural products (Mio EUR)
Greece	6,7	5,4	21,8	686
Spain	3,6	8,2	10,4	-840
Portugal	2,4	11,8	8,6	-825
EU 15	1,7	6,0	6,1	-199

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

Interestingly, the 20th century political histories of these countries are also similar. The strict administrations manipulated by Franco, Salazar and the Colonels of Greece mainly constituted the highly volatised political conditions of 20th century in Greece, Portugal and Spain. These long-standing authoritarian regimes prevented Spain and Portugal –and Greece- from joining European institutions and kept all countries on the fringe of the integration process that began in Europe after the World War II (Royo, 2002). After the creation of democratic regimes in these countries, and as a result of the new international environment, these countries moved towards the European membership process.

2.3 Mediterranean Enlargement and CAP

Common Agricultural Policy of the European Union is the most complex and coordinated policy of the Community. More than 60% of EU documentation is related to the agricultural policy of the EU. In this sense, it is not easy for a country to apply the Community's agricultural policy just as the start of the membership. Countries that have infrastructure problems with relatively large agricultural population produce fears among other members. For example, advanced economies of the EU are threatened with high budget contributions, too. At the same time, applicant country's agricultural producers are threatened with increased competition from the highly protected and advanced agricultural producers of the Community.

However, European Community reached a significant decision on accepting Greece in 1980, Portugal and Spain in 1985 to the EEC. The decision was more of a political nature. In order to construct its new policy on Mediterranean, European Community accepted Greece, Portugal and Spain. Mediterranean enlargement is a historical step in the world history, which reflects a new era for Europe and for the World. In the 1980s the European Community was in a reformation movement of deepening and widening. In this sense, European Community was reforming itself with the changing international environment. Mediterranean enlargement was one of the stages of this new policy of the European Union.

European Community organised this movement of reformation in the Single European Act in 1985. The Community constituted strict timetables and paths of this reorganisation movement. Single European Act resulted in the Maastricht Treaty in 1992, which means the achievement of full economic integration of European Union.

The Maastricht Treaty is the completion of economic integration with the creation of European Central Bank and the introduction of Euro as the main exchange unit of the European Communities. In this sense, new areas of integration have been identified such as the Common Foreign and Security Policy, and Judicial and Home Affairs: widening.

EC started to deepen its policies to achieve a stronger participation by the society. Today, there are too many EC regulations on almost every national policy like energy, transportation, environment, social policies and so on.

As briefly explained above, European Community was in at the stage of reshaping and redefining its role not only among European Communities but also in the international environment. For this reason, Spain, Portugal and Greece found themselves in a dynamic European Union structure, which was trying to identify its future role and shape in the world arena. Therefore, Mediterranean enlargement should be evaluated with these developments within the Community and at the international level. In order to analyse the agriculture of Greece, Portugal and Spain as a member of European Union, the international trade developments in the 1990s has to be considered.

CHAPTER III

AGRICULTURE OF SPAIN, GREECE AND PORTUGAL

Agriculture and its relative importance in Greece, Portugal and Spain differ from the core countries of the European Union. This divergence has various reasons such as, the physical conditions of Mediterranean region, the unique demographic structures of Greece, Portugal and Spain, the special characteristics of economic transformation in the 20th century. In this sense, before starting the quantitative analyses, it is important to state the sole agricultural characteristics of these countries.

3.1. Spain

As it is located in the southwest of Europe surrounded with Mediterranean Sea and Atlantic Ocean, Spain is a typical form of Mediterranean identity. The evolution of Mediterranean identity is not only a form of political, social and economical history of the nations neighbouring Mediterranean Sea, but also it is a form of common physical and environmental condition of Mediterranean basin. In this sense, it is a common identity of Spaniards, Portuguese, Italians, Greeks and Turks as well. Agriculture is one of the common areas for Mediterranean countries that reflect homogenous type production, consumption, land use, tastes.

3.1.1. Physical and Historical Background of Spanish Agriculture

The Spanish agriculture may be analysed in two different periods that diversifies in terms of total production, consumption, trade, and methods of production. The type of production and consumption before 1950s can be identified as traditional, whereas the post 1950 period up to now is a transitional period in every aspect.

3.1.1.1. Pre-1950s: Crisis, Famine and Protection

Spanish agriculture before 1950s performed low and fluctuating yields with inadequate form of agricultural markets and poor levels of nutrition. Most of the scholars relate the issue of development and transition with the productivity of agriculture (Tortella, 2000). Therefore, as an input market for various industries, as a labour supply for the economy and as the source of energy for the human life,

Spain's backwardness in the pre 1950 period can be related to the underdeveloped agriculture.

One of the main reasons of agricultural backwardness of Spain is the unique shape of the landscape, which consists of high altitude differences. Spain is the second highest country in Europe after Switzerland. It is not easy to form a sustainable agricultural production infrastructure in countries that have physical obstacles. First of all, the production itself is costly when compared to central European countries. To organise labour, to supply water, to transport the products into the markets creates the basic obstacles. It is easier to dam water in countries that have high altitude differences but to build pipelines, to transfer water into the less irrigated areas is not as easy as constructing dams.

Rigid transportation infrastructure was another factor of agricultural backwardness of Spain in the pre-1950 period. As previously mentioned, agricultural products are not only food for the population but also raw material for the various industries. In this sense, agricultural underdevelopment has a big correlation with the whole economical backwardness and transformation. For example, the composition of consumption in underdeveloped countries consists of income inelastic products such as cereals, vegetables; whereas these are high-income elastic products such as meat, poultry and diary in developed countries. As a matter of fact, the low agricultural productivity kept the diet of the average Spaniard at about the subsistence level, with little improvement until well into the 20th century (Tortella, 2000).

In addition to previous infrastructure problems, there are other reasons, which left the Spanish agricultural productivity below the European average in the 19th century like rigid land property structure. In the 19th century, there were three main landowners in Spain. Mortmains are properties, which cannot be sold. This kind of indivisible land went from oldest son to oldest son. Another big landholder is the Church and like mortmain's, their land is indivisible and not subject to trade. Municipality land is another kind of special property protected by powerful local residents against the movements to make the land available for the poor peasants. As a result of this rigid kind of land ownership of Spain, land reform was always on the agenda in the 20th and 19th century. But most of the attempts had no impact on landownership and production levels.

In the 19th century, Spain attended to make various land property reforms like the other Europeans did in the past such as the dissolution of monasteries 16th century England and 18th century land reform of France after the revolution. But apart from the English and French experiences, Spanish land reform "decamortizasiôn" has different expectations rather than fair land distribution or increasing productivity. To be precise, disentailment was conceived as a fiscal measure, not as an element of agricultural reform; it was intended to restore balance to the national Treasury by paying off the national debt, rather than to redistribute land to poor rural peasants (Tortella, 2000).

Another obstacle for Spanish agricultural productivity was high tariff protection on agricultural trade in 19th century. Agriculture was highly protected by the political parties in order to stabilise social situation of Spanish farmers. As a

result of those restrictions, Spain couldn't utilise low agricultural prices of other nations like Great Britain, France and United States. In this sense, Spain also couldn't specialise on advanced products like fruits and vegetables. In a way, French, Great Britain and United States protected their domestic market against Spanish agricultural products by high tariffs. Tariffs are two-edged weapons, and in the Spanish case both edges of the sword served to oppose agricultural modernisation (Tortella, 2000).

3.1.1.2. Post-1950s: Evolution of Modern Agriculture in Spain

Underdevelopment and backwardness of Spanish agriculture in the 19th century started to transform itself with various state interventions and institutionalism held by different administrations. But traditional political treatment or protection of agriculture and farmers in Spain were always in the agenda until the last decade of 20th century.

One of the main problems for agricultural production in Spain in modern terms was the lack of financial resources or credits for producers. From the early years of 20th century, Spain formed number of institutions to make financial resources available for agriculture. In modern terms, in 1925 National Agricultural Credit Service was the first established mechanism to make loans for agricultural operators. It was rather an office under the authority of Ministry of Development than a bank. Because of the scarce resources and complicated policies it didn't work properly until 1962. In 1962, it converted into Banco de Crêdito Agrîcola (Tortella, 2000). In addition to this, various other groups specialised in agricultural credit such as saving

banks, rural banks, and credit cooperatives and private banks whose branches have little by little reached into agricultural areas.

At the beginning, it was not easy for these kinds of institutions to work efficiently in a country like Spain where the sources of information were inadequate because of the huge land and disproportional form of urbanisation. For most of the observers Spain is typical kind of human desert where most of the population lives in cities rather than in little villages. These institutions couldn't achieve their basic goals because of sociological kind of difficulties as well as physical obstacles like high transaction costs. But, creating institutions at least for creating the right information and collecting the right data was a success.

The problem of agricultural credit has been gradually resolved by the economic transformation occurred in Spain. More sources became available for agricultural production in the second half of the 20th century especially from the private sector. The role, which had been carried out by the state institutions were fulfilled by the private banks, saving banks and rural banks. Agriculture as a sector of capital deficiency turned out to a net capital importing sector in the second half of the 20th century.

It can be seen from the data of table 3-1 and in more clearly in figure 3-2 agricultural production has moved into a different era particularly from 1950s onwards. It is a known fact that agricultural development doesn't only mean increase in output. In order to identify a real change or transformation in agriculture, the

composition of production and, for sure, the composition of consumption should be observed as well.

TABLE 3—1 Agricultural Output, Productivity, and Yields, 1900-1980

Year	Output [a]	Productivity [b]	Yield [c]	Agricultural output as % of GDP
1900	4408	846	247	35
1910	5392	1050	281	35
1920	6688	1446	314	39
1930	7540	1843	359	29
1950	7880	1472	404	31
1960	15754	3354	723	21
1970	18984	6416	916	11
1980	24503	14532	1256	7

a. Entries are in millions of pesetas at 1919 prices: except those for 1900 and 1950, they are nine-year averages, (at 1910 prices)
b. In 1910 pesetas per worker, (at 1910 prices)
c. In 1910 pesetas per cultivated hectare: the 1920 figure quoted is actually for 1922; that for 1930 is actually for 1931, (at 1910 prices)
Source: Tortella, 2000

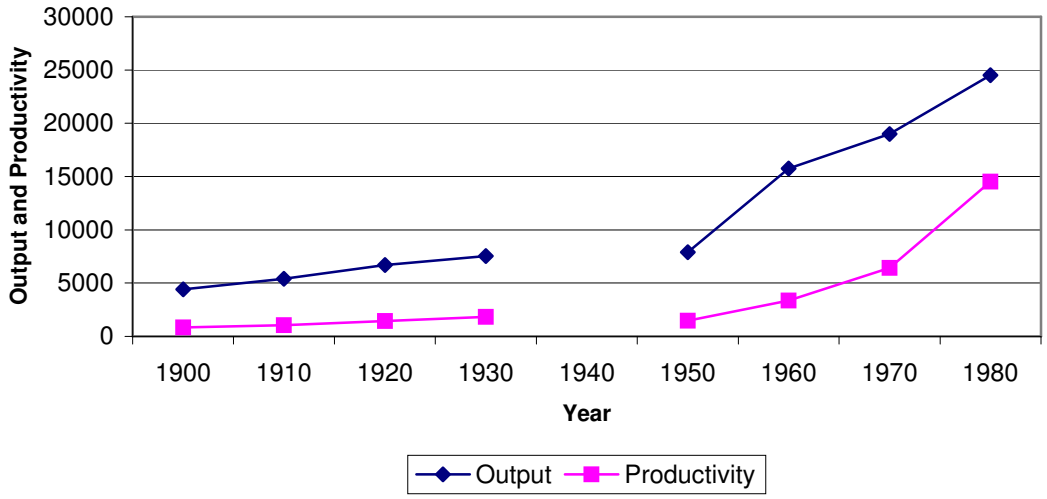

FIGURE 3-1 Agricultural Output and Productivity in Spain, 1900-1980

Agricultural transformation after 1950s in Spain was not different than any other transformation process formed in a developing country. Increase in agricultural

output includes the change in crop pattern. By the time, the share of traditional products like wheat in total agricultural production decreased. To put it more clearly, there is now a tendency towards capital-intensive products in countries of economic transformation. Consumption of capital-intensive products like meat, corn, milk and fish started to increase from 1950s, too.

One of the main components of the increase in output rapidly in a country like Spain is the investment to improve agriculture infrastructure such as irrigation. This can be identified as a "technical reform" in agriculture, which is the improvement of rural situation without changing the property structure. In this sense, Spain started to construct its water policy by building dams and irrigation schemes in 20th century. Apart from the high resistance of big landowners to improve irrigation structure, Spanish authorities achieved very high increase in reservoir capacity and amount of irrigation. Between 1940 and 1970 Spain's reservoir capacity had increased tenfold, from 3,6 to 36,9 million cubic meters and further to 42 million cubic meters by 1987.

Irrigation did not increase continuously because of the tough physical conditions of Spain. Land under irrigation went from 1,4 million hectares to about 2,2 million hectares in 1970 and 3,1 million in 1987. The irrigated area of Spain went from 7,4% in 1970 to the total 15,3% in 1987. It can be seen that the land under irrigation nearly doubled in 20 years and this is one of the main reason of the increase in agricultural production of Spain in the second half of the 20th century.

The modernisation of agriculture in Spain in the 20th century can be measured by the mechanisation levels, especially by the number of tractors and harvesting

machines. The number of tractors increased from 4000 to 885000 between 1932 and 2000. Harvesting machinery achieved a massive increase like tractors at the same period. The highest growth rate of the number of harvesting machines and tractors were observed between 1961-1971, which are 488% for harvesting machines, and 297% for tractors.

TABLE 3—2 Mechanisation of Spanish Agriculture

Years	Number of Tractors	% Growth	Number of Harvesting Machines	% Growth
1961	71077		5784	
1971	282371	297	33991	488
1981	548080	94	42361	25
1991	755743	38	48821	15
2000	885000	17	51500	5

Source: www.fao.org

The growth of machinery working in agricultural production is a very important step for producers. Also the improvements in agricultural production have an indirect effect on the level of industrialisation in the big cities. In this regard the investment made on agriculture with projects and technological improvements supports the total modernisation of a nation with its help of industrial development, at least in the early stages of industrialisation.

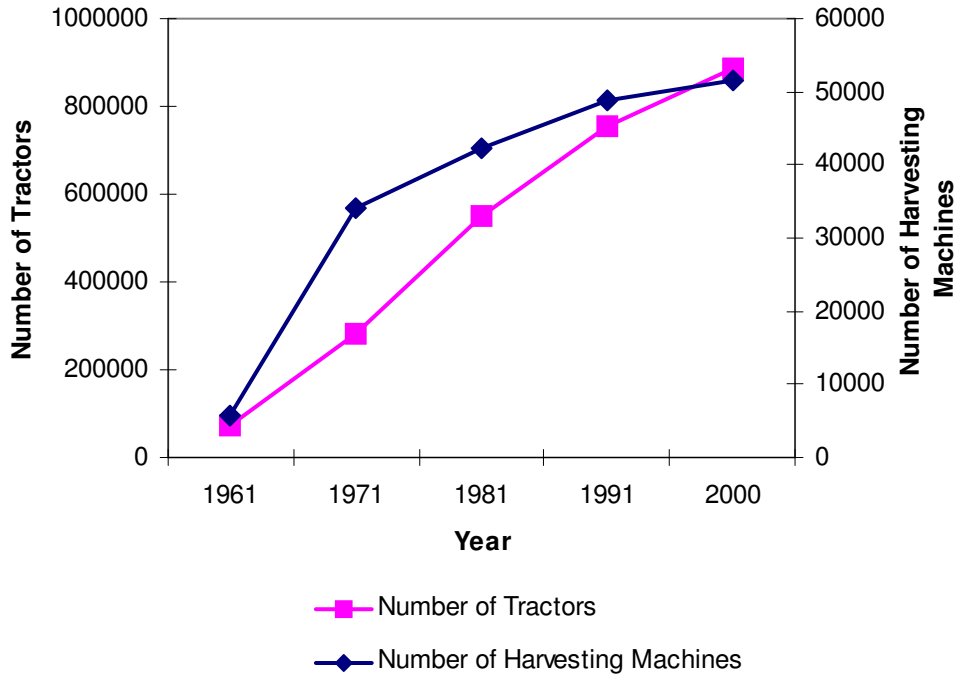

FIGURE 3-2 The Number of Tractors and Harvesting Machines in Spain

Agricultural transformation in the second half of the 20th century can be measured from the use of fertilisers as well. Like tractors and harvesting machines, the use of fertilisers increased enormously after 1960s. Agriculture by these kind of technological applications in Spain became more advanced and technically improved. As we can see from the figure 3-3, the total consumption of fertilisers in Spain increased rapidly between 1961 and 2000.

TABLE 3—3 Consumption of Fertilisers in Spain, 1961-2000

Years	Total Fertilisers	Nitrogenous Fertilizers	Phosphate Fertilizers	Potash Fertilizers
1961	729856	327178	307978	94700
1971	1395000	667000	466000	262000
1981	1377380	818318	340320	218742
1991	1881742	998705	501655	381382
2000	2149400	1113700	568100	467600

Source: www.fao.org

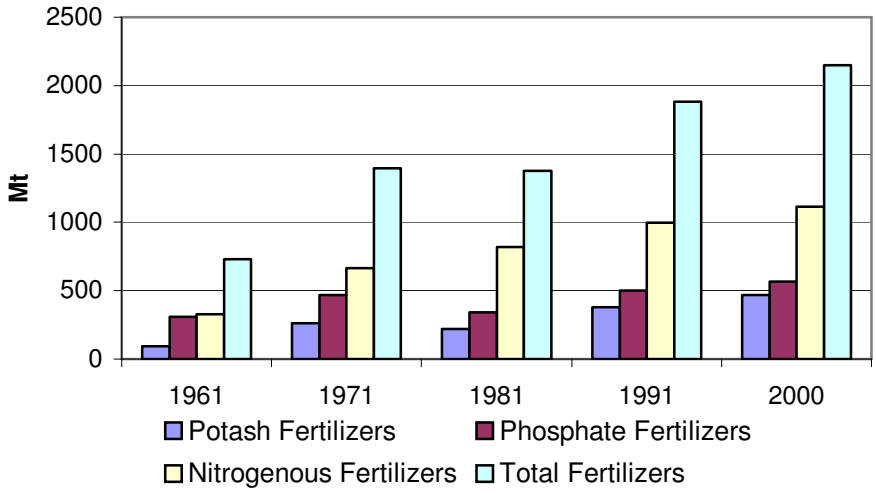

FIGURE 3-3 Increase of Fertiliser Consumption Between 1961-2000 in Spain

This kind of technical improvement enabled productivity growth and food quality development for Spanish agriculture. Capitalist agriculture is a new kind of agricultural production, which is production for market in modern terms rather than production for self-sufficiency.

As mentioned earlier, Spain's legitimacy in the international political arena had a very big impact on economical transformation. As an outsider for 50 years after the totalitarian regime of Franco, Spain got the chance to open its economy and society to the world. By this important development, the share of agriculture in Spanish economy declined as expected. So, agricultural producers organised and reallocated their resources to the new conditions of Spanish economy.

Modernisation and transformation process of Spain in the 20th century came to its peak phase by the European Union membership in 1986. From that time on, Spain's domestic issues transferred into the Union's agenda. If we consider the Union as an ongoing and transformation process itself, Spain got the chance to

upgrade its domestic policies with the Union's fresh and reforming ideas. In this sense, Spain created new objects in a wider and deeper market of the European Union.

Agriculture of Spain adjusted to the Common Agricultural Policy of European Union in a transitional period Greece and UK. It was necessary to have a transitional period for a country like Spain, which lacked competitiveness and advanced agricultural firms. In addition to that, the application of CAP itself is a long and exhausting process because of the detailed structure of market intervention and price policy.

3.1.2. Spanish Agriculture: Current Situation

Spain today is the 5th populated country of the European Union with 40 million inhabitants and the second largest area after France. The share of agriculture in GDP is 3,6% which is two times higher than European average. If we look at the share of specific agricultural products in EU's whole agricultural production then it can be seen that Spain concentrated on olive oil, fresh fruit, rice, sheep and goats, fresh vegetables, pigs and maize.

3.1.2.1. The Role of Agriculture in the Economy

Spanish economy mainly consists of services and industry. The share of agriculture in GDP has been in a gradual decline. It can be seen from the Table 3-4 that, although economically active labour force of Spain has been growing, the share of agricultural labour force has been gradually declining since 1950s.

TABLE 3—4 Spanish Agricultural Labour Force, 1950-2000

Years	Total Economically Active Labour Force (1000)	Total Agricultural Labour Force (1000)	Agricultural Labour force (% of Total)
1950	10884	5618	51,6%
1960	11776	4844	41,1%
1970	12744	3696	29,0%
1980	14019	2585	18,4%
1990	15953	1892	11,9%
2000	17575	1293	7,4%

Source: www.fao.org

This gradual decline of agricultural employment in Spain brought its problems and, solutions together. Because of the high rates of emigration from agriculture to other sectors of the economy, agricultural producers started to meet their labour needs from accepting immigrant workers mainly from North African countries. 15,2% of the legally resident non-EU workforce in Spain was employed in agriculture in 1986, with this rate going up to 31,6% for Africans (Hoggart K., Mendosa C., 1999) .

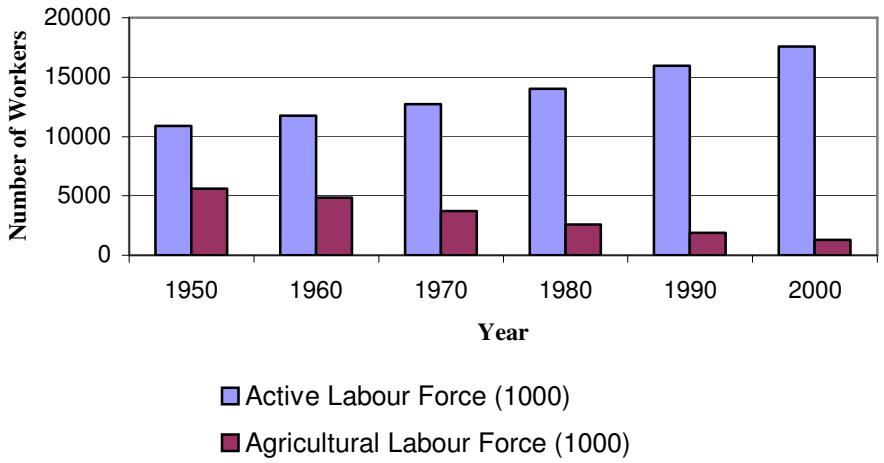

FIGURE 3-4 Active Labour Force and Agricultural Labour Force

3.1.2.2. Agricultural Production and Consumption in Spain

Spain is one of the major producers of Mediterranean crops in the European Union. The share of Spanish agricultural products in the total EU agricultural product trade has been growing gradually since 1990s. 70% of agricultural production value of Spain consists of fresh fruits, fresh vegetables, pigs, milk, cattle, olive oil, sheep and goats and poultry. Especially fresh fruits, fresh vegetables, pigs, milk, cattle and olive oil production and consumption increased rapidly in the second half of the 20th century.

TABLE 3—5 Share of Products in Agricultural Production (Spain)

Products	Percentage (%)
Fresh fruit	16,04
Pigs	14,05
Fresh vegetables	12,04
Milk	7,03
Cattle	5,86
Olive oil	5,48
Sheep and goats	4,59
Poultry	4,47
Wheat	3,67
Maize	2,76
Barley	2,38
Eggs	2,00
Wine and must	1,92
Oilseeds	1,59
Sugar beet	1,04
Rice	0,80
Oats	0,40
Tobacco	0,34
Rye	0,08

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

Table 3-6 indicates to the rapid increase of primary crops between 1961 and 2002. In spite of this increase in the amount of production, the area harvested

remained constant in that period. In this sense, yields have been increasing with the mechanisation, fertilisers and other factors.

TABLE 3—6 Primary Crop Production between 1961-2002, Spain

Year	Vegetables Melons, Total Production (Mt)	Wheat Production (Mt)	Fruit excl Melons, Total Production (Mt)	Maize Production (Mt)	Barley Production (Mt)	Oil of Olive (Mt)
1961	6.057.163	3.438.000	7.134.091	1.066.800	1.743.700	360.768
1971	6.780.564	5.449.700	8.854.306	2.056.300	4.784.700	343.900
1981	8.603.547	3.408.500	11.369.436	2.156.800	4.757.600	299.280
1991	10.587.413	5.467.700	12.787.577	3.233.250	9.262.486	593.000
2002	12.009.800	6.782.900	15.431.959	4.394.500	8.332.900	829.500

Source: www.fao.org

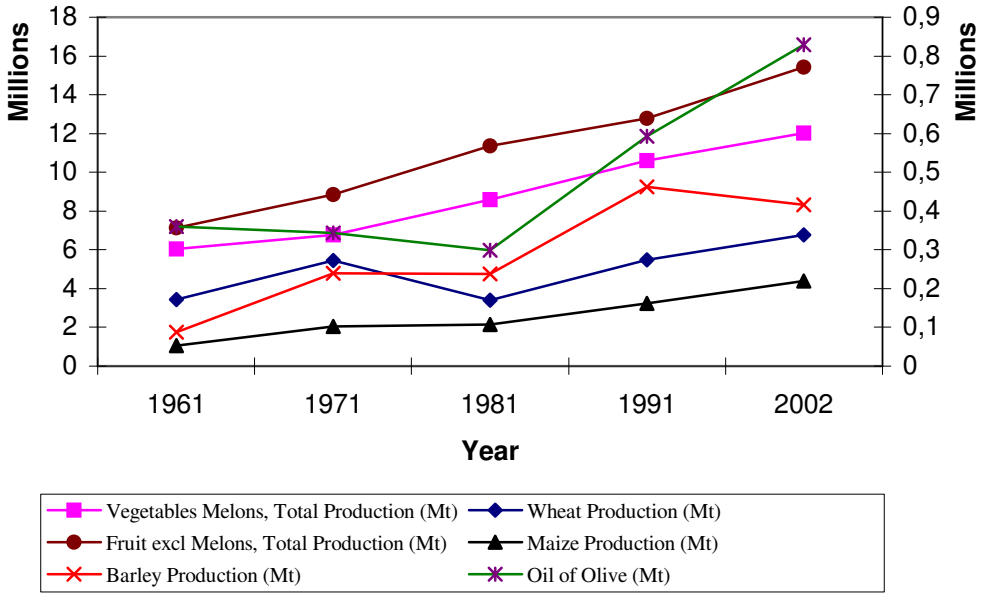

FIGURE 3-5 Increase in Production of Primary Crops, Spain 1961-2002

Table 3-7 indicates that all of these crops' harvested area except barley's remained constant or reduced during the last decades.

TABLE 3—7 Area Harvested for Primary Crops between 1961-2002, Spain (Ha)

Year	Barley	Fruit excl Melons, Total	Maize	Vegetables & Melons, Total	Wheat	Olives
1961	1450000	2137780	446700	344532	3890605	-
1971	2371300	2009680	543500	409603	3655600	-
1981	3507900	2206623	428700	463862	2635400	2,045,000
1991	4412800	2021393	484800	475912	2223400	2,074,000
2002	3100200	1749470	456700	368600	2401800	2,300,000

Source: www.fao.org

The sharpest decrease of the area harvested among these crops is wheat. The area harvested for wheat declined nearly 40% between 1961-2002. In spite of this decline, wheat production increased nearly 100% during 1961-2002.

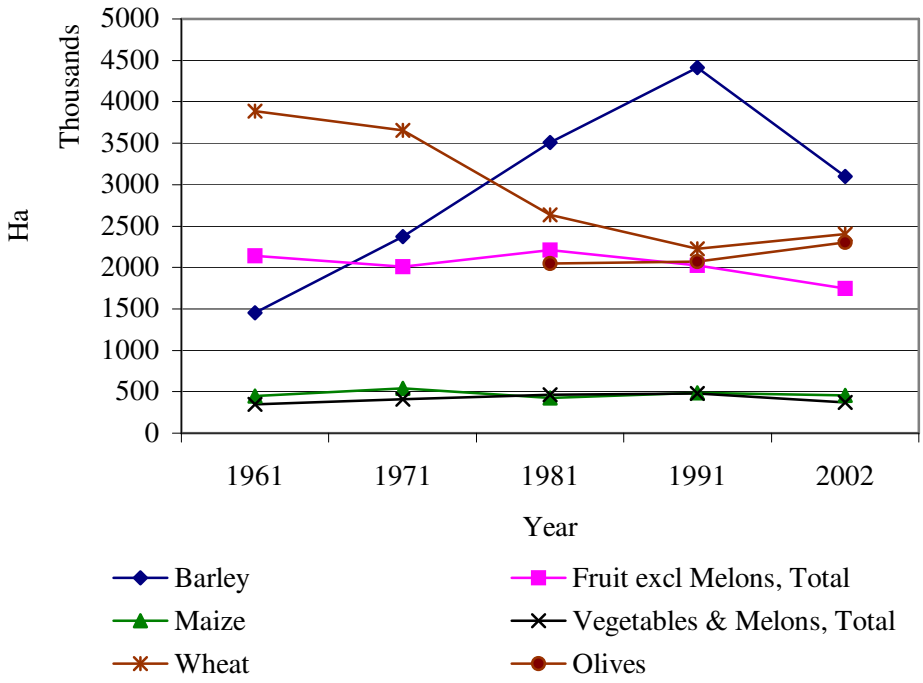

FIGURE 3-6 Area Harvested for Primary Crops in Spain, 1961-2002

As a result of these developments, the total yield of primary crops of Spanish agriculture increased rapidly in the second half of the 20th century. Table 3-9 indicates that the yields of primary products between 1961-2002.

TABLE 3—8 Yields of the Primary Crops in Spanish Agriculture, 1961-2002

Year	Vegetables & Melons, Yield (Hg/Ha) (X10)	Wheat Yield (Hg/Ha)	Fruit excl Melons, Yield (Hg/Ha)	Maize Yield (Hg/Ha)	Barley Yield (Hg/Ha)	Olives (Hg/Ha)
1961	17,581	8,837	33,37	23,882	12,026	-
1971	16,554	14,908	44,06	37,834	20,178	-
1981	18,548	12,934	51,52	50,31	13,563	7,437
1991	22,247	24,592	63,26	66,692	20,99	14,383
2002	32,582	28,241	88,21	96,223	26,879	18,712

Source: www.fao.org

Assuming 1961 as 100, the trend will be clearer to make observations about the real change of yields between 1961 and 2002. Table 3-9 indicates the change of yields between 1961-2002.

TABLE 3—9 Yields of the Primary Crops in Spanish Agriculture, 1961=100

Year	Vegetables & Melons, Yield (Hg/Ha)	Wheat Yield (Hg/Ha)	Fruit excl Melons, Yield (Hg/Ha)	Maize Yield (Hg/ Ha)	Barley Yield (Hg/Ha)	Olives (Hg/Ha)
1961	100	100	100	100	100	-
1971	94,2	168,7	132,0	158,4	167,8	-
1981	105,5	146,4	154,4	210,7	112,8	100
1991	126,5	278,3	189,6	279,3	174,5	193,40
2002	185,3	319,6	264,3	402,9	223,5	251,61

Source: www.fao.org

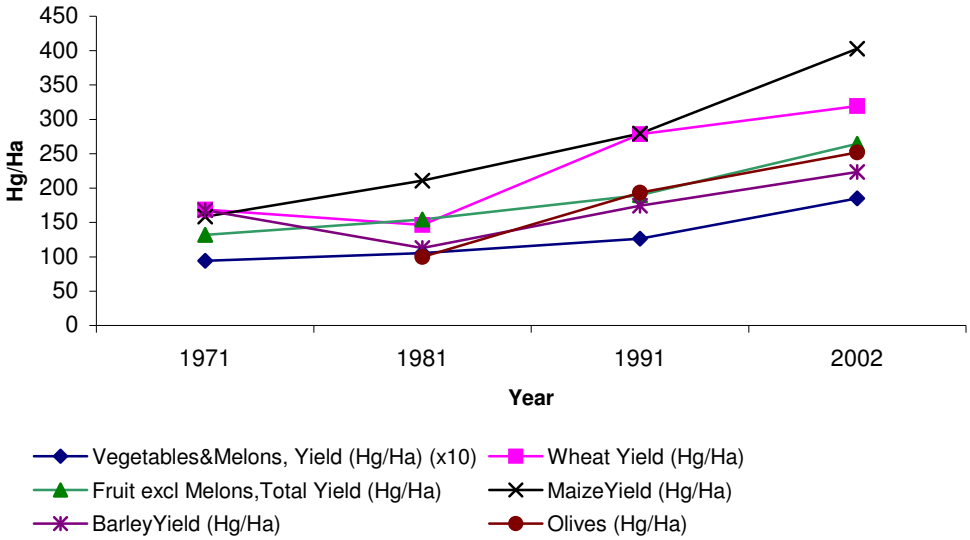

FIGURE 3-7 Yields of Primary Crops in Spain, 1961-2002

Between 1991-2002, the yields of the vegetables and fruits increased faster than all other crops. This is directly linked with the EU membership.

Spanish agriculture made full adjustment to the Common Agricultural Policy after a transitional period of 10 years. In this regard, Spain fully took part within the CAP in the 1990s and fruits and vegetables are the main export products of Spanish agriculture to the European Union. The productivity of fruits and vegetables increased with the reallocation of resources in the agricultural production during the 1990s.

The number of live animals and livestock production and consumption in the second half of the 20th century reflects the same trend with the crop production and consumption in Spain. The number of live animals increased rapidly with the development of production and consumption in Spain. Crop production improvement reduced the cost of production of live animal fodder and supply started to increase

after 1950s. Moreover, the composition of consumption in Spain has changed towards high-income elastic products such as meat and livestock.

Spanish live animal and livestock growth is a result of both supply and demand factors. Furthermore, Spanish accession to European Union liberated Spain's domestic agricultural market for the advanced producers of the North European countries. Imports from those advanced countries at the transition period increased and as a result of this, Spanish consumers got the chance to get more nutritive products at cheaper prices.

TABLE 3—10 Primary Live Animals and Production of Meat and Milk in Spain

Year	Cattle	Sheep & Goats	Pigs	Meat, Total Production	Milk, Total Production
1961	3.640.342	25.921.824	6.032.000	659.863	3.550.914
1971	4.235.000	21.079.008	6.917.000	1.465.418	4.948.635
1981	4.531.084	17.057.000	10.692.000	2.810.960	6.592.221
1991	5.126.000	27.700.000	16.001.000	3.603.188	7.289.305
2002	6.411.000	27.414.658	23.857.776	5.072.239	7.056.000

Source: www.fao.org, 1961-2002

It can be seen from the table 3-10 that all of the number of heads of live animals increased between 1961-2002. Mainly the number of pigs and cattle and therefore total meat production increased rapidly in the 1990s. Considering the competitive power of north European countries' in live animal and livestock production, Spanish live animal and livestock production growth in the 1990s can be considered as a massive success.

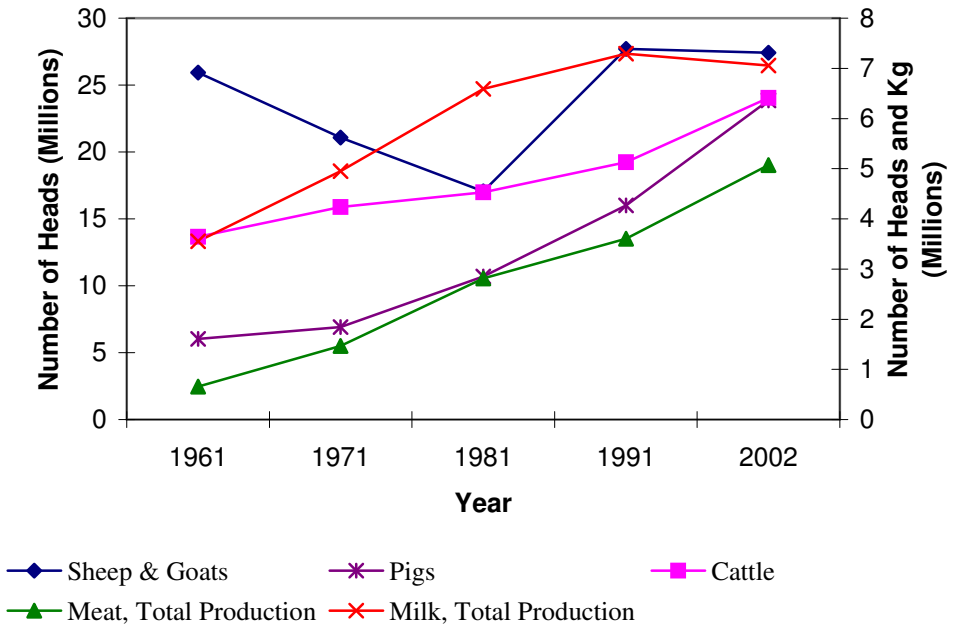

FIGURE 3-8 Population and Production Change for Live Animals and Livestock

Live animal and livestock production growth in Spain can be observed more clearly from the figure 3-8. Especially 1991-2002 period is more important in terms of European Union membership and participation into the Common Agricultural Policy. As it can be seen from the figure, the general trend is upward and the rate of increase is higher than the past periods, particularly between 1991-2002.

3.1.2.3. Farm Structure in Spain

Farm structure in Spain reflects typical Mediterranean characteristics as well. The number of holdings under 8 ESU (European Size Units) is the highest but their share in total output is the smallest. In this sense, it can be said that family farming is still present in Spanish agriculture. Even though they are not the major producers of agricultural products, they have more importance in the European agenda in terms of reducing regional disparities.

Farms that have more than 100 ESU represent the smallest number in Spanish agriculture. But as mentioned earlier, these farms are the most productive units of Spanish agriculture and they have the biggest output amount compared to other types of farm sizes.

TABLE 3—11 Economic Size of Holdings in European Size Units (ESU), Spain

Economic Size of Holding in European Size Units ESU	Number of Holdings in the FADN Field of Observation		Area (Ha UAA)		Total Output	
	1999	2000	1999	2000	1999	2000
Small (< 8 ESU)	292709	305836	8,73	8,92	12,54	13,38
Medium small (8 - 16 ESU)	149893	153495	22,98	22,10	24,65	26,49
Medium large (16 - 40 ESU)	126235	128034	51,17	50,20	46,61	50,33
Large (40 - 100 ESU)	41180	41410	109,20	106,26	94,53	102,59
Very large (> 100 ESU)	8821	9568	233,09	238,39	238,99	291,86
All sizes	*618838*	*638343*	*425,17*	*425,87*	*417,315*	*484,64*

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

In table 3-11, the holdings considered as very large which have the size over 100 ESU also represent the highest output level. Even though they represent the 1% of the total number of holdings, they use 50% of the total arable land and they produce 60% of total output. In this sense, it can be said that Spanish agriculture is becoming capital-intensive type of business along with its traditional low-income family farming methods. Family farming and labour-intensive methods are not the problem of agriculture itself. In a way, it is more related with the development of industry and services and their labour demand from the countryside.

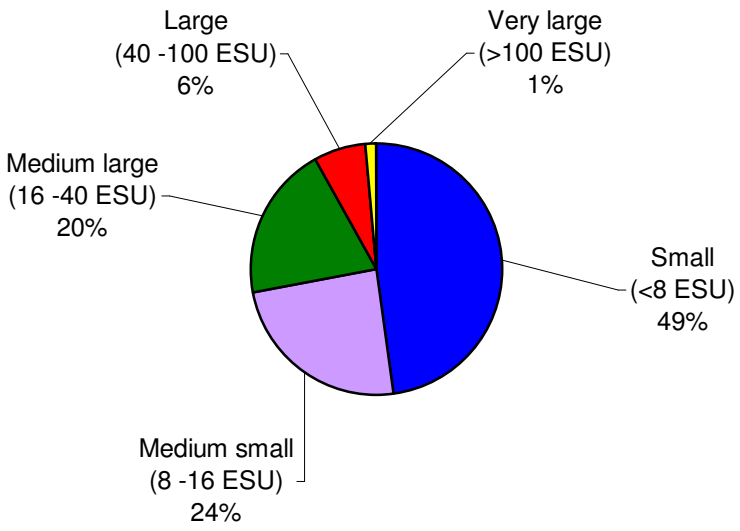

FIGURE 3-9 Number of Holdings in Spanish Agriculture, 1999

TABLE 3—12 Percentages of Types of Holdings in Spanish Agriculture, 2000

Economic Size of Holding in European Size Units ESU	Number of Holdings in the FADN Field of Observation	Area (Ha UAA)	Total Output
Small (< 8 ESU)	47,9%	2,1%	2,8%
Medium small (8 - 16 ESU)	24,0%	5,2%	5,5%
Medium large (16 - 40 ESU)	20,1%	11,8%	10,4%
Large (40 - 100 ESU)	6,5%	25,0%	21,2%
Very large (> 100 ESU)	1,5%	56,0%	60,2%
All sizes	100,0%	100,0%	100,0%

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

As it can be seen from the figure 3-10 80% of the arable land is managed by the large and very large holdings in Spain. The situation is the same for output too; the large and very large firms produce 80% of the agricultural output.

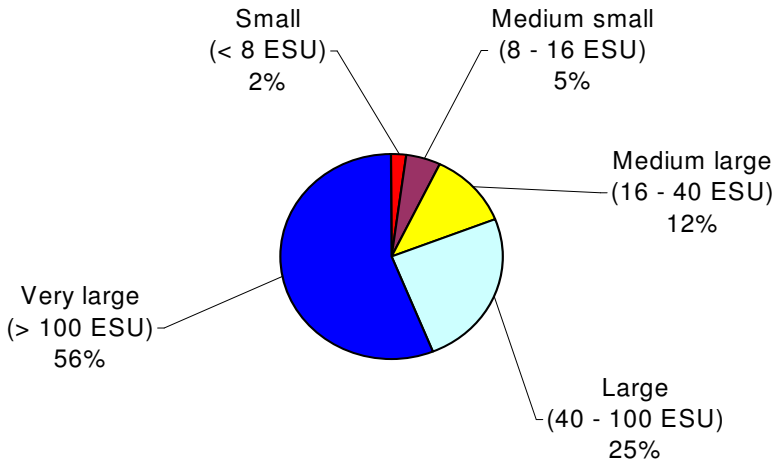

FIGURE 3-10 The Arable Land Used by Agricultural Holdings in Spain, 2000

If we compare the number of holdings and the amount of output they produce in terms of the sizes of holdings in Spain, then it is evident that even though the number of small and medium holdings represents the 75% of the holdings, they produce only 8% of the total agricultural output.

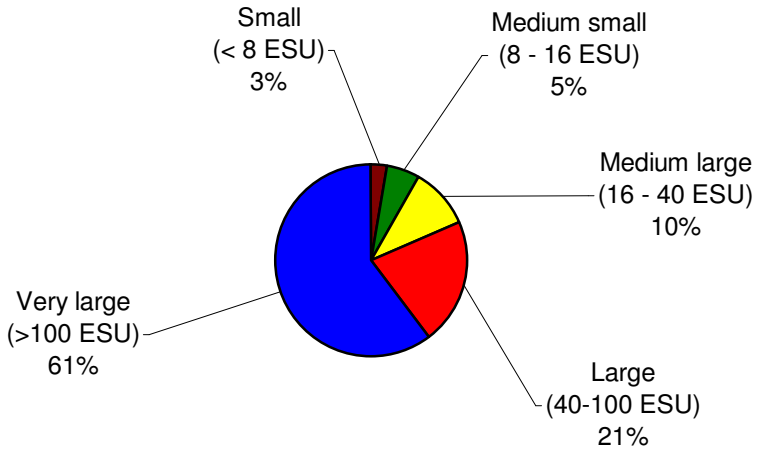

FIGURE 3-11 Total Output Per Holding in 1000 ECU-EUR in Spain, 2000

Blue and red areas in figure 3-11 represent the holdings over 40 ESU and they produce over 80% of the total output of Spanish agricultural production. Therefore, we can say that family type of farming is no longer dominant production method in Spanish agriculture. Spanish agro-industry has achieved a big success during the last 20 years in terms of production, marketing, transportation and market creation.

Considering the amount of support received from CAP to Spain compared to north European countries, the success of Spanish agriculture industry becomes more evident after the accession. To put it more clearly, Spanish agricultural products were not supported as much as north European products. In this sense; the growth of agricultural production in Spain after the accession is a good example of maintaining competitiveness.

To sum up, Spanish agriculture has a dual structure, which consist of big and small farms. Big farms are the main producers of agricultural products and they can be identified as modern competitive units but small farms are the majority, and these family type of farms are the traditional alternative.

3.1.2.4. Agricultural Trade of Spain within EU

As mentioned earlier, Spain is one of the main producers and exporters of vegetables, fruits, olive oil, fish and meat in the European Union. As clearly seen from the table 3-13, nearly 70% of total export value of Spanish exports consists of vegetables, fruits, olive oil, fish and meat and their preparations. Spain's agricultural external trade balance is in a positive position with EU members. To put it more clearly, Spanish agricultural export value is higher than the agricultural import value.

Imports of Spain mainly consist of live animals, diary products, meat and fish, cereals and beverages. These products represent roughly 60% of total agricultural imports of Spain. Spanish agricultural imports are mainly income elastic products, or capital-intensive products of EU member states.

TABLE 3—13 Agricultural Imports and Exports of Spain, Intra EU, 2000,EUR

Product Code [a]	Export	Percentage (%)	Import	Percentage (%)	Balance
01	244822	1,86	348155	4,40	-103333
02	973930	7,38	519497	6,56	454433
03	855271	6,48	1205690	15,24	-350419
04	451273	3,42	893019	11,29	-441746
05	55543	0,42	39289	0,50	16254
06	175621	1,33	96811	1,22	78810
07	2737702	20,76	245378	3,10	2492324
08	3011184	22,83	241483	3,05	2769701
09	71647	0,54	68690	0,87	2957
10	222818	1,69	610747	7,72	-387929
11	56796	0,43	58417	0,74	-1621
12	83808	0,64	167783	2,12	-83975
13	56829	0,43	40078	0,51	16751
14	4804	0,04	2811	0,04	1993
15	730444	5,54	147364	1,86	583080
16	363819	2,76	160038	2,02	203781
17	240337	1,82	314358	3,97	-74021
18	116591	0,88	167067	2,11	-50476
19	283513	2,15	395243	4,99	-111730
20	675490	5,12	262562	3,32	412928
21	278285	2,11	630851	7,97	-352566
22	1237135	9,38	906440	11,45	330695
23	140595	1,07	204421	2,58	-63826
24	121443	0,92	186953	2,36	-65510
Total	13189700	100,00	7913145	100,00	5276555

a. See page 38 for the detailed names of the products
Source: Eurostat, Intra and Extra EU Trade Data, 1000 EUR

TABLE 3—14 Combined Nomenclature of Agricultural Products, Eurostat

Product 01	Live Animals
Product 02	Meat and Edible Meat Offal
Product 03	Fish and Crustaceans, Molluscs and Other Aquatic Invertebrates
Product 04	Diary Produce; Birds' Eggs; Natural Honey; Edible Products of Animal Origin, Not Elsewhere Specified or Included
Product 05	Products of Animal Origin Not Elsewhere Specified or Included
Product 06	Live Trees and Other Plants; Bulbs, Roots and the like; Cut Flowers and Ornamental Foliage
Product 07	Edible Vegetables and Certain Roots and Tubers
Product 08	Edible Fruit and Nuts; Peel of Citrus Fruits or Melons
Product 09	Coffee, Tea, Mate and Spices
Product 10	Cereals
Product 11	Products of the Milling Industry; Malt; Starches; Inulin; Wheat Gluten
Product 12	Oil Seeds and Oleaginous Fruits; Miscellaneous Grains, Seeds and Fruit; Industrial or Medical Plants; Straw and Fodder
Product 13	Lacs; Gums, Resins and Other Vegetable Saps and Extracts
Product 14	Vegetable Plaiting Materials; Vegetable Products not Elsewhere Specified or Included
Product 15	Animal or Vegetable Fats and Oils and Their Cleavage Products; Prepared Edible Fats; Animal or Vegetable Waxes
Product 16	Preparations of Meat, Fish or Crustaceans, Molluscs or Other Aquatic Invertebrates
Product 17	Sugars and Sugar Confectionery
Product 18	Cocoa and Cocoa Preparations
Product 19	Preparations of Cereals, Flour, Starch or Milk; Pastry cooks' Products
Product 20	Preparations of Vegetable, Fruit, Nuts, or Other Parts of Plants
Product 21	Miscellaneous Edible Preparations
Product 22	Beverages, Spirits and Vinegar
Product 23	Residues and Waste From the Food Industries; Prepared Animal Fodder
Product 24	Tobacco and Manufactured Tobacco Substitutes

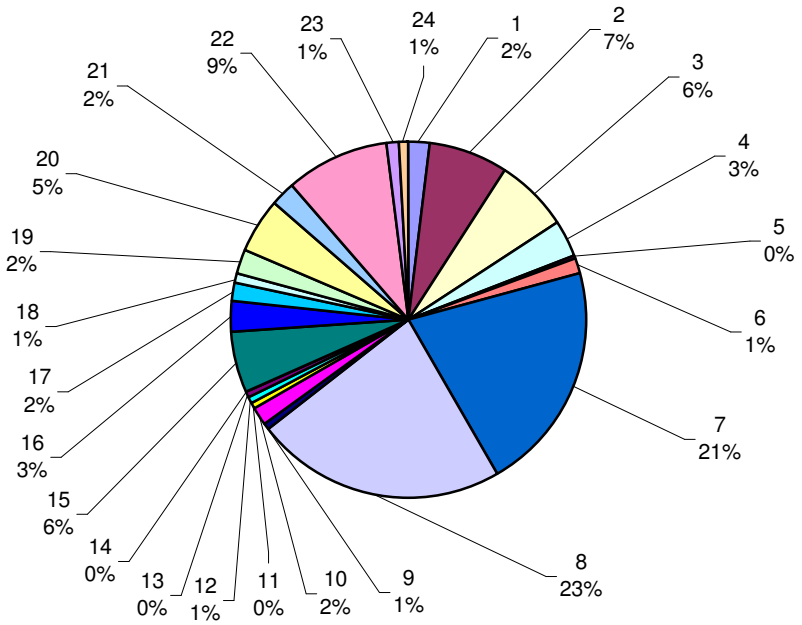

FIGURE 3-12 Agricultural Exports of Spain to EU, 2000

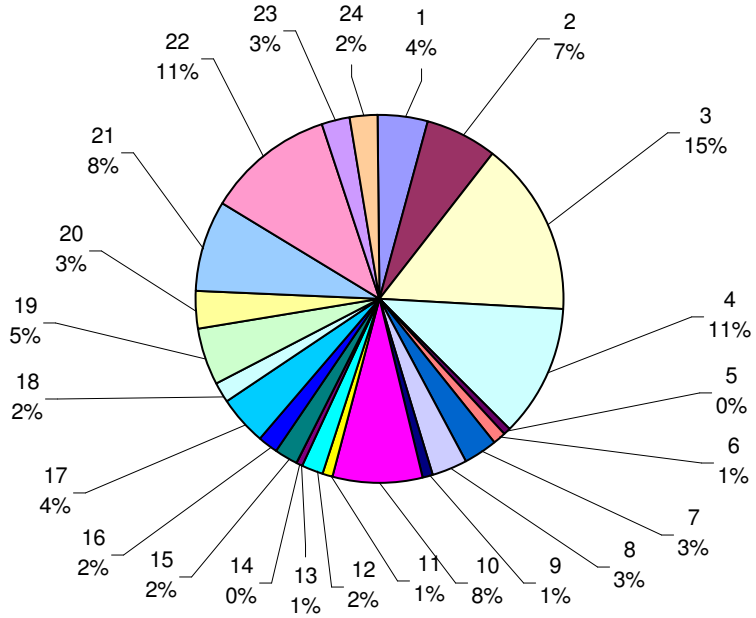

FIGURE 3-13 Agricultural Imports of Spain from EU, 2000

France, Germany, Italy, Portugal and United Kingdom are the biggest trading partners of Spain in terms of agricultural products. As clearly seen from the table 3-15, France, Germany, Italy, Portugal and UK consume 81% of total agricultural exports of Spain. Especially Portugal should be analysed deeply in terms of agricultural trade. Portugal and Spain were the loggerheads, which have never had any type of trade relation before the EU accession. But today 12% of agricultural exports and 6% of agricultural imports of Spain are with Portugal. In this sense, intra-regional trade is one of the important aspects of EU single market. In addition to this, 53% of Spanish agricultural exports and 55% of agricultural imports occur within the Mediterranean countries of European Union.

France is the biggest trading partner of Spain in agricultural products. 23% of agricultural exports and 30% of agricultural imports occur with French market. Being Spain's biggest neighbour and the biggest producer of agricultural products in EU, France is a big market for Spanish agricultural exports. Likewise, French agricultural products contain the highest share in Spain's total imports of agricultural products.

Germany comes second about agricultural trade with Spain. Having the most advanced economy of the EU with a competitive manufacturing and services industry, German population consumes Spain's agricultural exports with an increasing trend. Spain has the absolute advantage of growing fruits, vegetables and

other Mediterranean products and Germany is one of the advanced producers of diary products, preparations of cereal, sugar confectionary.

TABLE 3—15 Spain's Agro-imports and Agro-exports within EU, 2000

Member States	Export [a]	% Of Total Exp.	Import [a]	% Of Total Imp.	Balance
EUR	13189700	100	7913145	100	5276555
France	3158995	23,950	2390996	30,22	767999
Germany	2267708	17,193	844082	14,39	1423626
Italy	1997936	15,148	513903	14,05	1484033
Portugal	1684596	12,772	485758	10,67	1198838
Utd. Kingdom	1677007	12,715	1138898	6,66	538109
Netherlands	1011454	7,669	1112155	6,49	-100701
Belgium	530733	4,024	337014	6,14	193719
Sweden	206296	1,564	37937	4,96	168359
Denmark	199347	1,511	392686	4,26	-193339
Greece	153471	1,164	75009	0,95	78462
Austria	132907	1,008	39432	0,50	93475
Finland	106003	0,804	9932	0,48	96071
Ireland	55101	0,418	527275	0,13	-472174
Luxembourg	8146	0,062	8070	0,10	76

a. Aggregate values of agricultural products: (1+2+3…. +24), 1000 EUR
Source: Source: Eurostat, Intra and Extra EU Trade Data

Italy is the third biggest trading partner of Spain within the European Union. Trade with Italy is another good example of intra regional trade like France and Portugal. 15% of the total exports and 14% of total imports of Spain was with Italy in 2000. Main products subject to trade within Spain and Italy are fruits, vegetables, fish and meat, olive oil and beverages. In this sense, two typical Mediterranean countries create a big amount of trade among the similar products that they produce products such as, fruits, vegetables, fish and meat, olive oil and beverages. This is a good example of intra-industry trade within Mediterranean.

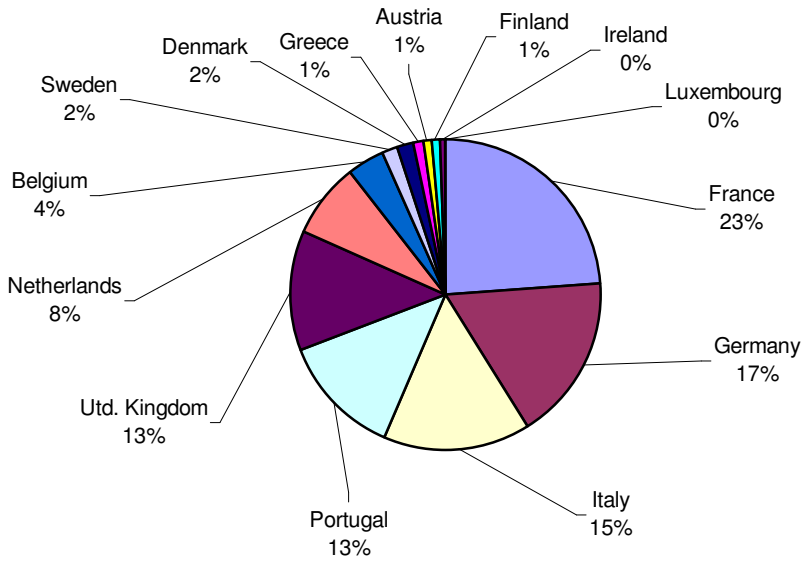

FIGURE 3-14 Spain's Agricultural Exports to EU Member States, 2000

Figure 3-14 shows the agricultural exports of Spain to EU Member States. As we can see from the chart, most of the agricultural exports have the direction to France, Germany, Italy, Portugal and UK. Figure 3-15 indicates that the most of the import products are coming from France, Germany, Italy, Portugal and UK.

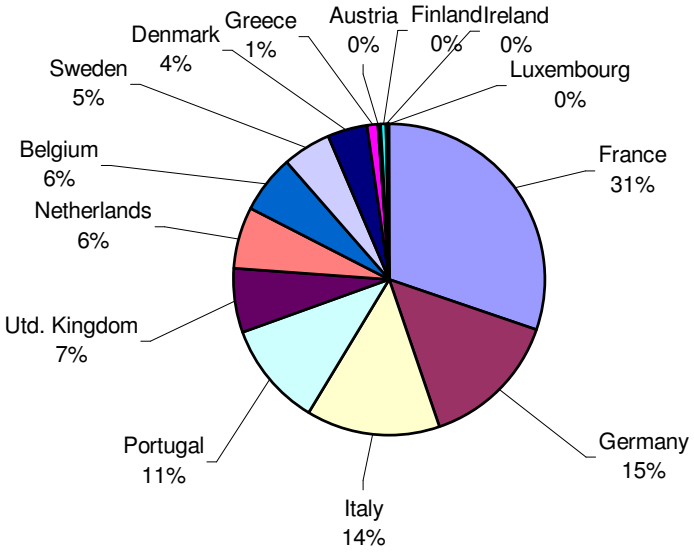

FIGURE 3-15 Agricultural Imports of Spain from the Member States of EU, 2000

Spain's trading partners are not only composed of EU countries. It has been told that Spain has special relationship with the South and North American countries because of her historical ties. Apart from historical ties, South and North America is a very big market for agricultural goods. In this sense, South and North American countries are big trade partners for Spain.

TABLE 3—16 Comparison of Spain's Foreign Trade with EU and America, 2000

Trade Blocks	Total Spanish Agro-Exports	Total Exports (%)	Total Spanish Agro-Imports	Total Imports (%)
EU	13189700	90,98	7913145	66,32
South North America[a]	1307740	9,02	4017377	33,67
Total	14497440	100,00	11930522	100,00

a. Total agricultural trade with North and South American countries. (01+02+03…+24)
Source: Eurostat intra and extra EU trade, 2000

Table 3-16 compares the trade relations of Spain between EU and North-South America. As we can see from the percentages, 90% of total Spanish export destination is the EU Member States. Compared to 9% of total Spanish agro-exports, which moves to North and South America, it can be stated that Spain highly integrated with EU in terms of agricultural trade. 66% of total Spanish imports are coming from the EU Member states and only 33% from the North and South American countries.

Spain has a negative agricultural trade balance with US, Canada, Brazil, Mexico and Argentina. Canada and US are known as powerful and advanced agricultural producers in the world. But for Argentina, Mexico and Brazil, we can say that Spain's political and historical ties are effective on agricultural trade.

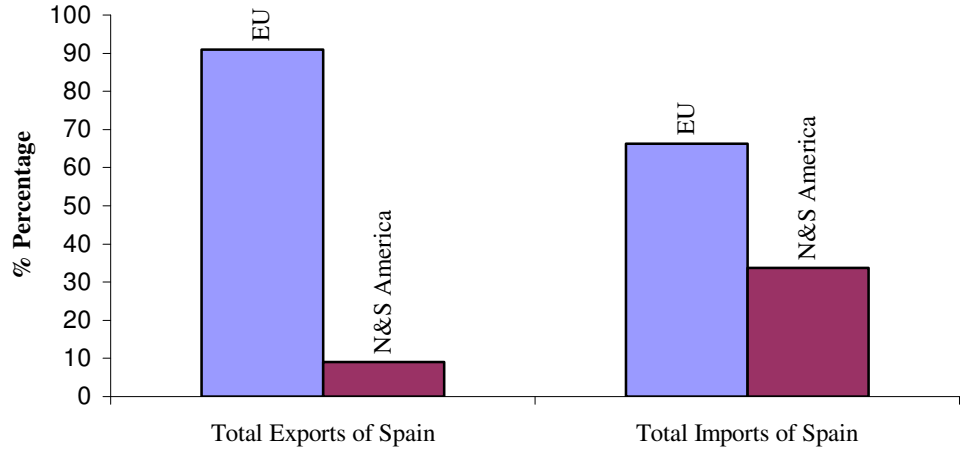

FIGURE 3-16 Spanish Foreign Trade with EU and North and South America

3.2. Greece

Greece is a typical Mediterranean country, which reflects the same social, political, historical, geographical characteristics like Spain, Portugal and Italy. In terms of geographical condition, Greece consists of 132 thousand square kilometres of which 81% is the mainland and 19% are islands. These form a remarkable series of bays and headlands. Greece has huge altitude differences as well. Mountainous character of the country determines the climate and basic problems of agricultural production.

3.2.1. Physical and Historical Background of Greece

Greece has a typical Mediterranean summer-drought climate with a strong maritime influence. No part of the country is more than 90 kilometres away from the sea; therefore, the general weather doesn't seem to reflect significant changes. During winter the weather is mild especially on the islands and along the west coast. Frost is not something occurs regularly, just in some parts of the country it can be seen less than 30 days. Spring is short compared to summer. Temperatures vary between 26-40˚C during the summer and autumn has the average of 23˚C with sunshine.

Precipitation is around 707 mm annually and it is not evenly distributed among either places or time. Western Greece precipitation can be identified as regular rather than the Ionian side, which has twice higher than the national average. In contrast, the areas of the Aegean are almost half of the national average. Though, the largest

and most intensively cultivated area in the east of the mainland Greece is inadequate in terms of precipitation.

Natural water resources of Greece are under the trans-national control and agreements. Four main rivers of Greece, namely Evros, Nestos, Strymonas and Axios originate either from of the Former Yugoslavian Republics or Bulgaria, therefore Greece has to set its water management cooperating with its neighbours.

Rapid soil erosion is one of the main problems against the agricultural production just as the same in the other Mediterranean countries. As explained above, the harsh climatic conditions creates actual environment for soil erosion. 30% of the country can be argued as risky in terms of erosion. Soils are either thin and poor or ill-drained and only about 30% of the country is suitable for cultivation while almost 40% is pastoral land. Forests occupy almost 18% of Greece with pinewoods and few tall forests in the rainiest mountains of the country (Damianos D., 1998).

3.2.1.1. Pre-1950s; The Evolution of Modern Greek Agriculture

The modern Greek state became autonomous in 1827 following an independence war and revolution declared in 1821 against Turkey. Ionian islands annexed in 1864, Thessaly and Arta in 1881, Macedonia, Epirus, Crete, Thrace and the Eastern Aegean Islands in 1912-13 and Dodecanece Islands in 1947. In order to create the ties between the peasant and the national land, or to abandon the Ottoman influence among the society, Greek state adopted family farming at the core of the agricultural production. This type of solution still exists within the basic problems of the Greek agriculture.

In 1871, an extensive land distribution was introduced under which every adult Greek could apply for a plot of national land. Until 1911, almost 320.400 ha had been distributed to 387.137 beneficiaries with an average size of 1 ha for arable land and 0,3 ha for plantations and an overall average size of 0,82 ha (Damianos D., 1998).

In 1921-22 a war broke out with Turkey and under the Treaty of Lausanne in 1923, two countries agreed a population swap. Nearly 1.625.000 refugees were accepted by Greece. This was another push to implement an extensive land reform again.

319.000 families received 2 million ha of land including ranges and forests from the land reform occurred in those years. The land reform affected 25% of the productive land including forests and chaparrals, and 36% of the agriculturally utilised land. The structure of Greek agriculture today has been decisively affected by the long process that established the family farm as the core of agricultural production in the period 1871-1917 (Damianos D., 1998).

Another corner stone for the Greek agricultural production was the WWII and the civil war in the aftermath. Greek agriculture, in a broader way, the Greek economy as a whole was destructed and most of the resident Greek population was lost in the 2nd WW. For this reason, Greece faced with shortages of agricultural supply and.

In the first half of the 20th century, to form a sound infrastructure for the new and fragile Greek state, the administrators adopted populist politics, and as a result, family farming became the core of the agricultural production of Greece. This kind of policy selection faced Greek agriculture with low rates of adoption of the new and modern methods.

3.2.1.2. Post-1950s; US-aid, Investment and Reconstruction

After the Second World War and civil war, the means of production of the Greek economy was totally damaged. The production levels of the pre-war period were higher than the post-war levels. Population, infrastructure, transportation and market facilities should be reconstructed but with the inadequate financial sources and poor human capital, which were important constrains.

In 1948, economic reconstruction started under the US aid like for other European countries. Marshall Plan was once again in action. For Greece, the plan was not different from other beneficiaries of the Marshall plan. The greatest part of the Marshall aid was absorbed by the agriculture in Greece. Huge projects such as large drainage and irrigation plans or mechanisation started. In addition, power plants were also put into operation with the aid received by Greece.

Greek government accepted agricultural machinery, including 50.000 tractors, from the United Nations Relief and Works Agency (UNRWA) and in 1959 the country was for the first time after the WWII self sufficient in cereals (Damianos D., 1998). New methods adopted by the farmers as well as rising levels of pesticide and fertiliser usage improved the levels of production in Greece mainly after 1960s.

However, the labour shortage was one of the problems occurred after the WWII and it is still in the core of the obstacles against the future of the Greek agricultural production. Almost 1,5 million farmers left business, 60% of them immigrated into the West European countries, mainly Germany and the rest moved to Athens or other major urban centres of Greece.

TABLE 3—17 Mechanisation of Greek Agriculture

Years	Number of Tractors	Number of Milking Machines	Number of Harvesting Machines
1961	71077	3850	5784
1971	282371	4350	33991
1981	548080	5400	42361
1991	755743	12959	48821
2000	885000	13900	51500

Source: www.fao.org

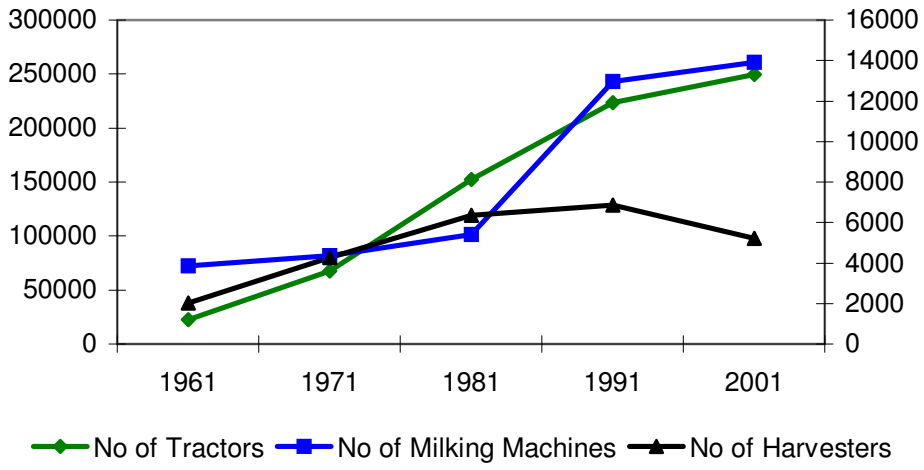

FIGURE 3-17 Mechanisation of Greek Agriculture

It can be seen from the table 3-17 that the number of tractors in Greece grew about 11 times between 1961-2001, which is 4 times at milking machines and 9 times in harvesting machines. These data shows the rapid growth of the mechanisation rate of Greek agriculture between 1961-2001. For milking machines, the growth rate accelerated after joining the European Union.

TABLE 3—18 Greek Agricultural Production (Net PIN Base 1989-91=100)

Year	Production
1961	54,2
1965	57,4
1970	67,4
1975	83,1
1980	90,8
1985	98,9
1990	91
1995	110,1
2000	109

Source: www.fao.org

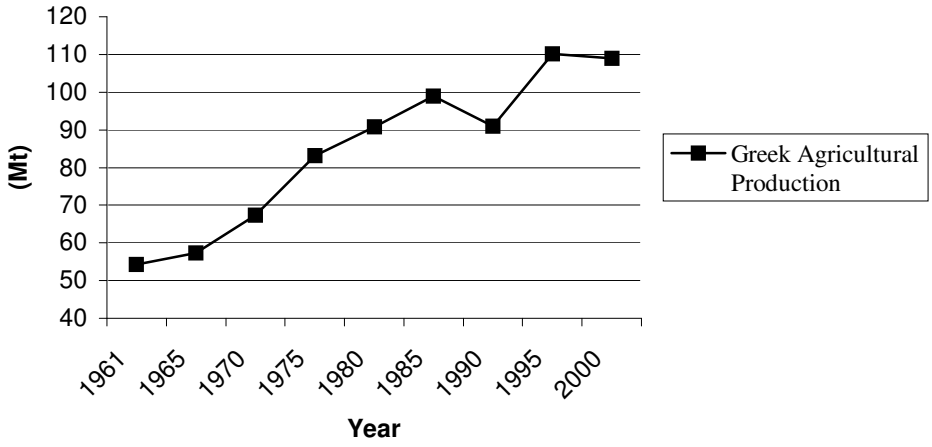

FIGURE 3-18 Agricultural Production of Greece (Net PIN Base)

Figure 3-18 shows that the Greek agricultural production doubled in 50 years after the WWII. Between 1985-1990, Greek agriculture faced with reconstruction, obviously, re-arrangement with the effect of Common Agricultural Policy of EU.

This kind of effect can be seen in each member on the process of accession to CAP, for instance, opening up the agricultural market to the competitive European producers creates a re-arrangement process in terms of capital, labour and other components of agricultural production. It brings concentration on specific products, which Greece has, absolute advantage against other European countries. But it should be noted that, this kind of product concentration occurs with the help of agreements between EU and member state authorities' negotiations rather than market forces. A good example is tobacco for Greece.

From 1960s to the European accession, the main agricultural policy of Greece is based on reducing the income gap between different classes of the population as well as overcoming regional disparities. Nevertheless, those policies with the tools of price support regime designed to increase living standards of the rural population. Another aim of the Greek agricultural policy was to improve the average size of the farms, which were mainly consisting of small type of family farming.

TABLE 3—19 Consumption of Fertilisers in Greece, Mt (Metric Tons)

Years	Total Fertilisers	Nitrogenous Fertilizers	Phosphate Fertilizers	Potash Fertilizers
1961	158,72	83,35	65,58	9,80
1971	347,62	205,70	123,79	18,13
1981	580,31	373,29	166,05	40,96
1991	652,10	408,40	176,20	67,50
2001	2600,00	1030,00	570,00	420,00

Source: www.fao.org

Improvement of Greek agricultural production can be seen from the consumption levels of agricultural fertilisers. The table 3-19 and figure 3-19 shows that the consumption of total fertilisers in 2001 is 17 times higher than the levels of 1950s. In this regard, modernisation of Greek agricultural production is directly

linked with the levels of fertiliser usage, as it is in other countries as well. It is important to notice that the fertiliser usage after the full integration into the CAP increased rapidly, therefore it can be said that agricultural production of Greece after the EU accession increased the consumption of fertilisers.

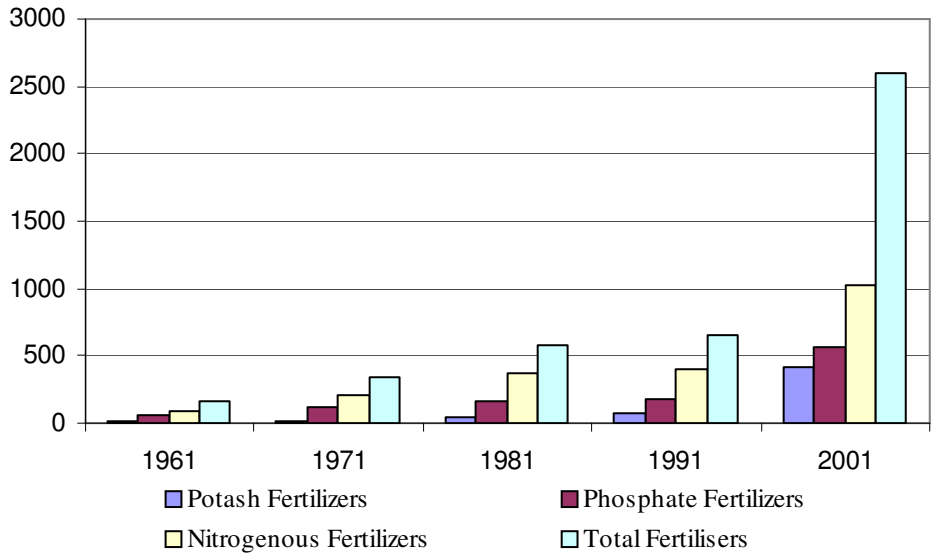

FIGURE 3-19 Change of Consumption of Fertilisers, Greece

3.2.2. Greek Agriculture: Current Situation

Greece today has 131.937-km^2 area, which is the 8th biggest area among the EU members. The population of Greece is 10,5 million and it is the 7th populated country of the European Union. GDP/inhabitants is 15.780 EUR, which means that Greece is the poorest nation of the EU. Unemployment is 10,5% and Greece has the second highest unemployment rate in the European Union after Spain. Greece's trade balance is –20.081 million Euro reflecting a net deficit position. Total civilian working force of Greece is around 4 million according to year 2000 (CEC, 2000).

3.2.2.1. The Role of Agriculture in Greek Economy

In Greece, the share of agriculture in GDP is 4 times higher than EU average (1,7), which is 6,7%. The share of imports of food and agricultural products in imports of all agricultural products is 5.4% and the share of exports of food and agricultural products in exports of all agricultural products is 21,8%.

TABLE 3—20 Greek Agricultural Labour Force, 1950-2000

Years	Total Economically Active Labour Force (1000)	Total Agricultural Labour Force (1000)	Agricultural Labour force (% of Total)
1950	3089	1709	55,3
1960	3388	1767	52,2
1970	3412	1442	42,3
1980	3761	1174	31,2
1990	4195	963	23,0
2000	4626	775	16,8

Source: www.fao.org

As it can be seen from the table 3-20, Greek agricultural labour force has been declining since from the 1950s. Although the economically active labour force has been growing, the share of agricultural labour force in total economically active labour force has been decreasing.

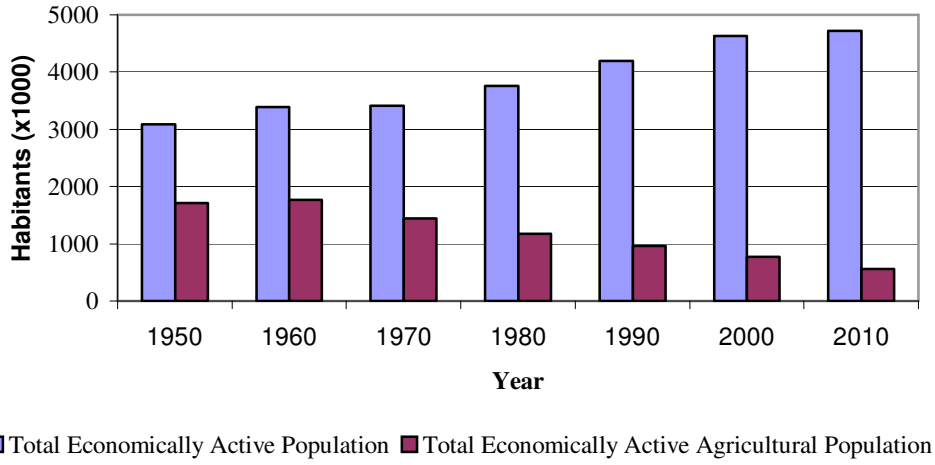

FIGURE 3-20 Greek Agricultural Labour Force

3.2.2.2. Agricultural Production and Consumption in Greece

The share of specific products in total agricultural production of Greece reflects that 80% of the agricultural production consists of fresh vegetables (15,1%), fresh fruit (14,9%), olive oil (11,2%), textile fibres (8,7%), milk (8,5%), sheep and goats (6,8%), wheat (5,1%), tobacco (4,6%) and maize (4,1%) (CEC, 2000). As we can see, strong Mediterranean influence creates the composition of agricultural production in Greece.

Greece supplies 85% of the total textile fibres production, 44,3% of the total tobacco production, 24% of the total olive oil production, 13,6% of total sheep and goats' production, 9,5% of total fresh fruit production, 7,9% of total fresh vegetables' production and 6,9% of maize production of the European Union as a whole (CEC, 2000). Therefore, Greek concentration of agricultural production is

mainly on textile fibres, tobacco, olive oil, sheep and goats and fresh fruit and vegetables.

TABLE 3—21 Share of Products in Agricultural Production, Greece

Products	Percentage (%)
Fresh vegetables	15,1
Fresh fruit	14,9
Olive oil	11,2
Textile fibres	8,7
Milk	8,5
Sheep and goats	6,8
Wheat	5,1
Tobacco	4,6
Maize	4,0
Pigs	3,0
Cattle	2,5
Eggs	1,6
Poultry	1,4
Sugarbeet	1,3
Barley	0,5
Rice	0,4
Wine and must	0,4
Oats	0,2
Seeds	0,1
Oilseeds	0,1
Rye	0,1

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

In terms of domestic production, %80 of Greek agricultural production consist of mainly fresh vegetables, fresh fruit, olive oil, textile fibres, milk, sheep and goats, wheat and tobacco. The production trends of various products of Greek agriculture tend upwards between 1961-2000. For instance, vegetable production increased 3 times, wheat and fruit production increased roughly 2 times, maize production increased nearly 10 times and olive oil production increased about 2 times between 1960-2000. Barley production increased rapidly until 1980s but right after the

accession, it has slumped nearly to 1/3 value of the 1980 level. The main rising trend has slowed down mainly after 1990, which is the coincidence of Greek completion of CAP participation and the starting days of CAP reform.

TABLE 3—22 Primary Crop Production between 1961-2002, Greece

Year	Vegetables Melons, Total Production (Mt)	Wheat Production (Mt)	Fruit excl Melons, Total Production (Mt)	Maize Production (Mt)	Barley Production (Mt)	Oil of Olive (Mt)
1961	1,178,640	1,527,870	2,619,916	228,171	221,4	215
1971	2,678,241	1,946,000	2,845,902	570,715	781,	195,2
1981	3,847,134	2,932,000	3,915,043	1,507,000	742,1	249,839
1991	4,353,243	3,162,000	3,776,912	2,327,000	472	396
2002	3,869,500	2,033,000	4,170,300	2,014,000	268	372

Source: www.fao.org

Compared to north European countries, Greek agriculture couldn't receive higher amounts of agricultural support. The major problems of the agricultural production in Greece such as the human desertification and ageing farmers have deepened within the process of accession. But on the other hand, the process of enlargement achieved reallocation of resources at agricultural production of Greece.

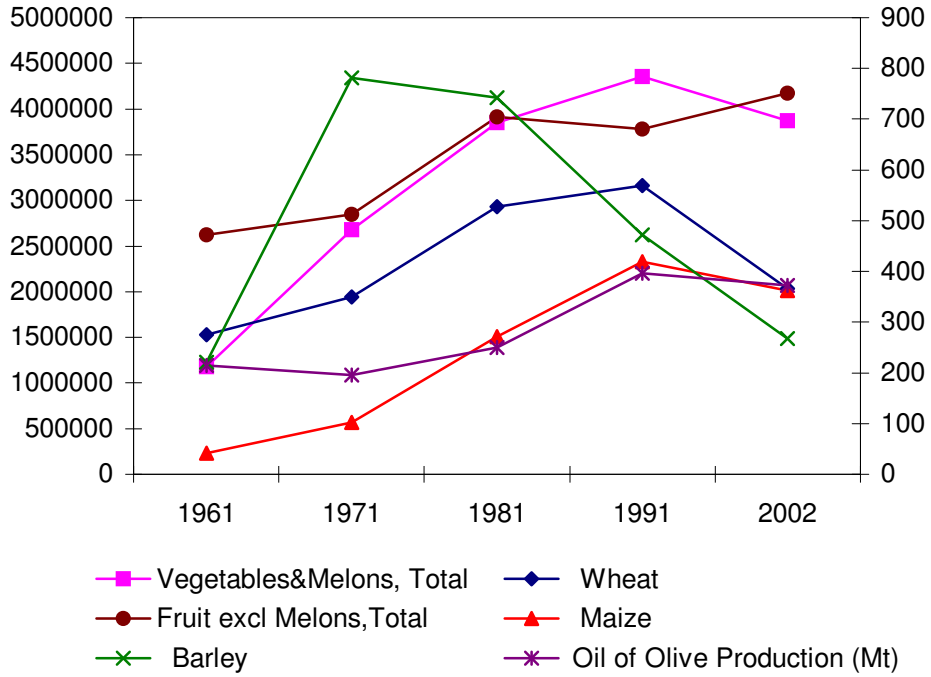

FIGURE 3-21 Increase in Production of Primary Crops, Greece 1961-2002

Figure 3-21 shows that the production of basic agricultural products increased until 1991. Though the accession of Greece into the Community is 1981, the full adjustment of Greek agriculture to CAP took nearly 10 years. Greece couldn't benefit from the Common Agricultural Policy as the northern European farmers did in the past. In order to receive those generous funds, the farmer should have a competitive production capacity. Before 1991 the support for agriculture was directly linked with amount of production. Therefore, there was no incentive for the farmers to produce high amounts of agricultural products as it was achieved with the high-tech farms of north Europe. For instance, highly mechanised Dutch, French, British and German farms in terms of pesticides, techniques and technologies were absent in Greek agriculture.

Another fact is that the reform process of the CAP coincided with the accession of Greece. After though debates between the taxpayers, trade partners and EU farmers coupled with various financial crises of the EU budget, the politicians accepted various reform packages for CAP. Their first priority was removing the link between the amount of production and support in order to ease the budget deficit. In this regard, the Greek agriculture couldn't receive high amounts of agricultural support from the EU budget after.

Correspondingly, Mediterranean countries were disadvantaged. Mainly, Mediterranean countries were supporting the reform package in order to create a more market driven agricultural production and consumption for EU. By this way, the Mediterranean producers could have the chance to compete with the north European producers. Also apart from the competition, the equal distribution could bring more cooperation within Europe in terms of advanced products of various regions.

Greek peninsula, which has a restricted agricultural land, hasn't been stable in terms of land use during the last couple of decades. Like in Spain, some sort of reallocation of land use occurred in Greece as well. For instance the land used for barley has declined nearly 40% but at the same time the land used for olive and maize cultivation has increased mainly after 1980s. However, generally Greek agricultural land used for cultivation hasn't reflected changed much. (Table 3-23 and Figure 3-22)

TABLE 3—23 Area Harvested for Primary Crops between, (Ha)

Year	Barley	Fruit excl Melons, Total	Maize	Vegetables & Melons, Total	Wheat	Olives
1961	189,23	383,28	191,00	142,08	1172,90	0
1971	380,40	355,25	167,60	144,50	976,60	0
1981	304,40	316,02	175,70	143,50	1064,00	0
1991	171,00	336,84	230,30	136,83	1014,00	705
2002	115,00	323,69	220,30	134,70	876,38	765

Source: www.fao.org

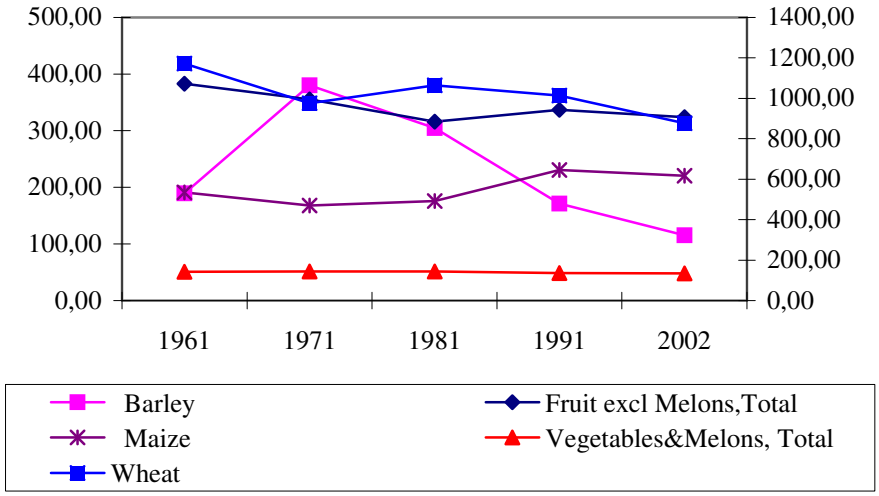

FIGURE 3-22 Area Harvested for Primary Crops in Greece, 1961-2002

Greek agricultural production achieved rapid increases in terms of yields per hectare during the 1961-2002 period shown in the table 3-24. For instance, in terms of vegetables and melons, the yield in 1991 was roughly 4 times higher than the yield in 1961. It is 2,5 times for wheat, 2 times for fruit, 10 times for maize and 2 times for barley for the same period.

TABLE 3—24 Yields of the Primary Crops in Greek Agriculture, 1961-2002

Year	Vegetables & Melons, Yield (Hg/Ha) (X10)	Wheat Yield (Hg/Ha)	Fruit excl Melons, Yield (Hg/Ha)	Maize Yield (Hg/Ha)	Barley Yield (Hg/Ha)	Olives (Hg/Ha)
1961	82,96	13,03	68,36	11,95	11,70	0,00
1971	185,35	19,93	80,11	34,05	20,53	0,00
1981	268,09	27,56	123,89	85,77	24,38	0,00
1991	318,14	31,18	112,13	101,04	27,60	28,81
2002	287,28	23,20	128,84	91,42	23,30	26,14

Source: www.fao.org

Interestingly after 1991 it can be seen that the yields for primary crops in Greek agriculture started to decline. Except fruits, vegetables and melons, wheat, maize, barley and olives' yields declined varying 10-30% between 1991 and 2001. As mentioned above, the Common Agricultural Policy of the European Union, introduced a reform process after 1991 with various stages.

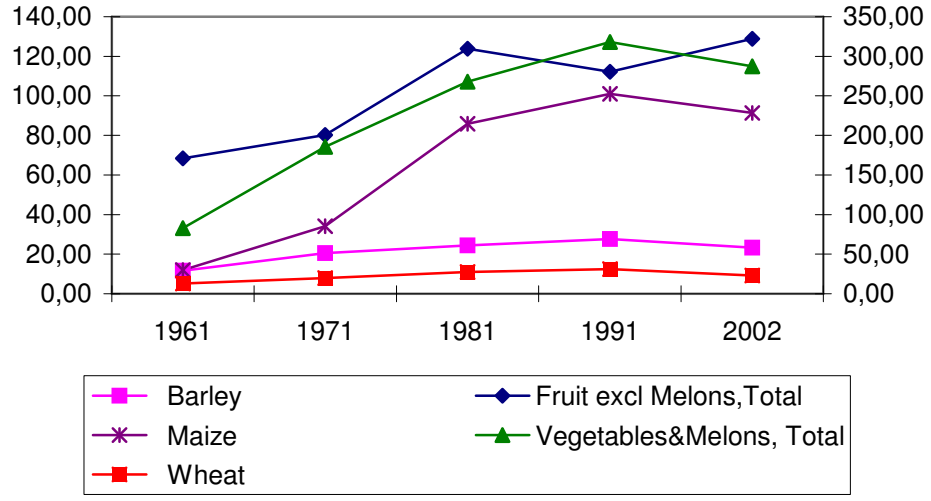

FIGURE 3-23 Yields of Primary Crops in Greece, 1961-2002

In terms of live animals and dairy products, the number of cattle reduced a half between 1961 and 2001, sheep and goats remained constant, the number of pigs grew

by 50%, total meat production increased about 4 times and milk production increased more than 2 times. This situation reflects a developing country picture.

Reallocation of resources in a developing country includes demand and supply sides together. For example, increasing income levels creates its demand structure on capital-intensive products as well as increasing levels of capital formation directs new investments towards capital intensive production.

TABLE 3—25 Primary Live Animals and Production of Meat and Milk in Greece

Year	Cattle [a]	Sheep & Goats [a]	Pigs [a]	Meat, Total Production [b]	Milk, Total Production [b]
1961	1074,29	14417,00	628,00	155,85	958,94
1971	952,35	11664,99	446,07	338,73	1400,61
1981	880,83	12803,38	993,08	525,86	1691,28
1991	623,51	13994,11	995,52	529,93	1804,68
2002	585,00	14228,00	938,00	472,07	1920,05

a) Number of heads (x1000)
b) Kg (x1000)
Source: www.fao.org

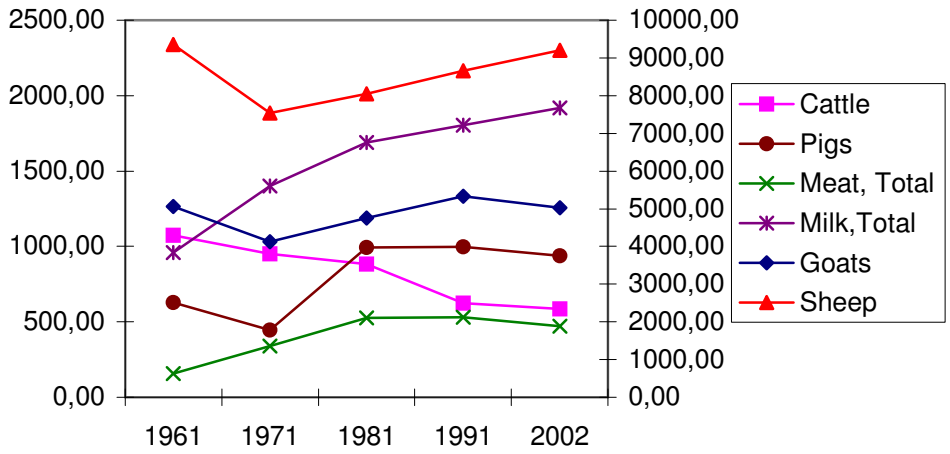

FIGURE 3-24 Population and Production Change for Live Animals and Livestock

3.2.2.3. Farm Structure in Greece

Farm structure in Greece is again a typical Mediterranean type, in which the family farming is the core production unit. As we can see from the Table 3-26, 64% of the farms are identified as small type which are less than 8 European size units, whereas 10% for medium large and 1% as large farms. In this regard, agriculture in Greece is generally a family type of production more or less as in Spain or Portugal.

TABLE 3—26 Economic Size of Holdings in European Size Units (ESU)

Economic Size of Holding in European Size Units ESU	Number of Holdings in the FADN Field of Observation	Area (Ha UAA)	Total Output [a]
	1999	1999	1999
Small (< 8 ESU)	326480	3,76	8,96
Medium small (8 - 16 ESU)	128450	7,81	17,45
Medium large (16 - 40 ESU)	52331	14,07	32,71
Large (40 - 100 ESU)	4061	35,00	51,30
Very large (> 100 ESU)	-	-	-
All sizes	511322	6,08	13,86

a) Average results per holding in 1 000 ECU-EUR
Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

Some of the scholars today argue that the problems of Greek agriculture depend on those policies of the early stages of Modern Greek state (Damianos D., 1998). It should be pointed out that agriculture as a tool of political influence has always been in the agenda of modern Greek states, not only in the 20th century but also today.

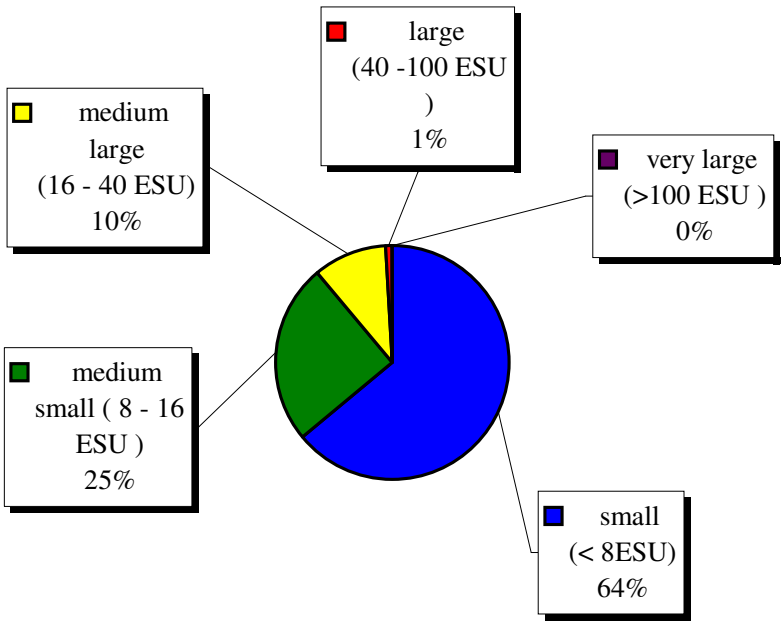

FIGURE 3-25 Number of Holdings in Greek Agriculture, 1999

Considering the family farming at the core of agriculture in Greece, the output statistics reflect that 76% of the total agricultural production of Greece was achieved by large and medium large farms in 2000. On the other hand, small or medium-small farms in Greece produce only 24% of the total agricultural production. In this sense, Greek agriculture today depends on medium large or large farmers, even though the number of family farms is much higher than the large farms.

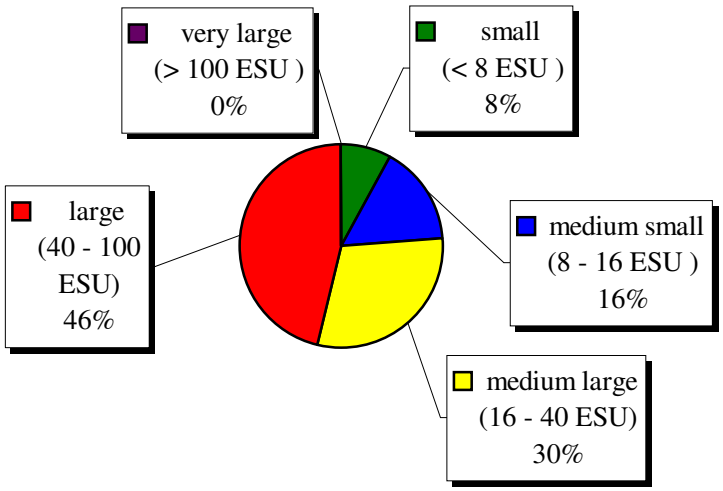

FIGURE 3-26 Distribution of Total Output Per Holding in Greece, 1999

3.2.2.4. Agricultural Trade of Greece within EU

Main export items of Greece towards EU agriculture market are preparations of vegetables, edible fruits and nuts as well as citrus and melons, animal or vegetable fats like olive oil, fish and tobacco. Those products reflect 81% of total Greek export to EU.

Greek imports from EU mainly consist of meat products, diary products, beverages and spirits, tobacco and tobacco substitutes, cereals and preparations of cereals. In this regard, 61% of total Greek imports from EU are in these product categories. It can be seen from the external trade of Greece that the export products are the ones which Greece has an absolute advantage. But those products, which

Greece exports to EU, are not capital-intensive products. Coincidently, Greece has been importing capital-intensive products from EU. Greek-EU agricultural trade balance is a form of out-flow of typical Mediterranean products whereas inflow of capital-intensive products.

TABLE 3—27 Agricultural Imports and Exports of Greece, Intra EU, 2000, EUR

Product Code [a]	Export (EUR)	Percentage (%)	Import (EUR)	Percentage (%)	Balance (EUR)
01	664	0,04	38624	1,31	-37960
02	2800	0,18	656403	22,26	-653603
03	220874	14,56	112696	3,82	108178
04	78961	5,21	475165	16,12	-396204
05	1649	0,11	10215	0,35	-8566
06	2314	0,15	34353	1,17	-32039
07	74274	4,90	51730	1,75	22544
08	284996	18,79	75792	2,57	209204
09	3651	0,24	22018	0,75	-18367
10	35267	2,33	186012	6,31	-150745
11	1598	0,11	26861	0,91	-25263
12	15380	1,01	24610	0,83	-9230
13	1476	0,10	3976	0,13	-2500
14	431	0,03	139	0,00	292
15	266281	17,56	45640	1,55	220641
16	16720	1,10	57304	1,94	-40584
17	8298	0,55	79030	2,68	-70732
18	1418	0,09	83606	2,84	-82188
19	27177	1,79	140595	4,77	-113418
20	288839	19,04	101253	3,43	187586
21	10890	0,72	105684	3,58	-94794
22	83855	5,53	259642	8,81	-175787
23	3232	0,21	119789	4,06	-116557
24	85622	5,65	237032	8,04	-151410
Total	1516667	100,00	2948169	100,00	-1431502

a. See page 34 for the detailed names of the products
Source: Eurostat, Intra and Extra EU Trade Data, 1000 EUR

As it can be seen from the table 3-27 that basic agricultural exports of Greece consist of fish, edible fruits and nuts, olive oil, vegetables and fruit preparations. Agricultural imports of Greece consist of meat and meat products, diary products cereals, beverages, spirits and vinegar.

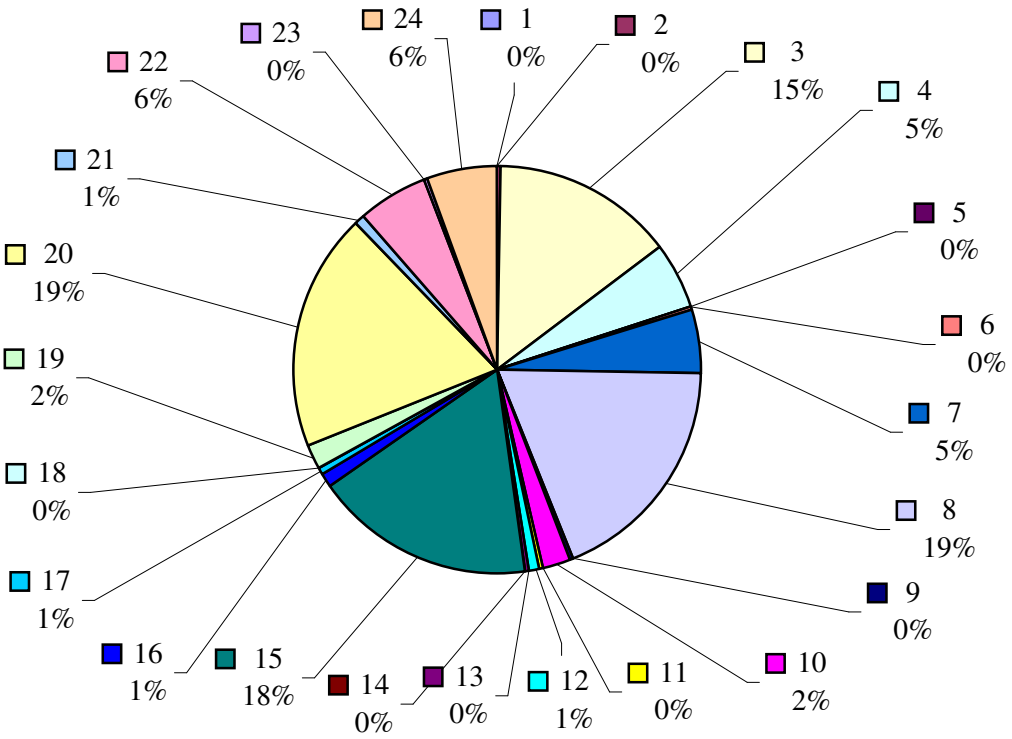

FIGURE 3-27 Agricultural Exports of Greece to EU, 2000

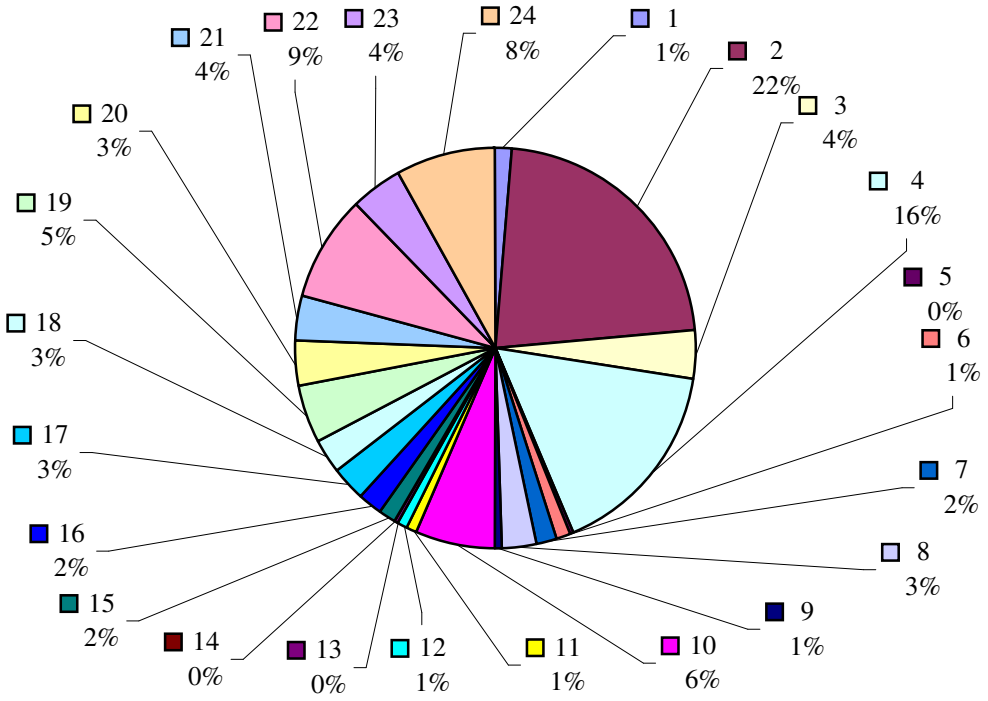

FIGURE 3-28 Agricultural Imports of Greece from EU, 2000

TABLE 3—28 Greek Agro-imports and Agro-exports with EU Member States

Member States	Export [a]	% Of Total Exp.	Import [a]	% Of Total Imp.	Balance
EUR	1516667	100,00	2948171	100,00	-1431504
France	83579	5,51	520447	17,65	-436868
Germany	387820	25,57	456005	15,47	-68185
Italy	538581	35,51	416052	14,11	122529
Portugal	17454	1,15	5169	0,18	12285
Utd. Kingdom	193575	12,76	258743	8,78	-65168
Netherlands	111122	7,33	738971	25,07	-627849
Belgium	37680	2,48	126474	4,29	-88794
Sweden	20643	1,36	27533	0,93	-6890
Denmark	10376	0,68	172893	5,86	-162517
Spain	75009	4,95	153471	5,21	-78462
Austria	29893	1,97	24680	0,84	5213
Finland	8200	0,54	7470	0,25	730
Ireland	2659	0,18	40086	1,36	-37427
Luxembourg	75	0,00	177	0,01	-102

a. Aggregate values of agricultural products: (1+2+3…. +24), 1000 EUR
Source: Source: Eurostat, Intra and Extra EU Trade Data, 2000

It can be seen from the table 3-28, Italy, Germany United Kingdom, Netherlands, and France are the biggest agricultural export markets of Greece. Italy receives 35,51% of total Greek agricultural exports to EU. This is a very good example of regional trade of agricultural goods. As touched upon in the previous chapters, agricultural trade should be considered different than industrial goods. For instance, an industrial product, which is used as a tool doesn't reflect the consumers' cultural background as much as agricultural products, does. To put it more clearly, common tastes and daily diet of the same region are more important when it comes to agricultural trade.

Germany is the most advanced and rich economy of European Union. It has the biggest foreign population among other member states as well. In this regard, having the highest income level and with a diversified population, Germany is the second highest demander of the Greek agricultural products among other European countries.

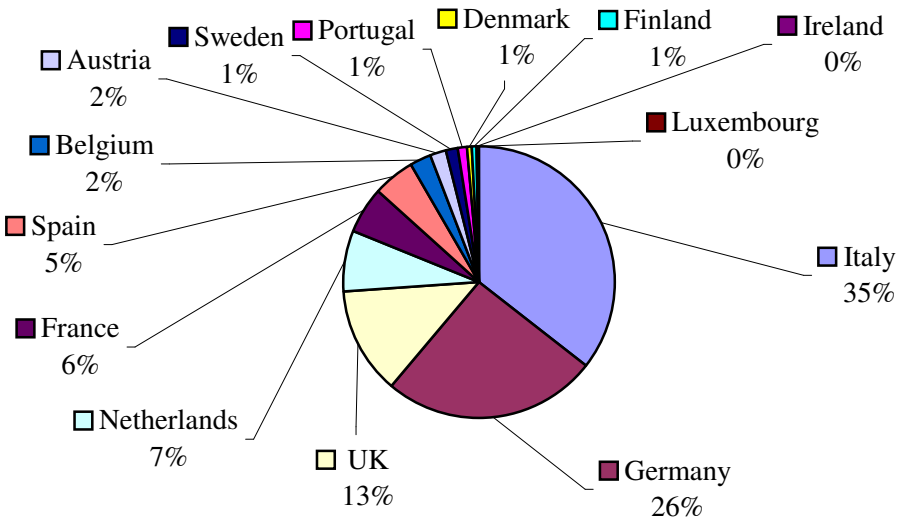

FIGURE 3-29 Greece's Agricultural Exports to EU Member States, 2000

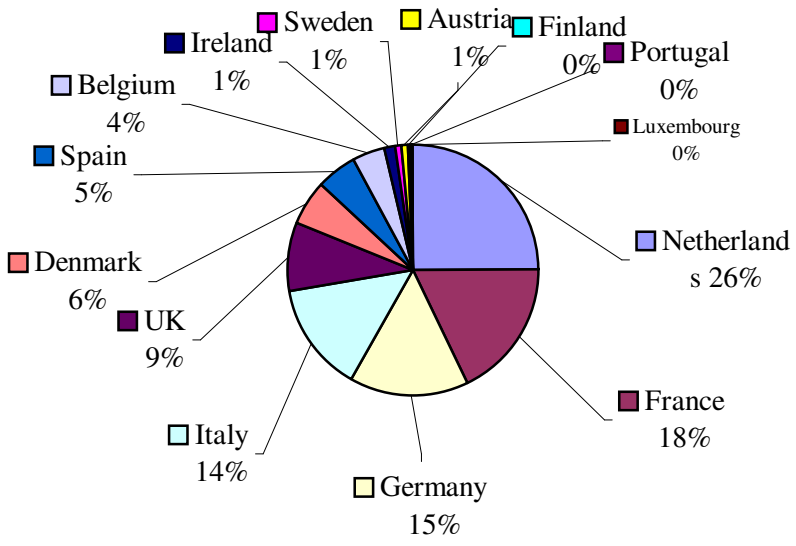

FIGURE 3-30 Agricultural Imports of Greece from the Member States of EU, 2000

TABLE 3—29 Greece's Foreign Trade with EU and Rest of the World, 2000

Trade	Total Trade	Extra-EU Trade	Distribution of Total Trade	Intra-EU Trade	Distribution of Total Trade
Import	3691978	743807	20,15	2948171	79,85
Export	2659845	1143178	42,98	1516667	57,02

a. Total agricultural trade with North and South American countries. (01+02+03…+24) x1000EUR
Source: Eurostat intra and extra EU trade, 2000

Last part of the analyses is about rate of concentration Greek agricultural trade European Union. Greece is a member of the European Union about 2 decades. In terms of agricultural trade, 80% of Greek agricultural imports come from the European Union markets. In terms of exports, 57,02% of the total Greek agricultural exports are directed to the European Union.

Figure 3-31 shows that how Greek agricultural trade has concentrated in European Union markets. In the figure, blue columns reflect the trade occurred with the rest of the world except EU and brown columns reflects the trade with EU countries in the year 2000.

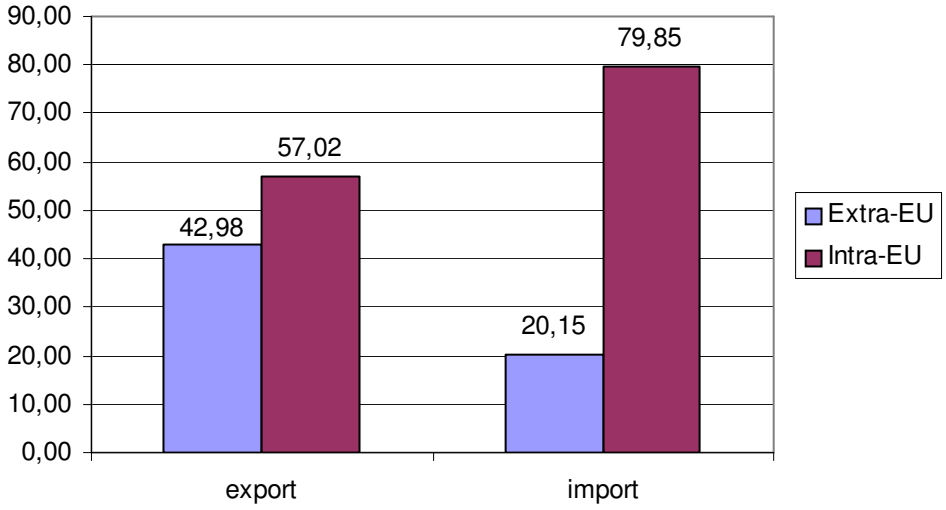

FIGURE 3-31 Comparison of Greek Foreign Trade Between EU and ROW

3.3. Portugal

Portugal is the third country, which will be analysed in this thesis. As Greece and Spain, Portugal is identified as Mediterranean, even though it is located at the Atlantic Ocean side of the European Union. However, Portugal is within the context of Mediterranean literature because of its social, political and economical tendencies that reflects Mediterranean.

Portugal is small but rather diversified country in terms of landscape. Comoes (a poet of the 16th century) who wrote the History of Portugal in rhyme described the country as a garden planted at the seaside.

3.3.1. Physical and Historical Background of Portugal

Portugal is made up of the mainland and the Azores and Madira islands, which altogether include an area of 91.640 square kilometres. The mainland's land area of slightly more than 9,2 million hectares is classified as follows (in thousands of hectares): 2,755 arable land and permanent crops (including 710 in permanent crops), 530 permanent pasture, 3,640 forest and woodland, and 2,270 other land.

A categorisation divides the mainland into three distinct topographical and climatic zones: the south (the Alentejo and the Algarve), the center (the Ribatejo and Oeste), and the north (the Enre Douro e Minho, Trasos-Mpntes, the Beira Litoral, and Beja Interior) (Joze da Silva Lopes, 1993).

The north is mountainous, with rainy, moderately cool climate. This zone contains about 2 million hectares of cultivated land and is dominated by small-scale, intensive agriculture. High population density, particularly in the northwest, has contributed to pattern of tiny, fragmented farms that produce mainly for family consumption coupled with larger and often mechanised farms that specialise in commercial production of a variety of crops. On the average, northern levels of technology and labour productivity are among the lowest in West Europe. High levels of underemployment of agricultural workers accounts for the north being the principal and enduring source of Portuguese emigrant labour (Joze da Silva Lopes, 1993).

The centre is a diverse zone of about 75.000 hectares that includes rolling hills suitable primarily for tree crops, poor dryland soils, and the fertile alluvial soils of the banks of the Rio Tejo (Tagus River in English). A variety of crops are grown on the productive areas under irrigation: grains, mainly wheat and corn, oil seeds (including sunflowers), and irrigated rice. Farms located in the Rio Tejo Valleg typically 100 hectares in size (Joze da Silva Lopes, 1993).

The south is dominated by the Alentejo, a vast, rolling plain with a hot, arid climate. The Alentejo occupies an area of approximately 2.6 million hectares, about 30% of the total area of the mainland Portugal, and produces about 75% of the country's wheat. Although much of the area is classified as arable land, poor soils dominate most of the area, and consequently yields of dryland crops and pasture are low by West European standarts. The Alentejo is also known for its large stands of cork oak and its olive groves. The Algarve, less than a third the area of the Alentejo,

occupies the extreme southern part of Portugal. This dryland area is characterised by smallholdings where animal grazing and fishing are the principal occupations of the inhabitants (Joze da Silva Lopes, 1993).

3.3.1.1. Pre-1970s The Evolution of Modern Portuguese Agriculture

Many peoples have invaded the country and some stayed long enough to influence its culture and landscape of Portugal. In terms of agriculture, Portugal was positively influenced by the invasion of the Romans, in 154 BC, who implanted an agrarian system which supplied not only the local needs but also exported wine and olive oil to Rome. The Romans had a perfect ecological sense in the implanting of orchards, vineyards and olive groves. After the fall of the Roman Empire, in 476 AD, the country was invaded by the Islamic Moors in 711, who remained for only one century in the north and nearly five centuries in the south (Algarve) and introduced ingenious irrigation systems.

The 15th and 16th centuries were dominated by the discoveries, during which exotic plants were introduced "which transformed the techniques, the social structures, the economy and, as a reflex, the traditional agrarian landscapes" (Joze da Silva Lopes, 1993). For instance, maize is one of those crops, which today cultivated around 350.000 ha representing 60% of the irrigated area, and is still responsible for an important demographic increase.

Salazar was the leader that occupied the country about 30 years in within the 20th century. Portugal faced various problems during that period, couple of wars with Spain and its African territories, which were financially wear Portugal out.

Under the old regime, Portugal's private sector was dominated by some forty great families. These industrial dynasties were allied by marriage with the large, traditional landowning families of the nobility, who held most of the arable land in the southern part of the country in great estates. Many of these dynasties had business interests in Portuguese Africa. Within this elite group, the top ten families owned all the important commercial banks, which in turn controlled a disproportionate share of the national economy. Because bank officials were often members of the boards of directors of borrowing firms in whose stock the banks participated, the influence of the large banks extended to a host of commercial, industrial, and service enterprises.

Portugal's shift toward a moderately outward-looking trade and financial strategy, initiated in the late 1950s, gained momentum during the early 1960s. A growing number of industrialists, as well as government technocrats, favoured greater Portuguese integration with the industrial countries to the north as a badly needed stimulus to Portugal's economy. The rising influence of the Europe-oriented technocrats within Salazar's cabinet was confirmed by the substantial increase in the foreign investment component in projected capital formation between the first (1953-58) and second (1959-64) economic development plans. The first plan called for a foreign investment component of less than 6 percent, but the plan for the 1959-64 period envisioned a 25-percent contribution. The newly influential Europe-oriented industrial and technical groups persuaded Salazar that Portugal should become a charter member of the European Free Trade Association (EFTA) when it was organized in 1959. In the following year, Portugal also added its membership in the

General Agreement on Tariffs and Trade (GATT), the International Monetary Fund, and the World Bank (Joze da Silva Lopes, 1993).

3.3.1.2. Post-1970s; US-aid, Investment and Reconstruction

The Portuguese economy had changed significantly by 1973, compared to its composition in 1961. Total output (GDP at factor cost) grew by 120 percent in real terms. The industrial sector was three times greater, and the size of the services sector doubled; but agriculture, forestry, and fishing advanced by only 16 percent. Manufacturing, the major component of the secondary sector, was three times as large at the end of the period. Industrial expansion was concentrated in large-scale enterprises using modern technology.

The composition of GDP also changed markedly from 1961 to 1973. The share of the primary sector (agriculture, forestry, and fishing) in GDP shrank from 23 percent in 1961 to 16.8 percent in 1973, and the contribution of the secondary (or industrial) sector (manufacturing, construction, mining, and electricity, gas and water) increased from 37 percent to 44 percent during the period. The services sector's share in GDP remained constant at 39.4 percent between 1961 and 1973. Within the industrial sector, the contribution of manufacturing advanced from 30 percent to 35 percent and that of construction from 4.6 percent to 6.4 percent.

Portugal was one of the beneficiaries of the US aid under the Marshall Plan like Greece and Spain. The results of the US aid were more or less the same in Portugal like the in other countries.

TABLE 3—30 Mechanisation of Portuguese Agriculture

Years	Number of Harvesting Machines	% Growth	Number of Tractors	% Growth
1961	3980		10748	
1971	2830	-28,89	37500	248,90
1981	4558	61,06	90300	140,80
1991	5500	20,67	131473	45,60
2000	3400	-38,18	169000	28,54

Source: www.fao.org

Mechanisation of Portuguese agriculture can be seen from the table 3-30. Particularly after 1971, the level of mechanisation in Portugal has increased rapidly, especially for the number of tractors has been rising up until now.

As indicated in the previous chapters, the number of tractors and harvester machines in correlated with the level of agricultural production in the country subjected to analyse. It is the main indicator, which reflects the modernisation of the agriculture yet this analysis should be supported with various kinds of data as well.

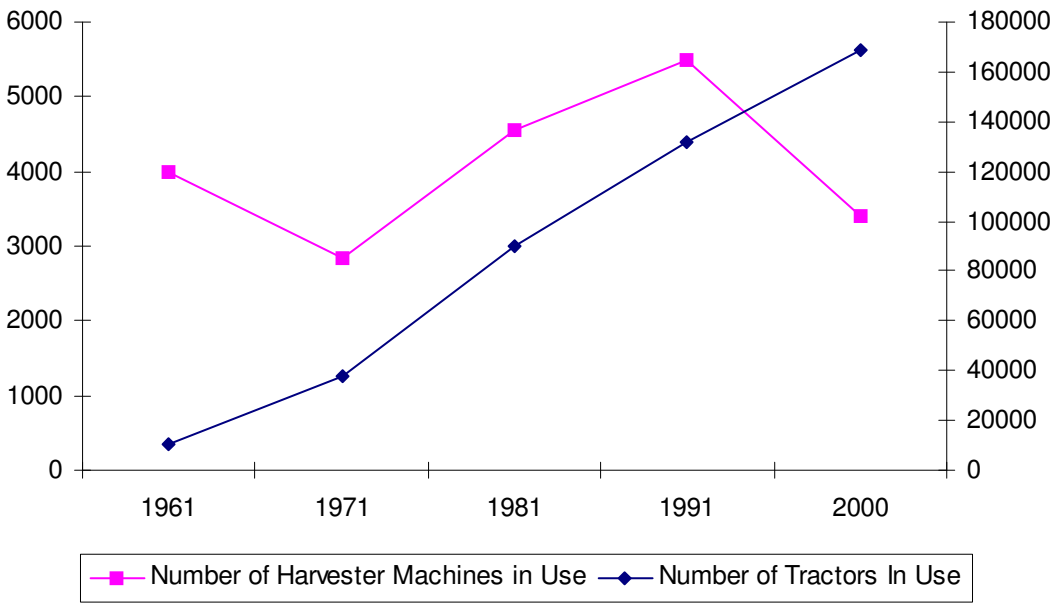

FIGURE 3-32 Mechanisation of Portuguese Agriculture

TABLE 3—31 Portuguese Agricultural Production (Net PIN Base 1989-91=100)

Year	Production
1961	74.3
1965	86.8
1970	85.1
1975	77.9
1980	71.9
1985	78.9
1990	99.7
1995	99.6
2000	103.7
2003	101.0

Source: www.fao.org

Total agricultural production of Portugal reflected various backups between 1960-1980. As clearly seen from the figure 3-33, after 1965 the agricultural production declined about 15% until 1980. But after the EU membership, the agricultural production increased rapidly by the European investments and reallocation of resources within the agricultural producers in Portugal.

Portuguese agricultural markets, both inputs and outputs, were subjected to substantial policy intervention, particularly after the revolution. Under the old regime, agricultural pricing policy was largely oriented toward the provision of low-priced foodstuffs to urban areas, which required extensive controls over imports and marketing (Joze da Silva Lopes, 1993). Three state marketing enterprises were organized after 1974, primarily to manage trade in their respective commodity groups-cereals, oilseeds, and sugar and alcohol-in pursuit of price control objectives. Public assistance to farmers and ranchers involved subsidizing intermediate inputs, primarily fuels, fertilizers, and mixed feeds.

As a condition of EC membership, Portugal adopted the Common Agricultural Policy (CAP), a basic instrument of the community's integration since 1962 (Joze da Silva Lopes, 1993). The CAP was based on the principles of common pricing, EC preference, and joint financing. As Portugal adopted the transitional arrangements leading to full compliance with the CAP, both the locus of agricultural decision-making and the level of incentives given by the system of price supports shifted from the nation to the EC. Portuguese prices of some commodities at the time of entry into the community were well above the EC levels. Cereal and dairy sectors would experience the most serious declines in real prices because they benefited most from price increases in the early 1980s and because they produced the commodities in chronic surplus in the EC.

The Alentejo wheat and livestock systems, both based on poor soils, would likely become unprofitable during the transition to EC price levels (Joze da Silva Lopes, 1993). On the other hand, the prospects for rice, tomatoes, sunflowers, and potatoes, as well as Portugal's higher quality wine systems appeared to be favourable under the CAP regime.

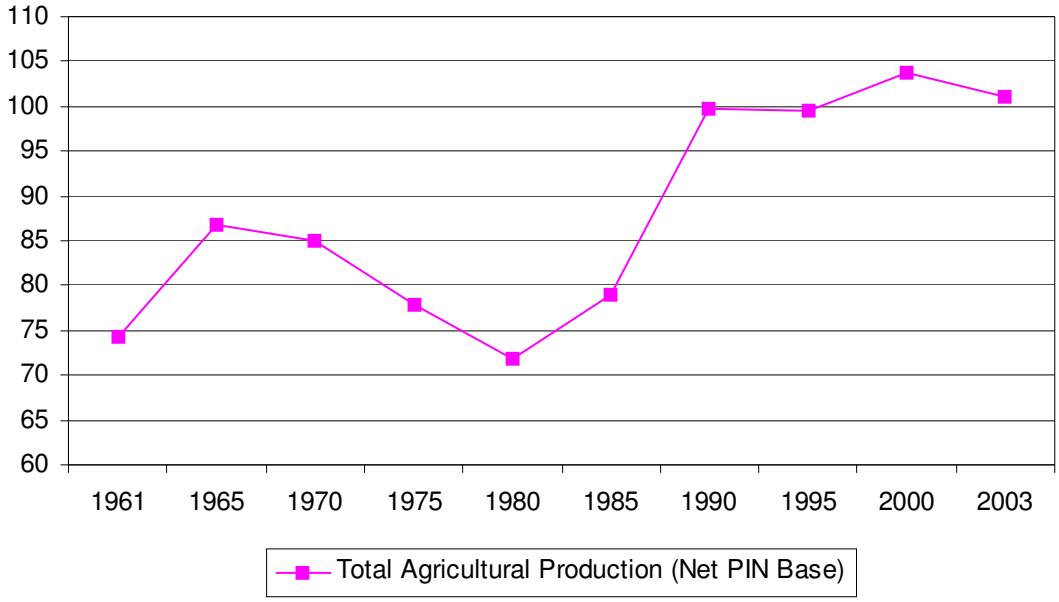

FIGURE 3-33 Agricultural Production of Portugal (Net PIN Base)

Portugal's integration to Common Agricultural Policy was not different than the other examples of accession. The Accession Treaty defined the rules for harmonising agricultural markets and structures, the system for price harmonisation, aid and specific duties as well as derogation mechanisms and structural support for development (Jose da Silva, 1993).

A mixed system was used for the transition itself, for a series of products, that globally represented no more than 15% of Portuguese production and for which no major integration difficulties were foreseen. A classical transition period was granted to last for 7 years.

For other products, for which more difficulty in integration was expected and which represented the larger part of Portuguese agricultural production including the milk, beef and pig meat sectors, fresh fruit and vegetables, cereals and rice, poultry and eggs and wine, a stage by stage transition was agreed, lasting for 10 years, divided into two 5 year period.

TABLE 3—32 Consumption of Fertilisers in Portugal, Mt (Metric Tons)

Years	Total Fertilisers	Nitrogenous Fertilizers	Phosphate Fertilizers	Potash Fertilizers
1961	68,39	59,41	10,37	138,17
1971	90,48	34,29	8,73	133,49
1981	145,04	84,68	45,11	274,84
1991	141,00	76,00	41,00	258,00
2001	117,00	68,00	43,00	228,00

Source: www.fao.org

Another indicator to focus is the amount of fertilisers used in agricultural production. Portugal's fertiliser usage was declining between 1961 and 1981, which is related to the reduction of agricultural production occurred in that period. But after 1981, the level of fertiliser used in the agricultural production of Portugal started to increase rapidly by the EU membership. The potash fertiliser usage has doubled, phosphate fertilisers increased about 5 times and nitrogenous fertilisers rose about 3 times between 1981-91 period.

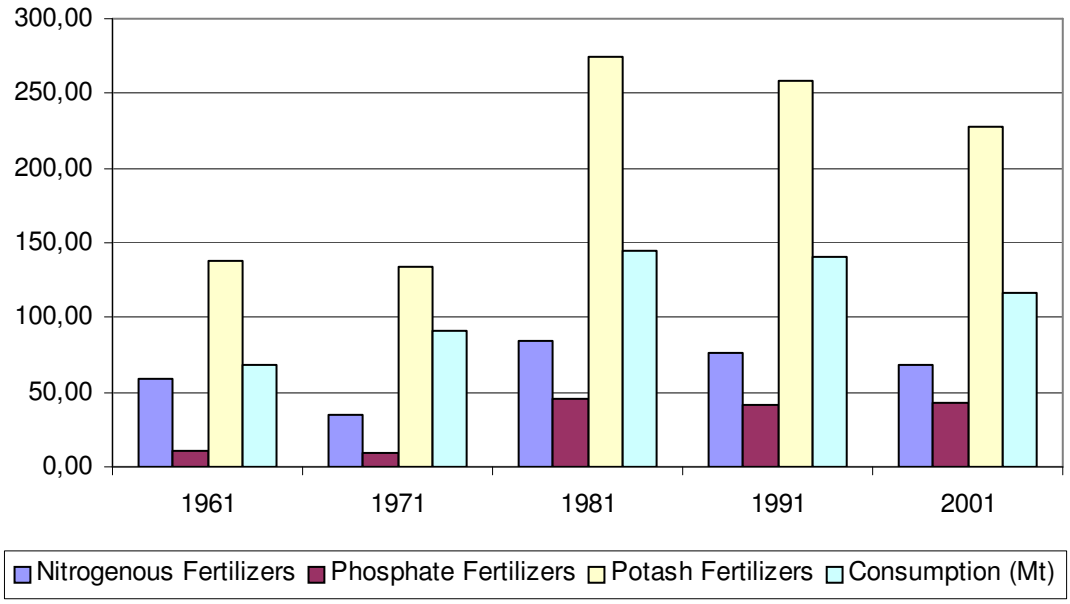

FIGURE 3-34 Change of Consumption of Fertilisers, Portugal

3.3.2. Portuguese Agriculture: Current Situation

Portugal today occupies 91.906 km^2, which is the 9^{th} biggest country of the European Union. The population of Portugal is 10.263 million and it is again the 9^{th} populated country of the EU. Portugal today has 16.920 EUR GDP/Inhabitants, which is the poorest country of the European Union after Greece. Portugal's unemployment rate is 4,1% and it is under the European average of 7,1%. Portugal has 16.868 Million Euro trade deficit in 2001. Total civilian working population of Portugal is about 5 million.

3.3.2.1. The Role of Agriculture in Portuguese Economy

In Portugal the share of agriculture in GDP is about 2,5%, which is higher than the European average of 1,7%. The share of imports of food and agricultural products in imports of all agricultural products is 11,8% and the share of exports of food and agricultural products in exports of all agricultural products is 8,6 %.

TABLE 3—33 Portuguese Agricultural Labour Force, 1950-2000

Years	Total Economically Active Labour Force (x1000)	Total Agricultural Labour Force (x1000)	Agricultural Labour force (% of Total)
1950	3458	4465	129,1
1960	3425	4195	122,5
1970	3403	3015	88,6
1980	4607	2804	60,9
1990	4823	1968	40,8
2000	5103	1434	28,1

Source: www.fao.org

Portuguese agricultural labour force has been declining gradually as it can be seen from the Table 3-33 and Figure 3-35. In 1950s and 60s, the data obtained from the FAO shows that agricultural labour force is higher than the total economically active labour force. One of the reasons about the formation of this data might be the people who work within the agricultural production might work in other businesses such as services or industry to earn additional income. Another reason might be the result of family farming with underage workers. But the main point is that in 1980 60% of economically active labour force was working in the agriculture, production this share dropped in 2000 to 28,1%.

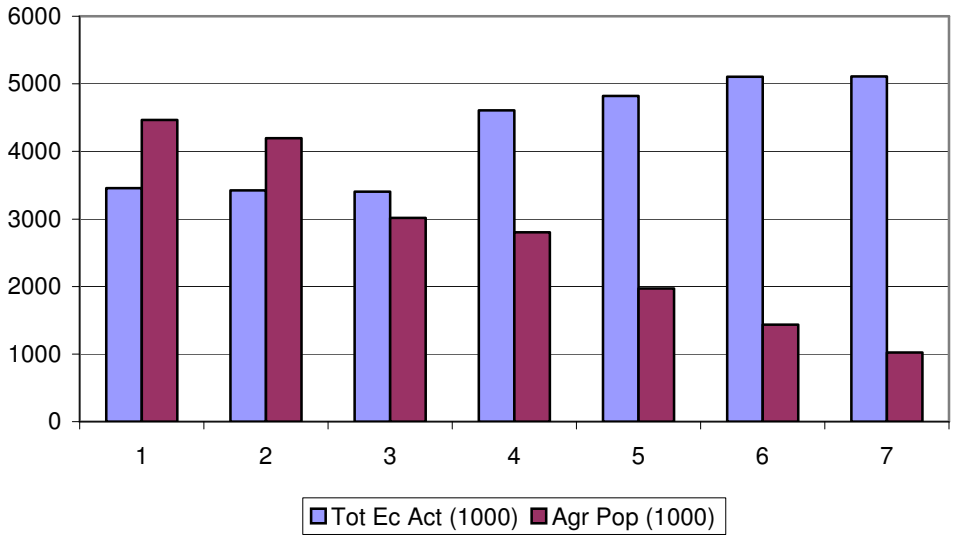

FIGURE 3-35 Portuguese Agricultural Labour Force (1950-2000)

3.3.2.2. Agricultural Production and Consumption In Portugal

76% of Portugal's agricultural production consists of fresh vegetables (13,7%), fresh fruit (12,8%), milk (12%), pigs (9,6%), poultry (8%), wine and must (8%), cattle (5,7%), maize (3,6%) and sheep & goats (2,8%). Typical Mediterranean influence can easily be seen from the product range of Portugal.

TABLE 3—34 Share of Agricultural Products, (Portugal)

Products	Percentage (%)
Fresh vegetables	13,7
Fresh fruit	12,8
Milk	12,0
Pigs	9,6
Poultry	8,0
Wine and must	8,0
Cattle	5,7
Maize	3,6
Sheep and goats	2,8
Wheat	1,4
Eggs	1,4
Rice	0,9
Olive oil	0,7
Tobacco	0,4
Oilseeds	0,4
Oats	0,2
Sugarbeet	0,2
Rye	0,1
Barley	0,1
Seeds	:
Textile fibres	:

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

According to "agricultural situation in the European Union, 2000 report" Portugal supplies 6% of total rice production, 4,3% of total fresh fruits, 3,9% of total poultry, 3,8% of total fresh vegetables and 3,8% of total wine and must production of the European Union. In this respect, Portugal can be considered as a small country among the members of the EU.

TABLE 3—35 Primary Crop Production Between 1961-2002, Portugal

Year	Vegetables Melons, Total Production (Mt)	Wheat Production (Mt)	Fruit excl Melons, Total Production (Mt)	Maize Production (Mt)	Barley Production (Mt)	Oil of Olive (Mt)
1961	998,350	429,643	1825,889	632,015	52,051	123,431
1971	1630,610	808,510	1922,387	570,396	85,000	45,78
1981	1457,822	318,631	1731,875	420,240	40,815	25,11
1991	2053,300	618,697	2230,023	656,175	124,104	615,20
2002	2224,635	434,005	2019,969	790,301	20,024	3400,00

Source: www.fao.org

Portugal's production of primary agricultural products reflects a volatile structure within the past 40 years. As it can be seen from the Figure 3-36 wheat production increased rapidly between 1961-71 period but after the revolution, the production of wheat decreased about 60% which is a very important reduction for Portugal. After the EU membership, wheat production increased rapidly but after 1991 it has slumped again.

For maize and barley, the production pattern were decreasing up until 1981 but both of them increased after the EU accession. Maize production has been increasing since 1981 but for barley the situation was opposite after 1991.

Vegetables and fruits production have been increasing in Portugal. Nonetheless, the massive increase in olive oil production should be emphasised. Since 1981, the amount of olive oil production increased about 150 times in Portugal. It is a good example of reallocation of resources in order to market needs in the accession process. For instance, as it can be seen from the Figure 3-36, some products' production has been declining but some has been increasing. The new

market facilities which EU membership enabled Portuguese producers, as well as European agricultural investors created the ways of efficient production for some specific products, such as olive oil.

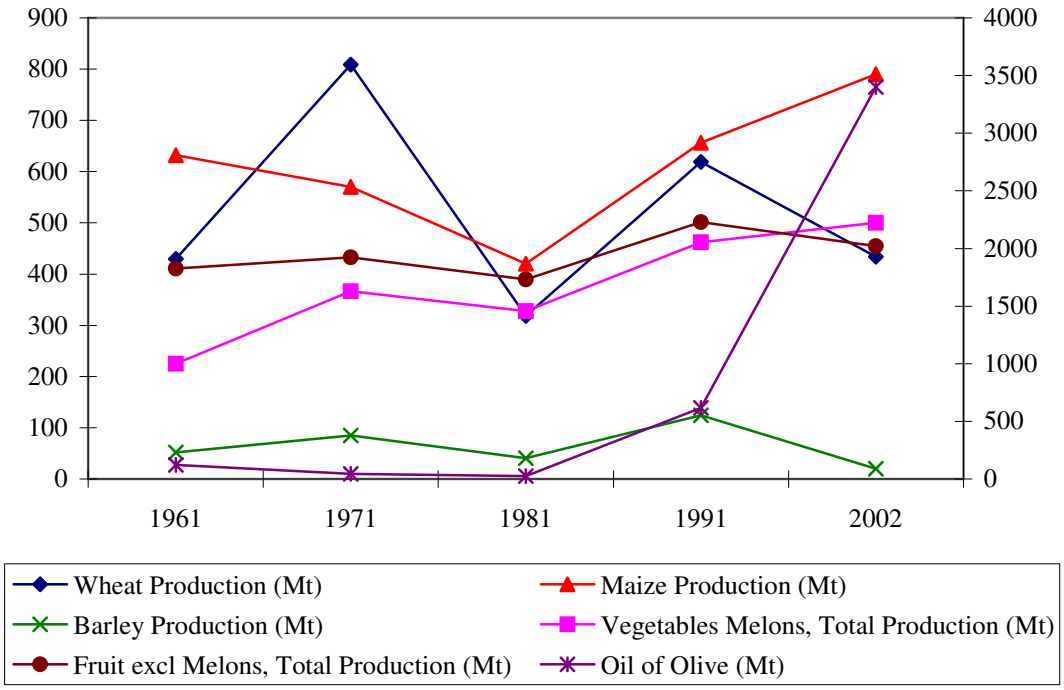

FIGURE 3-36 Change of Production about Primary Crops, Portugal 1961-2002

The area under cultivation for the primary products has been in a gradual decline since 1950s. For barley, the area harvested today is only 10% of the area harvested in 1961. The area harvested for maize in 1961 is about 4 times higher than the area harvested in 2002. Similarly, the situation is more or less the same for wheat.

TABLE 3—36 Area Harvested for Primary Crops, 1961-2002, Portugal (Ha)

Year	Barley	Fruit excl Melons, Total	Maize	Vegetables & Melons, Total	Wheat	Olives
1961	126,771	581,57	494,577	61,18	659,517	:
1971	92,1	528,945	412,708	80,84	514,8	:
1981	74,097	422,591	291,838	91,615	343,511	:
1991	66,045	483,659	215,347	78,93	294,874	333,757
2002	11,788	411,601	154	84,9	187	420

Source: www.fao.org

One of the important points about the Table 3-36 is, even though the area harvested today is 30% of 1961, total maize production is about 20% higher than 1961. Situation for fruits and vegetables are not different than of maize. In this regard, Portuguese agriculture today is more productive than 1961 level in terms of area harvested and in terms of the production level.

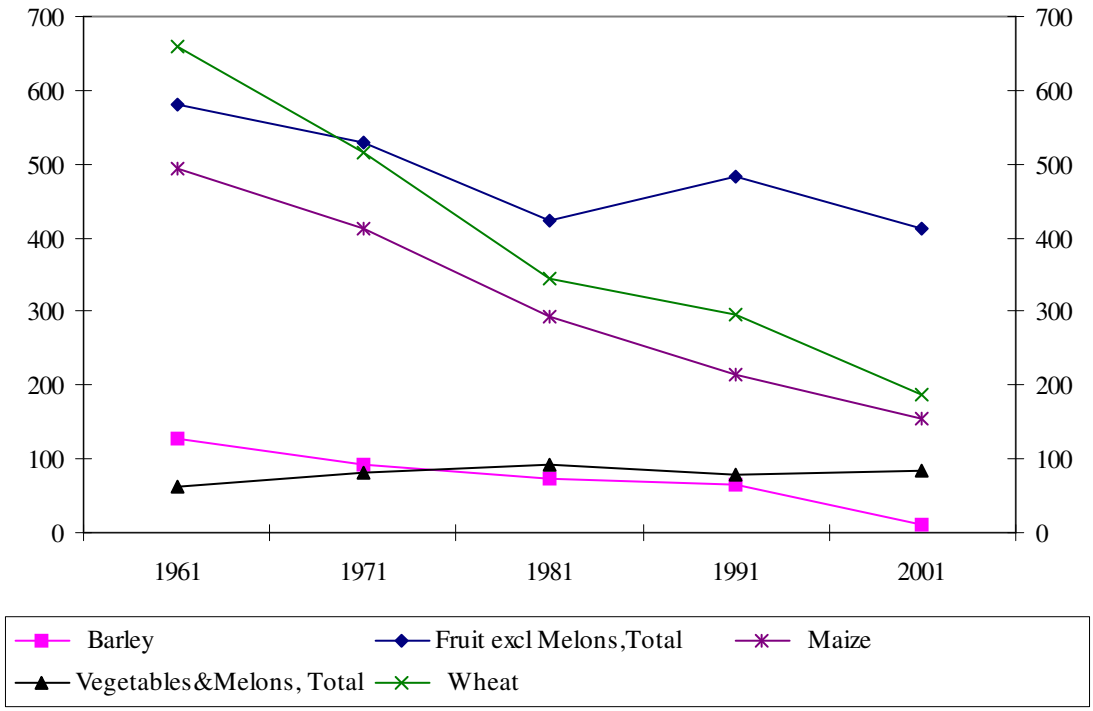

FIGURE 3-37 Area Harvested for Primary Crops in Portugal, 1961-2002

Productivity of Portuguese agriculture can be analysed from Table 3-37 more easily. For instance, the amount of vegetables and melons produced per hectare in 2002 is 66% higher than in 1961. The yield of fruits in 2002 is about 51%, for barley it is 250% and for maize it is 480% higher than 1961 level.

TABLE 3—37 Yields of the Primary Crops in Portuguese Agriculture, 1961-2002

Year	Vegetables & Melons, Yield (Hg/Ha) [a] (X10)	Wheat Yield (Hg/Ha)	Fruit excl Melons, Yield (Hg/Ha)	Maize Yield (Hg/Ha)	Barley Yield (Hg/Ha)	Olives (Hg/Ha)
1961	163,182	6,515	31,396	12,779	4,106	0
1971	201,708	15,705	36,344	13,821	9,229	0
1981	159,125	9,276	40,982	14,4	5,508	0
1991	260,142	20,982	46,107	30,471	18,791	13,289
2002	271,724	8,503	47,434	58,087	10,463	6,452

a) Hg/Ha, hectogram/hectare, 1 hectogram=100 gr.
Source: www.fao.org

It is not possible to determine the full implications of EU membership on yields in Portugal. One of the important results of the integration is the change of consumer demand towards capital-intensive products. With the data given, it is difficult to analyse to the demand shift linked with EU membership.

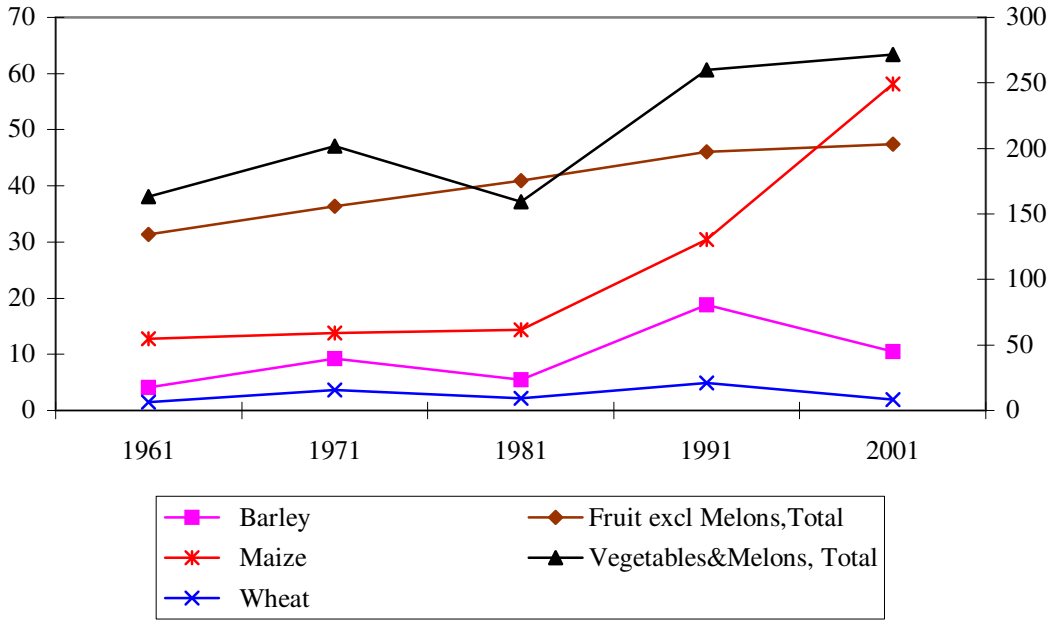

FIGURE 3-38 Yields of Primary Crops in Portugal, 1961-2002

Diary products as well as meat considered as capital-intensive products of agricultural production. Portugal's livestock population is more or less the same for the last 4 decades. As it can be seen from the Table 3-38, the number of cattle, sheep and goats increased slightly and only number of pigs exhibits an increase, which implies 53% increase in 40 years.

But the production of meat and milk increased rapidly within the last 40 years. The meat production was 173,603 tonnes in 1961 of which is about 6 times higher today than 1961. For milk, there has been a gradual increase during the last 4 decades. 586,987 tonnes per year in 1961 has become 2,053,742 tonnes per year in 2002.

TABLE 3—38 Primary Live Animals and Production of Meat & Milk, (x1000)

Year	Cattle (No of Heads)	Sheep & Goats (No of Heads)	Pigs (No of Heads)	Meat, Total Production (kg)	Milk, Total Production (kg)
1961	1.108.000	5029607	1.527.000	173,603	586.987
1971	1.253.000	3971796	1.899.300	271,202	698.911
1981	1.379.000	4520750	3.600.000	467,8	930.874
1991	1.375.000	5673857	2.664.000	580,706	1.686.767
2002	1.414.000	5578623	2.338.000	781,523	2.053.742

Source: www.fao.org

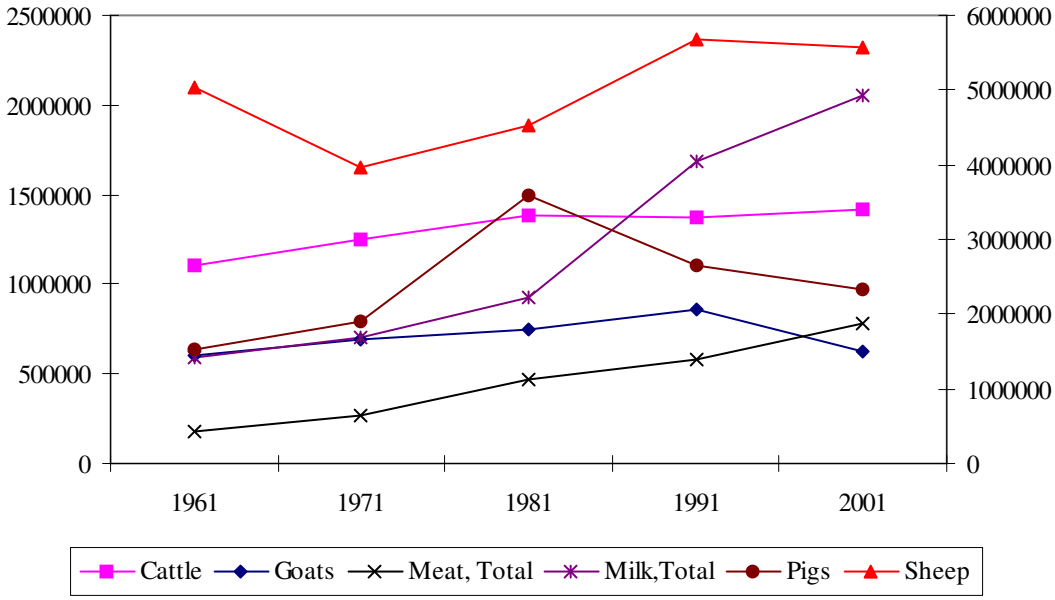

FIGURE 3-39 Population and Production Change for Live Animals and Livestock

3.3.2.3. Farm Structure in Portugal

Portuguese farm structure isn't different than the other Mediterranean examples. The vast majority of the farms are small and medium small farms. Family farming is again at the centre of the rural policy of Portugal like in other Mediterranean members of the EU. As we can see from the Table 3-39 and Figure 3-40, 76% of the total number of holdings in Portugal are small units, which have less

than 8 European size units (ESU). Only 9% of the farms are large farms, which employ modern, technological methods.

TABLE 3—39 Economic Size of Holdings in European Size Units (ESU)

Economic Size of Holding in European Size Units ESU	Number of Holdings in the FADN Field of Observation	Area (Ha UAA)	Total Output (1000 ECU, EUR)
	2000	2000	2000
Small (< 8 ESU)	249 515	6,36	5,44
Medium small (8 - 16 ESU)	36 315	16,82	15,86
Medium large (16 - 40 ESU)	20 240	33,35	35,54
Large (40 - 100 ESU)	6 392	90,67	84,35
Very large (> 100 ESU)	1 731	196,31	190,70
All sizes	314 193	12,07	11,21

Source: The Agricultural Situation in the European Union, 2000 Report, EU Commission

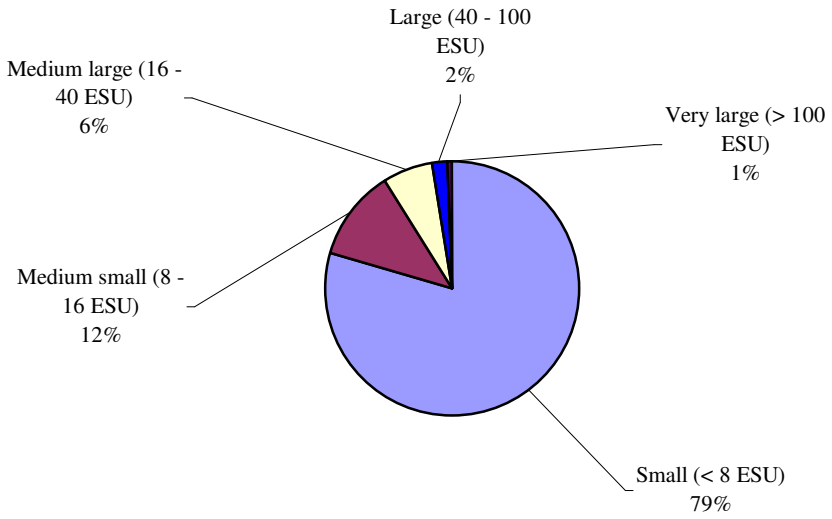

FIGURE 3-40 Number of Holdings in Portuguese Agriculture, 2000

The area under cultivation by the large farms represents 82% of the total arable land of Portugal. Essentially, it is one of the highest rates not only within the Mediterranean region but also European Union as a whole. In economical terms, it is a positive structure to control the majority of the agricultural area by large farms. For

instance, economies of scale and other cost efficiencies can be utilised by the large management units. However, the structure of the Portuguese land distribution doesn't evolve from the fact of efficiencies or other economical factors. Portugal's small farmers have been suffering from the unequal distribution of land for so many decades. Portuguese administrators attempted to implement land reform various times after 1970s but they couldn't achieve it yet.

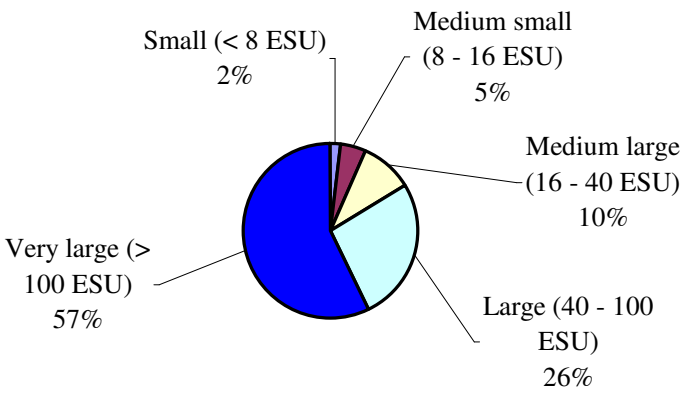

FIGURE 3-41 Area Cultivated By Size of Holdings in Portuguese Agriculture

The large farms mainly supply Portugal's agricultural production. As outlined in the figure 3-42, large farms produce 93% of the total agricultural production. 57% of the total production is produced by very large farm units, which are larger than 100 ESU.

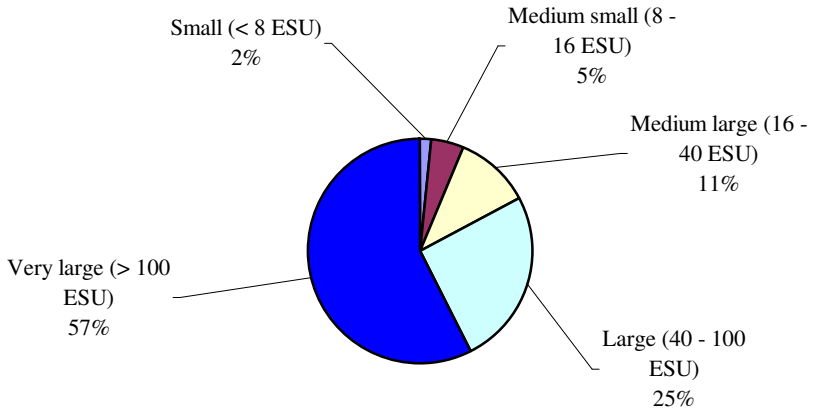

FIGURE 3-42 Distribution of Total Output Per Holding in 1000 ECU-EUR, 2000

3.3.2.4. Agricultural Trade of Portugal within EU

Portugal reflects different agricultural production structure than the other Mediterranean countries. As stated in the previous chapter, the main production unit of Portuguese agricultural are as large or very large farms. This structural difference persists is reflected to commodity composition of Portugal's exports.

66% of the total Portuguese agricultural exports are processed products. In 2000 (Table 3-40), 27% of Portugal's exports to European Union member states consist of beverages, spirits and vinegar. 13,2% of the total agricultural export products of Portugal are fish and fish products. Diary products took the 3rd place

among most exported items of Portugal, (11,48%). Preparations of vegetables, fruits, nuts and other parts of plants are at the 4th rank (8,42%). meat and meat products, fish, beverages, spirits, cereals, diary products and preparations of diary products are the most imported agricultural items of Portugal.

Portugal was a net importer of agricultural products in the year 2000. The export-import ratio of Portugal is about 39%, which means that the total exports of Portugal is 39% of her total imports.

TABLE 3—40 Agricultural Imports and Exports, Intra EU, 2000, 1000 EUR

Product Code [a]	Export (EUR)	(%)	Import (EUR)	(%)	Balance (EUR)
01	17953	1,39	94140	2,83	-76187
02	10405	0,80	446419	13,44	-436014
03	171008	13,22	400435	12,05	-229427
04	148491	11,48	225168	6,78	-76677
05	26133	2,02	24793	0,75	1340
06	13419	1,04	44167	1,33	-30748
07	56778	4,39	123718	3,72	-66940
08	61188	4,73	184373	5,55	-123185
09	12158	0,94	35223	1,06	-23065
10	19182	1,48	315892	9,51	-296710
11	4727	0,37	17096	0,51	-12369
12	16859	1,30	40434	1,22	-23575
13	8177	0,63	5523	0,17	2654
14	256	0,02	370	0,01	-114
15	28349	2,19	124127	3,74	-95778
16	68553	5,30	70165	2,11	-1612
17	29237	2,26	49699	1,50	-20462
18	3429	0,27	102096	3,07	-98667
19	38255	2,96	218128	6,57	-179873
20	108934	8,42	138083	4,16	-29149
21	48799	3,77	145719	4,39	-96920
22	361574	27,96	357312	10,75	4262
23	10530	0,81	114078	3,43	-103548
24	29009	2,24	45228	1,36	-16219
Total	1293403	100	3322386	100	-2028983

a. See page 34 for the detailed names of the products
Source: Eurostat, Intra and Extra EU Trade Data

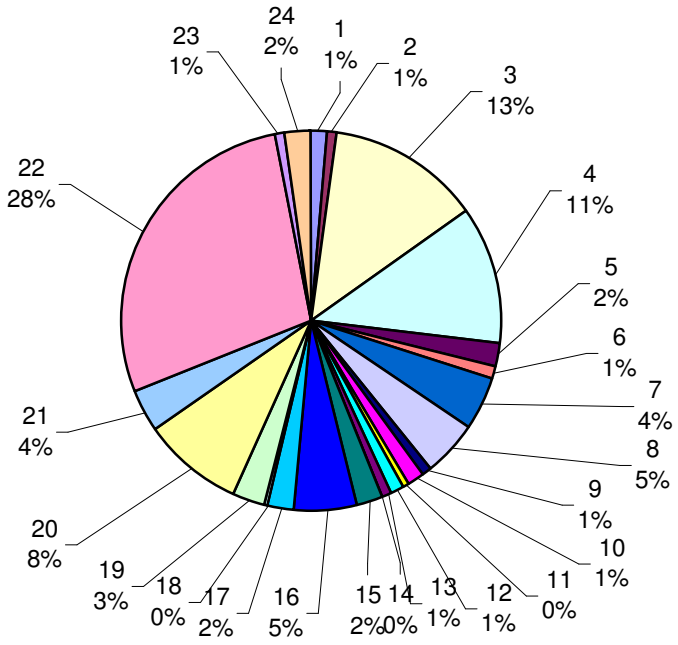

FIGURE 3-43 Agricultural Exports of Portugal to EU, 2000

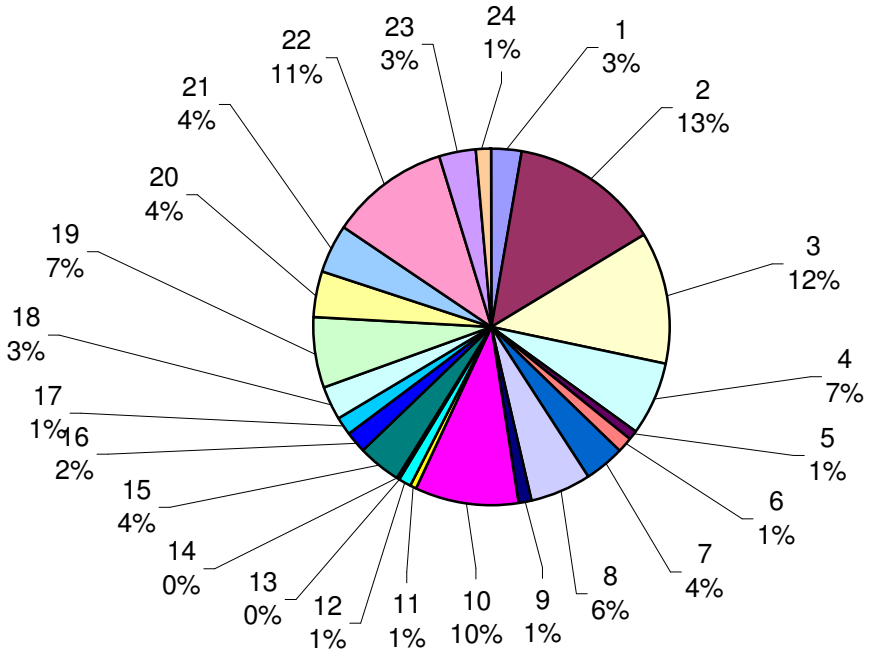

FIGURE 3-44 Agricultural Imports of Portugal from EU, 2000

One of the important aspects of the EU enlargement for the countries is the trade-diversion effect. As we have seen in the Spanish and Greek cases, The countries which are integrated to the European Union has a strong tendency to increase extra trade with their neighbours. There are various reasons such as, the cost advantage of the transportation, the similar taste and cultural composition of the countries to create this kind of trade structure with the neighbouring countries even if they were enemies in the past, like Spain and Portugal.

TABLE 3—41 Portuguese Agro-imports and Agro-exports with EU

Member States	Export [a] (EUR)	% Of Total Exp.	Import [a] (EUR)	% Of Total Imp.	Balance
France	235290	18,19	624270	18,79	-388980
Netherlands	83235	6,44	221816	6,68	-138581
Germany	68373	5,29	198754	5,98	-130381
Italy	94654	7,32	77794	2,34	16860
Utd. Kingdom	177675	13,74	270776	8,15	-93101
Ireland	6493	0,50	50996	1,53	-44503
Denmark	26977	2,09	71485	2,15	-44508
Greece	5169	0,40	17454	0,53	-12285
Spain	485758	37,56	1684596	50,71	-1198838
Belgium	69695	5,39	82644	2,49	-12949
Luxembourg	11630	0,90	3663	0,11	7967
Sweden	19643	1,52	14085	0,42	5558
Finland	4710	0,36	241	0,01	4469
Austria	4098	0,32	3654	0,11	444
EUR	1293400	100	3322228	100	-2028828

a. Aggregate values of agricultural products: (1+2+3…. +24), 1000 EUR
Source: Source: Eurostat, Intra and Extra EU Trade Data, 2000

As it can be seen from the Table 3—41, Spain has the biggest share of total Portuguese agricultural exports, which is 50,71%. This situation is very impressive. Portugal and Spain were the two long lasting enemies until their integration to European Union. There was no trade accounted between these countries before their accession to EU.

France is the second biggest trade partner of Portugal. 18,79% of total agricultural exports of Portugal are directed to France. United Kingdom imports 8,15% of total Portuguese agricultural exports, which is the third biggest shareholder among European Union member states. The special relationship between Portugal and UK coming from their historical ties creates today's trade composition as well. UK is one of the biggest trade partners of Portugal not only at agricultural products but also about other goods and services. Netherlands and Germany are also two big demanders of Portuguese agricultural products, 7% and 6% respectively.

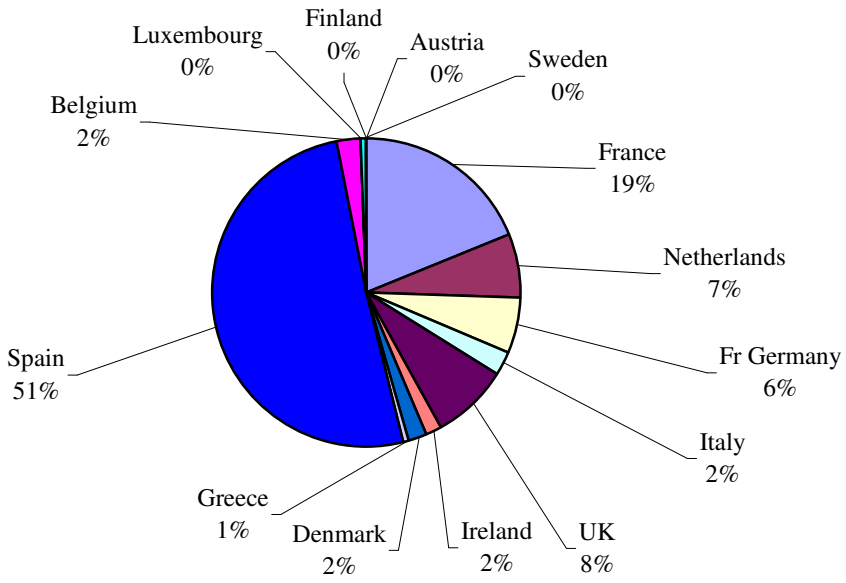

FIGURE 3-45 Agricultural Exports of Portuguese from the EU, 2000

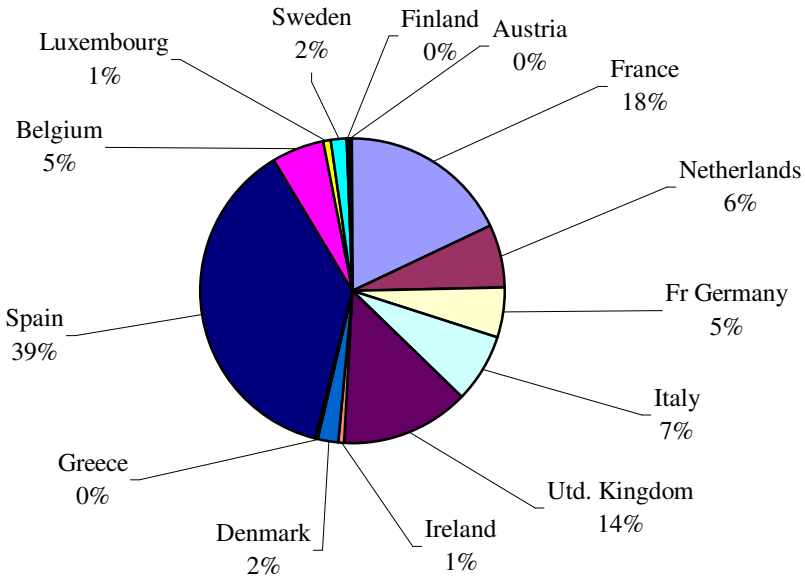

FIGURE 3-46 Portugal's Agricultural Imports from the EU Member States, 2000

Table 3—42 compares the external trade of Portugal between the European Union and the rest of the world. In this comparison, it can be seen that 53,56% of Portugal's total agricultural imports come from the whole world excluding EU, whereas 46,44% of the total agricultural imports of Portugal come from the European Union countries. Compared to other EU members, at least for Spain and Greece, this rate seems higher. One explanation is Portugal's relationship with its former African territories as well as America and Canada.

In terms of Portugal's exports, 87,35% of her total agricultural exports directs to European Union member states whereas 12,65% to the rest of the world. The rate of exports going to EU and the rest of the world is one of the highest rates among the member states of the European Union.

TABLE 3—42 Portugal's Foreign Trade with EU and Rest of the World, 2000

Trade	Total Trade	Extra-EU Trade	% Of Total Trade	Intra-EU Trade	% Of Total Trade
Import	2785273	1491873	53,56	1293400	46,44
Export	3803542	481314	12,65	3322228	87,35

b. Total agricultural trade with North and South American countries. (01+02+03…+24) x1000EUR
Source: Eurostat intra and extra EU trade, 2000

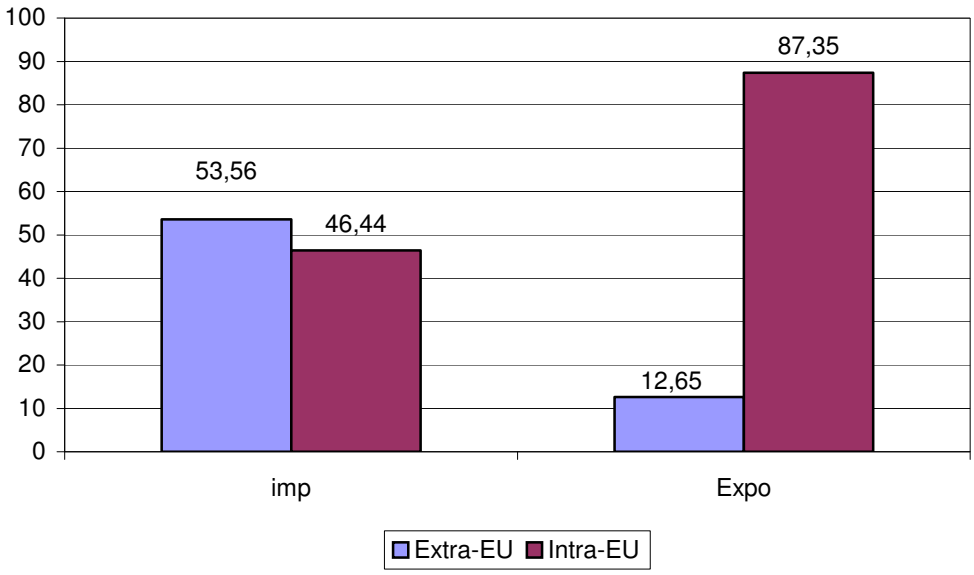

FIGURE 3-47 Portugal's Foreign Trade Between the EU and the ROW

CHAPTER IV

CONCLUSION

Agricultural development of Greece, Portugal and Spain within the period of their membership to the European Union outlined in this thesis. All countries reflect more or less the same pattern in terms of their production, consumption and external trade. However Spain, being the biggest country in terms of her production, consumption and external trade volume, can be argued as more advanced and competitive compared to Greece and Portugal.

One of the main results of the thesis for Greece, Portugal and Spain is the common production pattern, which changed from labour intensive products to capital-intensive products. Even though they have so much way to go for competing with the other European countries, considering the low amount of support they received and the WTO pressure, they could be seen as successful.

Secondly, the composition of consumption reflects the same trend for Greece, Portugal and Spain. Their EU accession accelerated the move from low-income

elastic and high labour intensive products towards high-income elastic products and capital-intensive products such as diary products, fish and meat and other kinds of processed foods.

The third common factor for Greece, Portugal and Spain is the structure of their external trade. The three countries created strong trade relations in terms of their agricultural products with European Union member states after their accession. European Union is the basic trade partner for each Mediterranean country. Their exports, as well as imports with European Union are much higher than their trade with other countries.

Each of these countries has higher agricultural trade volumes within their regional neighbours rather than north European member states. Each country has its agricultural trade mostly within the Mediterranean region. Therefore, the regional trade aspect of the European Union is one of the most important opportunities for the accession countries, even though they were enemies like Spain and Portugal in the past.

Most of the exportable agricultural production in Greece, Portugal and Spain is supplied by the large or medium large farms. But the majority of the farms are small and very small farms. Each of them experienced land reform in their history. None of the reform was successful in increasing their agricultural production. But the land reform should be evaluated in political and sociological terms, too.

Human desertification or declining number of people working in agro business is a fact in Greek, Portuguese and Spanish rural environment. There is no

mathematical evidence about a link between the EU membership and the reduction of the people working in the agricultural production but especially for Spain and Greece, there were high rates of people moving from their territories towards north European countries for better jobs and working conditions. Apart from the EU membership, the number of people working in the agro business has a tendency to decline within the countries. Agriculture today is much more professional and advanced. Capital investment requirement should be emphasised for increased competition. At the one side it can be observed that people are moving out of the business but at the other side there are companies investing in agricultural production with sophisticated technologies.

4.1. Turkey's Future Membership and Possible Agricultural Developments

Turkey has been announced as a candidate country for membership to the European Union in Helsinki Summit. It is expected that Turkey will join to the European Union within the next 10-15 years.

As indicated within the whole thesis, agricultural production, trade and consumption in the countries joining to the European Union reflects various adaptation stages. For instance, the change of composition of consumption, composition of production and composition of trade.

Turkey is located in the same region of Greece, Spain and Portugal and it has similar conditions for agricultural production. Her product group is in the same context of Mediterranean countries.

The main change of EU membership for the countries in terms of agriculture is the shift of their trade structure. It should be expected for Turkey that the intra-regional trade will increase by the EU membership as it was for Greece, Italy, France, Spain and Portugal. Greece being the closest country to Turkey will create the biggest demand for Turkish agricultural products as well as supply for Turkish agricultural consumption. Italy and Spain will take big shares in trade with Turkey.

France being the biggest country with a huge agricultural community will contain a high amount of trade with Turkey in terms of agricultural products and Germany being the most advanced economy within the Community will increase her agricultural trade with Turkey.

Turkey is one of the main producers of vegetables, fruits, nuts and tobacco. It should be expected that there will be production shifts to specific products for which Turkey has a comparative advantage. Another expectation is, that there will be capital inflow from the advanced agricultural companies of the European Union to Turkey.

Agriculture will be an important component of the accession negotiations. There are fears not only of the Turkish producers but also of the European producers and tax payers as well. But like in Greece, Portugal and Spain, issues related with agriculture between EU and Turkey will be resolved most likely with the principles of mutual benefit.

To sum up, EU is a very big market for Turkish agricultural producers. Turkey being located on a huge land with its relatively advantageous climate will respond the market changes quickly and like in Greece, Portugal and Spain, Turkey will improve its agricultural markets with the EU membership.

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