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This report has been written by Samir MILI and Mario MAHLAU (CISC, Madrid) in collaboration with the CIHEAM-IAM.M

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Introduction

The overall objective of EU-MED AGPOL project is to estimate and describe the impacts on European countries of agricultural trade liberalization in the Mediterranean region. The project has nine work packages that characterize the agricultural and agro-industry sectors in Mediterranean countries and the EU (1 and 2); describe and quantify the EU protection systems for the same products (3); develop specific liberalization scenarios (4); estimate the production and export potential for each Mediterranean country (5); quantify changes in European and Mediterranean production, imports, and exports (6); examine interaction with world markets and international negotiations (7); estimate changes in European production, incomes, budgets, social changes, etc. (8); and disseminate results (9).

According to the work plan regarding the first reporting period, activities performed by the CSIC's team have principally concerned objectives stated in work package 2 (WP2). The main objective of WP2 is to characterize the agricultural production sub-sectors in major European regions for production of fruits, vegetables, and olive oil. That characterization should cover aspects such as natural endowment; farm structure; employment; farm capital and investment; rural infrastructure; marketing systems; key characteristics of the food processing, distribution, and retailing systems; production and consumption levels and trends; yields and intermediate output use; price levels, amongst others. At last, this analysis should provide detailed description of European production of fruits, vegetables, olive oil, and that information will serve as point of departure for the analysis of impacts on the EU of trade liberalization with the Mediterranean countries.

The olive oil part of this work package is led by the CSIC team in Madrid. In order to achieve the objectives stated for EU olive oil sector characterization, the CSIC team has firstly elaborated an analytical scheme illustrating concrete variables, factors and aspects to be analyzed, and methodology to be used in the olive oil report. That scheme has been conceived in agreement with INRA-Montpellier team (responsible for fruits and vegetables part) in order to preserve certain homogeneity and unity in the analysis in the whole WP2, albeit obviously considering the product and sectoral particularities as well as data availability in each case.

The analytical approach used relies basically upon conventional sectoral analysis methods and case studies, using product marketing systems approaches in order to take into account not only the global aggregates, but also the role and the dynamics of institutions and economic agents involved in the whole marketing chain (producers, manufacturers, distributors, exporters/importers, consumers) and stakeholders in general.

The analytical scheme (see full document on the project website) used for this report is structured into four parts. Product categories concerned are extra virgin olive oil, virgin olive oil, olive oil (blend of refined and virgin olive oil), olive-pomace oil. Countries explored are Spain, Italy, Greece, Portugal and France, and the period of analysis is 1990 to 2005.

This report thus is structured into four parts. The first part deals with the position of Europe in olive oil world production and trade, namely 1) world production, surfaces and yields (special emphasis on European producers), imports, exports, average prices, 2) macro-level importance of olive oil in Europe: share of olive oil in total agricultural output, share of surfaces with olives in total UAA, share of imports of olive oil/total imports of agricultural products, share of exports of olive oil/total exports of agricultural products...

The second part refers to the social and institutional environment, particularly the evolution of consumption levels and consumer behaviour, Common Agricultural Policy (CAP) for olive oil, international agricultural agreements and negotiations underway (WTO negotiations and bilateral agreements), technical framing of the sector (investigation and divulgation, innovations, quality and control, certification bodies...), organisation of the profession (producers and exporters associations, inter-professions, local administration...), national and regional support in the sector...

The third part explores olive and olive oil production systems and their compared performances: 1) conventional production systems (economic and technical features), emergent production systems at farm level (organic products, integrated production, precision production), production systems at industrial level (first and second transformation stages), 2) economic organization and structure: farms: number, structure, physical and economic size, specialization/ diversification, status, labour force...), organization of the mills (first industrial transformation), concentration of supply, producer organizations (cooperatives...), principal operators and dominating strategies, organization of the second industrial transformation: structure of the industry of olive oil refining and packing, governance of enterprises, capital composition and ownership: public, private, familiar, presence on the stock exchange, industrial model: production technologies, localization of production, outlets: modern retail outlets, catering outlets...

The fourth part focuses on marketing structures and business strategies: 1) diversity of operators and marketing channels: identification of principal operators in each stage of the supply chain: olive producers, first processing stage (milling industry), second processing stage (refining and packing), wholesalers, retailers (large distribution formats, traditional commerce, discount), importers, exporters, 2) predominant strategies: strategies used by the companies in accordance with their status, their size and their activities, measures of structural change (introduction in foreign markets, internal growth ...), product valorisation and supply strategies: certification and quality measures (PDO, IGP, organic products...), brand policy (producer vs distributor brands), supply segmentation, product innovation, factors

that determine purchases, marketing mix strategies (branding, pricing, advertising, product segmentation, completion of product lines...), target markets: in domestic markets, in the EU and beyond...

This investigation has been accomplished basically with data collected from secondary sources, distinguishing between three categories of sources: 1) public, official (national and international) sources: IOOC, FAO, Eurostat, WTO, official national sources...; 2) private (professional associations, private consulting): Alimarket, Asoliva, Anierac, ACNielsen..., and 3) published literature and data bases.

In a next step, findings will be verified and validated by consultations with experts in the sector (production, industry, distribution). Moreover, the report will be reviewed in order to eventually integrate further useful information derived from the olive oil report (mainly for Greece) submitted by MEDFROL project partners (see plan for collaboration between MEDFROL and EU-MED AGPOL projects).

Finally, it is worth mentioning that in another contribution we analyse one of the most challenging issues for the EU olive oil producers for the next years: the international marketing on emergent, non-traditional markets, taking into consideration the changing international economic and institutional scenario (see contribution on the project website).

I. Position of Europe in olive oil world production and trade

I.1. Europe and its competitors

I.1.1. Production

The title edible oils includes olive oil¹ and seed oils. Both of them have differentiated production chains, although some agents of these chains are common. In the olive oil sector, according to the markets for the final products obtained, there may be distinguished three different chains. On the one hand, the chain of virgin oils, which are extracted mechanically and comprises “extra virgin”, “virgin” and “lampante” olive oils. On the other hand, the chain of “composed” olive oil, which is a blend of refined and “virgin” or “extra virgin” olive oil. Finally, the chain of olive pomace oil, that is a

¹ The denominations of different types of olive oils have changed recently. The EU Regulation 1513/2001 of the European Council, developed in the Regulation 1019/2002 of the 13th June, which came into force on 1st November 2003, has modified the basic Regulation 136/1966, concretely the Annexes of denominations and definitions of olive oils and olive-pomace oil. At present the olive oils eligible for consumption are: *olive oil*, which contains exclusively refined and virgin olive oils, *extra virgin olive oil* (less than 0.8° acidity), *virgin olive oil* (0.8 to 2° acidity) and *olive-pomace oil*. Intermediate products are: crude olive-pomace oil, refined olive-pomace oil, extra virgin olive oil, virgin olive oil, lampante olive oil and refined olive oil. Some national institutions maintain other denominations, which necessarily have to be respected in this study. Finally, the trade sector uses some additional denominations, for instance, the Spanish Pool net has the category “other oils with inferior quality”.

blend of refined olive pomace oil and “virgin” or extra virgin” olive oil. Some phases of these chains are common (production of olives, grinding, packing). Indeed, to some extent the production of these final products is complementary.

Since 1990, world production of olive oils doubled, climbing from 1,406,500 t (1990/91) to 2,766,000 t (2004/05, provisional figure). The rise in production was particularly significant since 1995/96, when 1,718,500 t were produced. Between 2000/01 and 2004/05 annual production averaged 2,763,000 t, 33% more than the average of the 1990s (crop years 1990/91 to 1999/2000). Production first topped the three million mark in the crop year 2003/04, when it was well above (3,162,000 t) the production in the previous seasons, due *inter alia* to favourable climate condition in most production regions.

Almost the whole olive oil production – more than 95% - is concentrated in the Mediterranean countries, although olive growing is gradually spreading in newcomers, such as Argentina, Chile, China, Brazil, Australia and South Africa, amongst others. The European Union (EU) accounted for 80% of average world production during the campaigns 2000/01 to 2004/05. This means an increase of the EU share of world production since the 1990s (crop years 1990/91 to 1999/2000) by 4%. The main reasons for this evolution were the improvement of the production techniques, especially in the new plantations, the increase in irrigation (which triplicates or multiplies by four yields), and the positive impact of the production aid (especially in the EU). Parallel to the increase of the produced quantities, the quality of olive oil has improved worldwide as a consequence of the modernization of the producing and manufacturing techniques.

In the crop year 2004/05, 2,154,500 t olive oil was produced in the EU, compared to 994,000 t in 1990/91. Spain, Italy and Greece produced 98% of EU production. Up to the first half of the 1980s, Italy was the leading producer worldwide; from the second half onwards, Spain became the top producer due to its larger production capacity. Syria, Tunisia and Turkey accounted for approximately 14% of the world total in the campaigns 2000/1 to 2004/05. More than 90% of world production is concentrated in six countries.

When itemised by country and region, it becomes apparent that in the early 2000s (crop years 2000/01 to 2004/05) annual olive oil production averaged 1,118,100 t in Spain, which is 65% above the average annual Spanish production in the 1990s (1990/91 to 1999/2000, see table 1). In this period, Spain increased its share in total EU production by 8% to reach 51%. It is expected that in the crop year 2004/05 Spain will produce 932,500 t of olive oil (International Olive Oil Council “IOOC”, 2004). The bulk of the Spanish olive oil is produced in the southern regions Andalucía (85% in 2003), Castilla-La Mancha (6.6%) and Extremadura (2.7%). The main other producing regions - Cataluña (2.2%), Comunidad Valenciana (1.7%) and Aragón (1%) - are located in the east of Spain (Mercasa, 2004).

Between the 1990s (annual average 1990/91-1999/00) and the early 2000s (annual average 2000/01-2004/05), Italian production climbed by 30% to reach 648,900 t. At the beginning of the 2000s (between 2000/01 and 2004/05) Italy held a share of 30%

in total EU production. In the crop year 2004/05, according to the IOOC (2004) estimations, Italy will produce 760,000 t. The southern regions Puglia (37% in 2003/04), Calabria (31%), Sicilia (7.8%) Campania (7.5%) and Abruzzo (4.6%) account for the bulk of the Italian olive oil production. Other remarkable producing regions are Lazio (3.4%) Toscana (2.0%) and Sardegna (1.7%) (Ismea, 2004).

Table 1: Olive oil production in the EU (15) and the World (1,000 tonnes)

Marketing year	Spain	Italy	Greece	Portugal	France	Total EU (15)	World
1990/91	639.4	163.3	170	20	1.0	994	1,453
1991/92	593	674.5	385	62	4.3	1,719	2,206
1992/93	623.1	435	310	22	1.6	1,391.5	2,811.5
1993/94	550.9	520	254	32.1	2.3	1,359.5	1,825
1994/95	538.8	448	350	32.2	2	1,371	1,845.5
1995/96	337.6	620	400	43.7	2.3	1,403.5	1,735.5
1996/97	947.3	370	390	44.8	2.5	1,754.5	2,595
1997/98	1,077	620	375	42	2.7	2,116.5	2,465.5
1998/99	791.9	403.5	473	35.1	3.4	1,707	2,402.5
1999/00	669.1	735	420	50.2	4.1	1,878.5	2,374.5
Average	676.8	498.9	352.7	38.4	2.6	1,569.5	2,071.4
2000/01	973.7	509	430	24.6	3.2	1,940.5	2,565.5
2001/02	1,411.4	656.7	358.3	33.7	3.6	2,463.5	2,825.5
2002/03*	861.1	634	414	28.9	4.7	1,942.5	2,493.5
2003/04*	1,412	685	308	33.2	2.9	2,448	3,164.5
2004/05*	932.5	760	420	30	5	2,154.5	2,766
Average	1,118.1	648.9	386.1	30.1	3.9	2,187.1	2,763
Total average	823.9	548.9	363.8	35.6	3.0	1,776.3	2,301.9
Coef. of variation	37.7	29.6	21.2	31.5	37.9	23.8	20.8

variation (CV) %							
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* Provisional figures. Source: Based on IOOC data. www.internationaloliveoil.org

In Greece, annual olive oil production averaged 386,100 t the early 2000s (2000/01-2004/05). This means an increase of 9.5% in comparison to the average annual production in the 1990s (1990/91- 1999/00). In spite of this development, the Greek share on total EU (15) production decreased from 22% to 18%. Olives are cultivated in most (93%) Greek departments (nomi). However, Greek olive oil production is centred in the centre and south of Greece as well as in Creta Island.

The Portuguese annual production of 30,100 t (average in the 2000/05 quinquennium) was 21% down average production in the 1990s. The olive oil production is centred in Alentejo (29% in 94/98 quinquennium), Tras-os Montes (29%), Beira Interior (17%), Beira Litoral (12%) and Ribatejo e Oeste (9%) (Ministério da Agricultura, do Desenvolvimento Rural e das Pescas “MADRP”, 2001).

Meanwhile, between 2000/01 and 2004/05 production in France averaged 3,900 t, 50% more than on average in the 1990s. French olive oil production is located mainly in the departments Bouches du Rhone (27% in 2003/04), Var (14%), Drome (12%), Gard (9%), Alpes de Haute Provence (9%), Alpes Maritimes (9%), Vaucluse (8%), Herault (5%) and Corse (4%) (AFIDOL, 2005).

Hence, since the early 1990s, Spain achieved to strengthen its leading position in the EU, and Portugal was the only country where production declined. The ten new EU member states will have a minimal impact on EU olive oil production. It is expected that in the crop year 2004/05 they will account for about 0.3% of total EU production (IOOC, 2004).

It could be argued that probably the figures of the production in some EU countries overestimate to some extent the real production, as the subsidies and aids perceived by producers have been proportional to production until reaching a certain production level. The control of the production, especially of the quantities consumed by farmers or sold in bulk by farmers or mills is difficult (ADE, 2002).

Outside the EU, in the early 2000s (crop years 2000/01 to 2004/05), average production climbed by 78% to 141,800 t in Syria and by 31% to 120,800 t in Turkey, in comparison to the average production during the 1990s. In Tunisia, it declined by 28% to 125,000 t due to climatic problems. However, in 2003/04 Tunisia regained the leading position outside the EU.

As mentioned above, the production of virgin olive oil, composed olive oil and olive pomace oil is complementary to some extent. A certain share of the virgin oils -which in particular varies in function of the care in the olive harvesting and processing and the climate conditions during the harvest- called “lampante” olive oil, cannot be consumed directly due to its defects in taste and/or smell. It has to be refined. Traditionally more or less 8% of the olive oil has been extracted with solvents from

the oil cake remaining from the mechanical extraction of virgin oil (olive pomace oil). New methods of centrifugal extraction leave lower oil content in the olive residue (European Commission 2003a).

I.1.2. Foreign trade

I.1.2.1. Exports

Olive oil tends to be mostly consumed in production areas. In the early 2000s (2000/01-2004/05), more or less 20% of world production and 15% of EU- production of olive oil has gone into exports (excluding intra-EU-exports). Italy, Spain and Tunisia account for approximately 76% of the world exports. The EU held a 62.5% slice of the world total (table 2).

Italy (60%), Spain (32%), Portugal (4%) and Greece (3%) are the top European exporters, accounting for 99% of EU exports (2000/01-2004/05, only extra-EU exports are considered).

Table 3 shows the principal EU exporters of the different categories of olive oil in 2003, considering extra-EU as well as intra- EU exports. It is worth mentioning that exports between the EU members double extra-EU exports. The EU exported 917,615 t of olive oil. Therefrom, 69% was virgin or extra-virgin olive oil, 8% lampante olive oil and 23% olive oil (blend of refined and virgin olive oil). Besides, the EU (15) exported 100,452 t of olive-pomace oil in 2003. Half of these exports were intra EU exports and half were extra EU exports.

The main exporter was Spain, which exported 408,173 t to other EU countries and 104,246 t outside the EU. Including the intra-EU exports, Spain exported about 36% of its production (2003) and was the leading exporter worldwide. The exported products were virgin olive oil (71% of the total volume), olive oil (19%) and lampante olive oil (10%). Italy (49%), France (13%) and Portugal (11%) were the principal destinations of the Spanish exports during the crop year 2002/03 (IOOC, 2004). Italy was the second largest exporter in 2003, with 104,236 t intra-EU exports and 173,114 t extra-EU exports. It exported mainly virgin olive oil (65%), and olive oil (33%). The main destinations of the Italian exports are the United States (38%), Germany (14%), France (8%), Japan (6%) and Great Britain (5%). With a much lower level of exports than Spain and Italy, Greece and Portugal are the other important exporters within the EU. In 2003, Greece exported 96,709 t of olive oil, mainly to Italy (83%) and other EU countries (8%). The principal exported products were virgin olive oil (76%) and lampante olive oil (21%), while olive oil just accounted for 3% of total exports. Portugal exported 17,399 t olive oil in 2003. Therefrom, 63% was olive oil and 33% virgin olive oil. Portuguese olive oil was sold mainly to Brazil (57%), Spain (12%) and the United States (10%). French exports of olive oil (3,654 t) were much lower. France exported mainly (85%) virgin olive oil.

Table 2: Olive oil exports of the EU-15 and the World (1,000 tonnes)

Marketing year	Spain	Italy	Greece	Portugal	France	Total EU (15)	World
1990/91	65.8	66.5	6	6.4	0.9	146	337
1991/92	62.8	90.1	12.8	6.1	1	174	303.5
1992/93	51.6	90.8	10.3	7.5	0.9	161.5	298
1993/94	54.6	104.8	9.2	10.5	1.1	182.5	378
1994/95	54	105.8	5.5	13.1	1	182.5	368.5
1995/96	48.8	90.5	11	11.8	1.1	164.8	256.5
1996/97	66.7	129.5	5.2	17	1.1	220.2	438
1997/98	76.2	123.5	8	17.4	1.1	227.2	407
1998/99	63.6	125.3	5.4	12.4	1	208.6	506
1999/00	87.7	183.7	8.2	17.5	1.4	298.5	444.5
Average	63.2	111.1	8.2	12	1.1	196.6	373.7
2000/01	88.3	173	10	17.3	1.3	291	502
2001/02	112.5	182.9	10	16.2	1	324.3	394.5
2002/03*	107	176.1	15	13.1	1.3	313.6	477.5
2003/04*	107.5	211	7.5	19	1.5	348.7	682
2004/05*	110	245	10	4.2	1.5	371.9	583.5
Average	105.1	197.6	10.5	14	1.3	329.9	527.9
Total average	77.1	139.8	8.9	12.6	1.1	241.0	425.1
CV (%)	30.0	37.2	31.6	38.2	17.7	31.5	26.7

* Provisional figures. Source: Based on IOOC data. www.internationaloliveoil.org

Table 3: Exports of olive oil of the main exporting EU countries (2003, tonnes)

Country	Virgin			Lamp ante	Olive oil			TOTAL		
	Total	Intra	Extra		Total	Total	Intra	Extra	Total	Intra
France	3,105	1,869	1,236	41	508	472	36	3,654	2,371	1,283
Greece	72,912	65,351	7,762	20,676	3,120	2,381	739	96,709	88,380	8,329
Italy	181,470	90,571	90,899	4,333	91,558	9,616	81,942	277,360	104,246	173,114
Portugal	5,793	1,856	3,937	705	10,901	611	10,290	17,399	2,886	14,513
Spain	363,718	309,045	54,674	49,581	99,991	50,759	49,232	513,290	408,173	105,117
Other countries	5,029	4,659	168	233	3,951	3,290	661	9,203	8,001	1,202
Total EU	632,027	473,352	158,676	75,559	210,029	67,129	142,900	917,615	614,057	303,558

Source: Eurostat, cited in IOOC, Hojas de información, nº 995/16.04.2004 (modified).

While almost all of Greek and Portuguese and 91% of Italian exports are in small immediate containers, exports in bulk (containers of 5 liters and more) represent a large share (70%) of Spanish exports (European Commission, 2003; Alimarket, 2004). Italy, Portugal and France usually have achieved to obtain higher average prices for the exported olive oil than Spain and Greece. For instance, in 2002 Italy sold the olive oil for 2.40 Euro/Kg, Portugal for 2.13 Euro/Kg, and France for 2.38 Euro/Kg. Greece got 2.02 Euro/Kg, and Spain only 1.84 Euro/Kg. Therefore, in 1999 and 2000 Italy was the main exporter worldwide with regard to value. However, in 2001 and 2002 Spain got the leading position as exporter, also with regard to value. In 2002, Spain exported olive oil for 1,115 million Euro, Italy for 773 million Euro, Greece for 176 million Euro, Portugal for 46 million Euro and France for 15 million Euro (FAO, 2004). The reasons for the price differences are diverse, such as differences in the product quality exported (virgin olive oil, olive oil, etc.), the packing (bulk olive oil, packed olive oil) and the destinations of the exports. For example, one of the reasons of the low average prices received by Spanish exporters is the high share of bulk olive oil (70%) in total exports.

Spain (40%), Italy (35%) and Greece (21%) also were the main EU exporters of olive-pomace oil, which totalled 100,452 t in 2003. Therefrom, half were intra-EU-exports and half extra-EU exports.

I.1.2.2. Imports

The United States is the chief destination of olive oil imports, representing 38% of total world imports by quantities during the period 2000/2005. It is currently the world fourth's largest consumer of olive oil. At present, exporters are concerned, as, because of the Euro revalorization vis-à-vis the dollar, Dollar prices, at about 6 \$ per litre, are far above historic levels (USDA, 2005). The levels of consumption in many non traditional markets may not be very relevant in quantitative terms (except the United States), but they are very relevant in qualitative terms since they focus on high-quality products with high added-value (Mili, 1999). The United States, Japan, Australia, Brazil and Canada account for the major part of EU exports. The EU has a dominant position in these markets. The other major exporters to non- producing countries are Turkey and Tunisia.

The EU accounted for some 25% of the world imports by quantities, with Italy accounting for some 82% of total extra-EU imports of the EU, and Spain for some 17% (2000/01-2004/05; only extra-EU exports and imports are considered for the EU countries). Compared to the average annual imports during the 1990s (1990/91 to 1999/2000), average annual imports during 2000/01-2004/05 increased by 20% in Italy; meanwhile, imports were reduced in the whole EU (-0.9%), Spain (-38%), Greece (-100%), Portugal (-70%) and France (-93%) (see table 4). Recently, the recovery of the Euro against the dollar and yen, the stronger producer prices and the halt of IOOC promotion certainly had a negative impact on imports of olive oil and olive-pomace oil into Australia, Brazil, Canada and the United States.

In 2003, inward processing arrangements accounted for 60 to 80% of total EU imports. This means that more than half of the imported olive were processed within the Community and the finished product was re-exported (European Commission, 2003a).

Table 5 shows the principal European importers of the different categories of olive oil in 2003 considering extra-EU as well as intra-EU imports. In this year, the UE imported 810,586 t olive oil. Therefrom, 87% were intra EU imports. By product, 74% of the volume was virgin olive oil, 14% olive oil and 12% lampante. Italy was the top destination, accounting for 485,454 t, which were 60% of the total EU imports. Italy imported mainly virgin olive oil (73%) and lampante (17%). The main suppliers were Spain (some 54%) and Greece (30%). Tunisia, Syria and Turkey together provided more than 14% of the Italian imports. These imports (e.g. of the variety Picual) often

are used to improve certain characteristics, such as the stability, of the native olive oils in the blends and, in this way, increase their market value. France was the second largest importer of the EU, with imports of 95,764 t, wherefrom the bulk (93%) was virgin olive oil. The French imports come mainly from Spain (71%) and Italy (24%). Portugal followed with 53,551 t, mainly of virgin olive oil (64%) and olive oil (31%). Almost all the Portuguese imports (97%) come from Spain. Further remarkable importers were the United Kingdom (51,256 t), Germany (38,237 t) and Spain (37,733 t). The latter imports mainly lampante (37%) and virgin olive oil (37%) from several countries such as Italy (24%), Tunisia (22%), Greece (18%), Turkey (17%) and Portugal (10%). While Spain and Greece are net exporters of olive oil, Italy, Portugal and France are net importers (by quantities).

Table 4: Olive oil imports of the EU (15) and the World (1,000 tonnes)

Marketing year	Spain	Italy	Greece	Portugal	France	Total EU	World
1990/91	26.7	95.7	0	0	2.7	125.5	310
1991/92	31	90	0.1	0	13.9	135.5	346.5
1992/93	13.1	65.5	0	0.9	20.9	101	323
1993/94	54	91.5	0	4.4	2.6	153	378
1994/95	61.6	107.5	0.2	8.8	0.6	179	436.5
1995/96	24	46	0.1	1.7	0.9	73.7	288.5
1996/97	35.5	106.6	0	1.7	1.4	145.5	437.5
1997/98	28	89.3	0	0.2	0.1	117.8	423
1998/99	81.5	136.3	0	7	0.4	225.6	551
1999/00	13.2	101.9	0	1.4	0.1	116.7	479
Average	36.9	93.0	0.1	2.6	4.4	137.3	397.3
2000/01	15.8	110.8	0	0	0.2	127.1	517
2001/02	1.6	40.7	0	0	0.1	42.4	437
2002/03*	18.2	74.3	0	0.2	0.4	93.3	492.5
2003/04*	55	152	0	1.7	0.4	209.5	635.5
2004/05*	25	180	0	2	0.4	208.1	643

Average	23.1	111.6	0	0.8	0.3	136.1	545
Total average	32.3	99.2	0.0	2.0	3.0	136.9	446.5
CV (%)	67.2	45.6	222.6	131.8	201.2	37.8	24.5

* Provisional figures. Source: Based on IOOC data. www.internationaloliveoil.org

Table 5: Imports of olive oil of the main importing EU (15) countries (2003, tonnes)

Country	Virgin			Lampan- te	Olive oil			TOTAL		
	Total	Intra EU	Extra EU		Total	Total	Intra EU	Extra EU	Total	Intra EU
France	88,616	88,499	117	483	6,665	6,665	0	95,764	95,647	117
Greece	3,114	3,109	4	505	408	408	0	4,026	4,021	4
Italy	354,529	327,759	26,770	83,262	47,663	16,836	30,828	485,454	403,060	82,394
Portugal	34,226	34,106	120	2,863	16,462	16,264	198	53,551	53,233	318
Spain	13,861	9,383	4,478	14,104	9,769	221	9,548	37,733	18,193	19,540
Germany	34,257	34,120	138	73	3,907	3,904	3	38,237	38,095	142
Gr.Britain	34,463	34,409	54	717	16,076	16,062	13	51,256	51,188	68
Other countries	34,402	34,263	140	491	9,670	9,648	22	44,565	44,404	163
Total EU	597,468	565,648	31,821	102,498	110,620	70,008	40,612	810,586	707,841	102,746

Source: Eurostat, cited in IOOC, Hojas de información, nº 995/16.04.2004, (modified).

According to the FAO statistics, among the analysed countries in 2002 Italy was the main importer of olive by values, with imports valorised in 945 million Euro, followed by France (198 million Euro) and Portugal (78 million Euro). In comparison, Spain only imported olive oil for 21 million Euro and Greece for 11 million Euro. Consequently, Italy, France and Portugal were net importers of olive oil, while Spain and Greece were net exporters. This is remarkable, as these five countries are the only olive oil producers within the EU.

In the five analysed countries, import prices for olive oil were lower than export prices. In 2002, France paid the highest prices (2.01 Euro/kg), followed by Italy (1.70 Euro) and Portugal (1.67 Euro). Greece and Spain paid lower prices (1.63 and 1.27

Euro, respectively). The difference between prices for exported olive oil and imported olive oil was highest in Italy (0.70 Euro/kg), medium in Spain (0.57) and Portugal (0.46) and lowest in Greece (0.39) and France (0.37 Euro) (FAO, 2004). The main reason for the high price difference in Italy is that this country usually imports bulk olive oil and exports mainly (91%) bottled olive oil.

In 2003, Spain (43%) and Italy (41%) were the top destinations of the EU imports of olive-pomace oil, which totalled 79,292 t. Spain imports crude olive pomace oil from Greece and Portugal for processing.

Table 6 summarises the main trends in the evolution of the production, consumption and foreign trade of olive oil in the EU and in the world since 1990. In the EU, production has increased substantially and persistently (a relatively low value of the coefficient of variation for this variable), while consumption has increased less. Consequently, extra-EU exports have increased significantly, while EU imports have decreased slightly. At world level, production increased more rapidly than demand. Demand has increased outside the EU more than in the EU, due to the demand increases in certain non-traditional markets, namely the United States, Japan, Canada and Australia. On the contrary, world production increased less than EU production.

Table 6: Production, consumption and trade of olive oil at world and EU (15) level since 1990 (1,000 tonnes)

Olive oil	1990/91 – 1999/00		2000/01 – 2004/05		Variation			
	World	EU (15)	World	EU (15)	World		EU (15)	
					1,000 t	%	1,000 t	%
Production	2,071.4	1,569.5	2,763	2,189.8	691.6	33.43	620.3	39.5
Consumption	2,077.4	1,495.6	2,708.5	1,917.2	631.4	30.4	421.6	28.2
Imports (1)	397.3	137.3	545.0	136.1	147.7	37.2	- 1.2	- 0.9
Exports (1)	373.7	196.6	527.9	329.9	154.2	41.3	133.3	67.8

(1) Only extra EU- imports and exports of the EU are considered.

Source: Based on IOOC data.

I.2. Macro-level importance of olive oil in Europe

I.2.1. Olive oil participation in agricultural output, land use and employment

In the EU olive oil and olives have accounted for some 3.4% of the crop output and 1.8% of the total agricultural output in 2001 (European Commission, 2002a). Olive oil also is quite important from the social and environmental viewpoints in most of the main producing regions. Most olive oil production is concentrated in less- developed regions of the EU.

In Italy, in the crop year 2002/03, olive oil has had a share of 4.3% in total agricultural output at national level. In some southern regions this share was much higher, namely in Calabria (29%) and Puglia (17%) (Ismea, 2004). In Spain, olive oil has accounted for 11.5% of the crop output and 6.9% of the agricultural output in 2002 (MAPA, 2004). In Portugal it has accounted for 3.7% of the crop output and for 2.2% of the agricultural output in 2000 (MADRP, 2001). In Greece, the share of olive oil in total agricultural output has been higher than in these countries (15% in 1995) (Panagiotou, 1995). Both indicators presumably are lowest in France.

Within the EU, according to EUROSTAT, areas with olives totaled 4.5 million ha and accounted for about 3.5% of total utilized agricultural area (UAA) in 2002. This share was significantly higher in the analyzed countries, excepting France: concretely 8.6% in Spain, 7.6% in Italy, 20.2% in Greece, 9.7% in Portugal, and 0.1% in France. In absolute values, in 2002, in Spain 2,169 382 ha were cultivated with olives, which were used mainly (95%) for olive oil production, in Italy 1,170,362 ha (98%) and in Greece, 767,200 ha (83%). These areas were much lower in Portugal (369,858 ha, 97%) and in France (17,036 ha, 84%). Consequently, the share of olive area cultivated with table olives is highest in Greece and France (see table 7).

The EUROSTAT figures are rather similar to the national statistics. They probably underestimate the areas cultivated with olives. According to the results of an inquiry called "Oliarea" commanded by the European Commission, the EUROSTAT figures might underestimate the areas used mainly for olives in the EU by 22%, in Portugal by 40%, in Greece by 30% and in Italy by 25% (1998/99) (ADE, 2002). New plantations, the importance of very small parcels with olive trees, the joint use of some areas for olives and grapes, and by the cultivation of olives by hobby farmers, may explain partly these differences. Table 7 shows that olive-growing holdings are generally small in size, particularly in Italy and Greece, where on average they do not exceed two hectares. Taking into consideration farms which do not receive aid, farm size is even smaller (3.5 ha in Spain, 0.9 ha in Italy) (MAPA, 2004; ISTAT, 2005). From the political viewpoint, it is worth mentioning that most olive trees are cultivated in less favored areas, with a few exceptions, as for example the regions Catalonia in Spain and Toscana in Italy.

When analyzing the evolution of the areas cultivated with olives since 1990, an increase of these areas may be seen as an indication that farmers consider this activity to be profitable compared to other crops (ADE, 2002). In this period, the increase of these areas was particularly significant (approximately 17.5%) in Spain.

Moreover, the proportion of irrigated olive groves has increased slightly in Spain. According to the figures of the Ministry of Agriculture (MAPA, 2004a), in 2001, 14.2% of the total area of olives used for olive oil production were irrigated (according to the census of the National Statistical Institute “INE” (2005), in 1999 this share was of 16.5%).

Table 7: Macroeconomic indicators with regard to olive oil (2002).

Indicator	Unit	Spain	Italy	Greece (3)	Portugal	France	EU-15
Agricultural Area	Mio ha	25.2	15.4	3.9	3.8	29.6	130.2 (3)
Area with olives	Mio ha	2.2	1.2	0.8	0.4	0.02	4.5
Area with olives used for olive oil	Mio ha	2.1	-	0.6	0.4	0.02	-
Farm size (1)	Ha	6.1	1.7	2.0	5.6	-	-
Farm size (2)	Ha	13.5	4.0	3.2	9.4	-	-

1) Farm size in holdings receiving aid. 2) Farm size in professional holdings. 3) 2000.

Sources: Based on European Commission (2003a, 2005a).

Olive cultivation and processing is also an important source of employment. In the in the EU there are approximately 2.5 million farms cultivating olives (European Commission 2003a). According to estimates based in information provided by the Farm Accountancy Data Network (FADN), employment associated with olive growing in Spain amounts to about 46 million manpower per year, 60% of which in harvesting operations (MAPA, 2003). On another hand, it is estimated that, in Spain, the olive oil processing industry generates 10,000 direct jobs, i.e. approximately one job for every 100 tonnes of oil (European Commission, 2003a). Besides, there are several economic activities related directly (pesticide industry...) or indirectly (“olive oil tourism routes”, gastronomy, publications and conferences about olive oil, etc.) to olive oil production.

I.2.2. Share of olive oil in agricultural trade

According to FAO data, between 1990 and 2002 the share in value of olive oil in total European imports of agricultural products increased by 0.1% (1990) to 0.8% (2002). In 2002, this share was greatest in Italy (4.5%), medium in Portugal (2.0%) and lowest in France (0.8%), Greece (0.3%) and Spain (0.2%).

The share of olive oil in total European exports of agricultural products increased from 0.8% to 1.1% between 1990 and 2002. In 2002, this indicator was largest in Greece (7.4%) and Spain (7.2%). In the other countries it varied between 4.7% in Italy, 2.9% in Portugal and 0.05% in France. At regional level, e.g. for the Spanish province Jaén in Andalucía, this share is much higher.

II. The socio-economic and regulatory environment

II.1. Consumption trends

Over the last two decades there have been great changes in food demand, especially in advanced societies. These were the result of a range of economic, demographic and socio-cultural factors. Although income and price continue to be essential variables to explain consumer demand, consumption patterns have been increasingly shaped by qualitative factors such as preferences, values, attitudes and perceptions (Mili, 2005). A growing segment of population in these advanced countries is becoming more and more aware of the various aspects of product quality, such as the attributes of nutritional balance, health, image, presentation, and general convenience.

These demands -especially those related to nutrition and health- coincide largely with the properties of the Mediterranean diet whose most characteristic product is olive oil. This explains partly why the Mediterranean diet is increasingly appreciated and valued outside the Mediterranean region. The healthy image of olive oil, in combination of promotion campaigns supported by the EU and other national and international institutions, made olive oil a key feature for preparing meals not only in South Europe but also increasingly in North Europe and other non-traditional markets. Prospectively, this seems to indicate that high-quality consumption, which already has reached significant proportions of total olive oil consumption, could continue to grow in traditional markets where niches still remain unconquered, as well as –and very especially- in emerging markets as long as a policy is adopted that emphasizes quality and information over prices, which technically cannot be lower than determined thresholds (Mili, 1999).

Across the EU-15 member states, there is a wide variation in oil preference. Consumer preferences are deeply rooted in tradition and the availability of raw materials. The Mediterranean countries have a preference for locally produced olive

oil and sunflower oil. According to Oil World, in 2002 in the region "South EU" (Italy, Spain, Greece and Portugal), olive oil accounts for about 38% of total vegetable oil consumption, and sunflower oil for about 19%. Soybean oil ranks third (some 17%) and palm oil fourth (about 12%). There also are consumed smaller amounts of other oils such as rape oil and lauric oil (Rabobank, 2003). Most producing countries (Spain, Italy, Greece, etc.) prohibit the sale of olive oil blended with other types of oils. Conversely, most non-producing countries, as Germany, Great Britain and even France (producer and consumer) authorize the sale of such blends (Calderón, 2004).

Olive oil has a high competitive pressure from cheaper, substitute oils. Nevertheless, due to the changing habits of consumers (Mediterranean diet), in several of the analysed countries the share of olive oil in total consumption of vegetable oils increased since 1990. For instance, in Spain it increased from 55% in 1990 to 65% in 2002 (MAPA, 2004b). In Italy, it increased from 64% in 1990 to 69% in 2003 (Ismea, 2001, 2004). In Greece, in 2001/2002, olive oil made up 53.5% of total consumption of vegetable fats and oils (Greek Ministry of Agriculture, 2005). In France, in the period 1990-2003 the share of olive oil in total consumption of edible vegetable oils increased from 6% to 22% (Afidol, 2005). In all these south European countries, excepting France, per capita consumption of animal fats is quite low. For instance, in Spain in 2002 per capita consumption of butter was 0.5 kg (MAPA, 2004b).

Olive oil accounts for only about 3% of the world market of edible oils, although world olive oil consumption has increased parallel to the production. Compared to an average annual world olive oil consumption in the 1990s (2,077,400 t), it increased by 30% to an average annual consumption of 2,708,500 t between 2000 and 2005. In the crop year 2004/05, consumption (2,836,500 t) presumably will be higher than production (2,766,000 t). Consumption is concentrated in the biggest producing countries, which accounted for 85% of total consumption in the early 2000s (average 2000/01 to 2004/05).

With an average annual consumption of 1,917,200 t in 2000/01 - 2004/05, which means an increase of 28% compared to the average annual consumption in the 1990s, the EU had a share of 71% in world consumption. Italy, Spain and Greece were the largest European consumers, accounting for 85% of total consumption in the EU. The EU enlargement by ten new member states does not have a significant impact on EU olive oil consumption. At present (2004/2005) these countries only account for 0.7% of total consumption in the EU.

Apart from the EU, the major consumers within the Mediterranean basin are Syria, Turkey, Morocco and Tunisia. In recent years, consumption has also started to spread in non-traditional consumption markets, even with higher rates than in the traditional countries, amongst other things as a result of the promotional activities of the International Olive Oil Council (IOOC). Other explaining factors have been the rising per capita income and the enhanced prestige of the Mediterranean diet. For example, the share of the United States in total world consumption increased 7.4% in the beginning of the 2000s (2000/01 to 2004/05) compared to 5.8% in the 1990s. However, olive oil consumption is not yet consolidated in most emergent markets. Most consumers in these countries consider olive oil to be a non-essential, for which

demand tends to be more price and income elastic than in the traditional consuming countries. In the latter, price increases (until certain levels) only cause small, temporary drop in consumption, but in non-traditional consumption markets they may cause a (sometimes) definitive shift in consumption to other types of oils (Quaranta and Rotundo, 2002).

Within the EU Italy is the largest consumer, with an average annual consumption of 758,800 t from 2000/01 to 2004/05, which represents 40% of total consumption in the EU (see table 8). Some 76% of the packed olive oil bought by the Italian households is virgin or extra virgin olive oil. Almost one third (32%) of the olive oil bought by the households is not packed.

Spain ranks second within the EU, with an average annual consumption of 602,700 t and a share of 31%. Spanish population consumes principally (75%) olive oil, while virgin olive oil accounts for 25% of consumption.

Like in production, Greece is the third largest consumer within the EU, with 270,000 t and a share of 14%. The majority of Greek consumers are unaware of the difference between virgin and other olive oils. Most Greek consumers seem to distinguish between them mainly on the basis of their market price (Patsis, 1995).

France and Portugal are also important consumers of olive oil within the EU, with 96,200 t (5%) and 63,000 t (3%) (average 2000-01 to 2004-05), respectively. A peculiarity of the French market is that olive oil consumed is primarily (98%) extra virgin (Afidol-Oniol, 2001). In Portugal, in 2004, 35% of the consumed olive oil was extra virgin oil, 10% virgin oil and 55% common olive oil. Since 1999 the share of extra virgin olive oil on total consumption increased by 8% at the expense of common olive oil (Hipersuper, 2005).

Spain, Italy, Greece, France and Portugal account for 93.4% of the total olive oil consumption of the EU. In all these countries, consumption has grown slightly in the decade of the 1990s, but since then it has remained rather stable in Greece and Portugal. In Italy, Spain and France it has continued to increase (see table 8). However, in France there can be observed a trend towards stabilization or even decrease of olive oil demand since 2003 (Afidol, 2005). The structure of olive oil consumption has changed, as consumers are increasing the demand of high quality virgin oils at the expense of not so good and cheaper categories of olive oil.

With about 19 kg/capita, Greece holds the top position in the world in the per capita consumption of olive oil, followed by Italy (13 kg) and Spain (12 kg) (Ismea, 2004). Per capita consumption in Portugal (4.4 kg) and France (1.5 kg) is much lower. Due to the high level already reached, it seems not easy to increase significantly per capita consumption in Greece, Italy and Spain. Nevertheless, total demand may increase due to an increase of the population in these countries. In Greece, and Spain, almost all households (98%) consume olive oil (Patsis, 1995, Mahlau and Mili, 2001). In France, household penetration index has doubled in the last decade, passing from 33.5% in 1991 to 65.5% in 2003 (Argenson, 2004; Afidol, 2005).

In France, olive oil consumption is highest in the summer months and lowest from December to March (Afidol, 2005). Apparently, olive oil is used mainly for salads. On the contrary, in Spain olive oil consumption does not show this seasonal pattern, as consumers use this oil in many ways when preparing their meals. Many Spanish consumers use virgin olive oil for salads and olive oil -which has less strong own taste- for frying.

Table 8: Olive Oil Consumption in the EU (15) and in the World (1,000 tonnes)

Marketing year	Spain	Italy	Greece	Portugal	France	Total EU (15)	World
1990/91	394.1	540	204	27	28	1,214.5	1,666.5
1991/92	418.7	630	203	45	34.8	1,357	1,857
1992/93	421.4	641	197	49.9	43.8	1,383.5	1,904
1993/94	421	692	196	59	43.7	1,453.5	1,985
1994/95	420	675	210	58	41.6	1,451.2	1,994.5
1995/96	352.1	653	230	58.4	48.5	1,387	1,888.5
1996/97	470.2	675	240	62	58.8	1,566.7	2,241.5
1997/98	550.4	698	240	69.3	75.6	1,705.2	2,381.5
1998/99	528.5	705	245	66.1	78.8	1,708.9	2,413
1999/00	502.6	714	265	66.5	81.5	1,728	2,442.5
Average	447.9	662.3	223	56.1	53.5	1,495.6	2,077.4
2000/01	580.8	729	270	60.5	92	1,835.1	2,590.5
2001/02	631.2	735	270	61.5	95.1	1,894.4	2,606.5
2002/03*	591.3	770	270	64.9	97	1,918.6	2,677.5
2003/04*	610	775	270	64.3	98	1,967.7	2,831.5
2004/05*	600	785	270	64	99	1,970	2,836.5
Average	602.7	758.8	270	63	96.2	1,917.2	2,708.5
Total average	499.5	694.5	338.7	58.4	67.7	1,739.3	2,287.8

CV (%)	18.3	9.2	12.6	18.4	38.3	11.6	16.7
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* Provisional figures.

Source: Based on IOOC data. www.internationaloliveoil.org.

Another important aspect of the consumption is the increasing importance of eating out in most developed countries. This development has repercussions on the olive oil demand. In Spain, according to the household panel of the Ministry of Agriculture (MAPA, 2004b), the share of demand of hotels, restaurants and institutions on total olive oil demand increased from 12% in 1990 to 17% in 2003 at the expense of the demand of private households. This can be partly explained by the increase of consumption of extra virgin olive oil in hotels, restaurants and institutions. In Italy, importance of eating out is increasing, too. According to two panels (for households and restaurants), in 2003 households consumed about 296,000 t of olive oil, while restaurants used 32,000 t. If the results of these panels would be comparable, this would suppose a share of 10% of eating out (Ismea, 2004). In Greece, the largest amount of olive oil is consumed within households. This situation has not changed over time in spite of considerable changes in lifestyle (Patsis, 1995).

II.2. The regulatory framework

The normative environment of the olive oil sector, concretely the Common Market Organization (CMO) for this product, and the international trade agreements (WTO, bilateral agreements with third countries) have a substantial impact on the development of production and trade in the EU. From the supply side the processes of commercial deregulation are creating openings for products from a variety of geographical areas to markets to which it hitherto been difficult to get access. Tariffs and non-tariff barriers are gradually lowering for the exchange of goods and services. These aspects are now analyzed briefly.

The Council Regulation NR 136/66 of the 22nd September 1966 defined the different types of olive oil according to a former definition of the International Olive Oil Agreement of 1963 elaborated by the UN Conference on Trade and Development (UNCTAD) of the United Nations. For each crop year there were fixed the following prices for a standardized quality of olive oil: indicative prices, intervention prices, representative prices and threshold prices. The pricing system included allowances and penalizations in order to stimulate the production of high quality olive oil. Since the crop year 1987/88, the Community has applied new definitions of the different types of olive oil. In 1991, considerable changes above all with regard to the

chemical analyses applied for the classification of the oil and the adaptation by the EC of Panel Tests in order to evaluate the sensorial characteristics of virgin olive oils were introduced in the EC normative. These changes have improved the determination of the chemical and physical characteristics of the oil, and also of the perception of the quality by consumers (Mili, 1996). Nevertheless, there is some debate considering that the actual denominations still are not optimal for helping consumers to distinguish between the different types of olive oil (Parras Rosa, 1999).

As other CMOs, the CMO for olive oil is based on the basic principles of the Common Agricultural Policy (CAP): the community preference, the financial solidarity and the unity of the market. It originally was designed in a European Community with six members, which was in deficit with vegetable oils. There was one regulation for edible oils and fats, the- Council Regulation NR 136/66 of the 22nd September 1966 -, which really had two Common Market Organizations, one for olive oil, and another one for other edible oil and fats. While the latter was rather liberal, the first one was rather protective for the food industry. The main aim of these market organizations was to guarantee Community olive oil growers a fair income by supporting their production and encouraging the use of olive oil in the Community. With the accession of Spain and Portugal in 1986, the EC became a net exporter of olive oil. The olive oil market has been gradually liberalized in order to take account for the changes in supply and demand (integration of Greece, Spain and Portugal into the EC, etc.) and the international trade negotiations (Uruguay Round, Doha Round, bilateral agreements). The liberalization was performed especially since the crop year 1994-95, when some regulations regarding the trade with third countries were modified.

The reform of 1998 abolished reference prices, substituted the former intervention system by a mechanism of aids for private stocks, as a means of managing crisis, and suppressed the subsidies for consumption. It linked aid to actual output for all producers. These aids for olive oil production still have been considerable – 1,322.5 Euro per t until reaching a guaranteed reference quantity in each member state. Production aid was calculated as a result of multiplying unit aid by the quantity of virgin oil produced independently of its category (extra virgin, virgin or lampante). Restitution for the use of olive oil for canned products was granted. Despite this reform, the Producer Subsidy Estimator (an indicator performed by the OECD to estimate the total transfers from consumers and taxpayers to producers) reflects that these subsidies add up to 50% of the gross incomes of producers, a similar level as for continental products of the EU (OECD, 2004). In addition, a significant share of aids is considered to be distorting for trade. According to the WTO, the aids of the amber box for olive oil have decreased from 40% in 1986-88 to 26% in 2000-01. However, due to the big share of the EU in world production and trade, the WTO considers that these aids still have a great impact on international trade and competition. Therefore, now the EU agreed the introduction of aids which are decoupled from production, and that could be classified as green box subsidies, which are not considered to be trade distorting by the WTO (WTO, 2004).

The Guarantee Section of the European Agricultural Guidance and Guarantee Fund (EAGFL) of the EU provided about 2,384 million Euro for aids for olive oil in 2001. Therefrom, Spain got approximately 42%. The other main receptors of these aids are

Italy, Greece and Portugal, respectively. Olive oil accounts for about 5.4% of total expenditure by the Guarantee Section of the EAGFL (European Commission, 2002a; Pérez Hernández, 2000).

The CAP has stimulated olive oil production within the EU. For example in Spain, the CAP has been applied completely since 1993, after a stand-still period. Due to the aid to this sector financed by the EAGFL, olive oil producers have higher incomes as they additionally to the value of the olives get aids of approximately one euro per kg of olive oil. Since 1996 Spain has been getting yearly between 894 million and 1,021 million Euro as aid for the production of olive oil. Since 1998 Spain has a National Guaranteed Quantity of 760,027 t olive oil. When production is higher (which occurs since 1999), the aid has to be divided accordingly. Table olives are included in this aid. For paying this aid, the administration supposes that table olives have a fat content of 11.5% (Mercasa, 2004). According the figures provided by the Farm Accountancy Data Network, production aid has made an important part of the farm incomes in the EU. In the formal olive oil sector (full time farms) on average in the 1995-99 period it contributed up to 27-30% (depending on the country) of gross product per 100 kg oil, while the remaining 70-73%% of this product was generated by sales of oil. In this sector, like in other agricultural sectors, a large proportion of the total aid budget has gone to a small number of big farms (ADE, 2002).

The system of producer aids did not sufficiently encourage producers to make an effort to improve quality (European Commission, 2003a). In 2001, special emphasis was put on aspects of control and quality. The new 2001 legislation introduced changes to the classification of the categories of olive oil, improved rules on labeling in order to provide more precise information to the consumer and other measures aiming at improving the quality of the olive oil and at combating fraudulent mixtures.

The Common Market Organization for olive oil was reformed again in 2004. The European Commission is consolidating the concept of decoupling farm subsidy payments from production. The EU agricultural policy is introducing a farm payment that breaks the links between amounts paid to farmers, their level of production, and market prices that resembles the Farm Bill introduced in the United States in 1996. The policy aims at promoting more qualitative aspects, such as product quality, food safety and environmental protection than quantitative aspects (yields). The decoupling details are not yet clear in all European countries. Decoupled payments also are being introduced in the olive oil sector. The European Commission considers that this policy has three main advantages in comparison to the former link between the payment of subsidies, prices and production. At first, it expects that establishment of a system of a decoupled payment per farm the olive oil sector will adapt better to the demand and increase its competitiveness. Secondly, it awaits that this payment will stabilize the incomes of the farmers. Finally, it may contribute to stabilize its positive image in the society with regard to its transparency, security and positive impact on environment.

However, the Commission fears that this new system might be harmful for traditional regions with low yields where olive oil is an important economic activity. Therefore, the Commission proposes that only some 60% of the subsidies will be a decoupled

payment per farm. The rest would be granted by the national administration, in dependence either of the size in ha or the numbers of trees in order to maintain the olive trees, preserve the soil and protect the environment. Most plantations with olive trees planted since 1 May 1998 would not get these two subsidies. The new system will go into effect in the crop year 2005-2006. Until November 2005, the present system will continue to be applied (European Commission, 2003b and 2005b). In some countries, as e.g. in Spain, the decoupled payment per farm will have an upper limit. The government presupposes that big olive farms will be able to gain a profit without subsidies. Concerning the European trade policy, the EU-Tunisia association agreement and the new EU-Morocco free-trade agreement allow growing access to the EU olive oil market (USDA, 2005).

Other remarkable aspects of the EU policy in the agri-food sector that have repercussions on the olive oil sector are the food legislation and food safety initiatives. In 2002, the EU adopted Directive EC No 178/2002, often referred to as the General Food Law which aims at improving food safety. This directive lays down the general principles and requirements of food law and establishes the European Food Safety Authority. The law covers all stages of the food chain, including primary production, processing and retail. The law stipulates that the primary responsibility for food safety now lies with the food manufacturers, farmers and food processors. It also establishes the principle of traceability at all stages of the food production and marketing chain. All parts of the chain must keep records of their product flow in order to assure traceability up to five years (Rabobank, 2003). The EU regulations on labeling of olive oil and food safety have direct repercussions on the marketing chain of olive oil. For instance, in Portugal the traditional labels of the bottles, which emphasized mainly the acidity, were substituted in 2004 by labels which emphasize the type of olive oil (extra virgin, virgin, etc.). On the other hand, the traditional way of offering oils and vinegar in restaurants (in so-called *galheteiros*) will be prohibited since January 2006 in order to avoid adulterations of the oils and enhance the food safety (Hipersuper, 2005).

Finally, it should be mentioned that the olive oil mills and the packing and processing industry of many producer regions have gotten aids in the frame of EU rural development programs such as Leader or Proder II (MAPA, 2004).

II.3. Technical framing and certification issues

The technical framing of the sector also is important for the development of the olive oil sector. Research and development (R&D) has a positive influence on economic growth, innovation, and quality of products. The R&D intensity (R&D expenditure as a percentage of GDP) in the whole economy is a significant indicator for comparing the countries R&D efforts. Among the analysed countries, in 2001 only France (2.23) had a higher R&D intensity than the EU-15 average (1.98). In Spain (0.95), Italy (1.11), Greece (0.64) and Portugal (0.85) it was much lower (Eurostat, 2004).

In the olive oil sector there are in all analysed countries organisations dealing with investigation and divulgation, as well as control and certification bodies that certify product quality and food safety. Some EU initiatives support the co-operation between universities and other research organisms of different EU countries.

In Spain, some of the main control and certification bodies are *Asociación Española de Normalización y Certificación (AECOC)*, *Bureau Veritas*, *Det Norske Veritas*, *Lloyd's*, *Société Générale de surveillance* and *Technische Ueberwachungsvereine*. For products with PDO there usually are specific councils which certify product quality and the fulfilment of the specific requirements of each PDO. There also are specific public and private institutions that certify organic products (e.g. Socert and Sativa in Portugal) and food obtained with integrated production systems (Codimaco in Portugal) (MADRP, 2002).

The existence of specific public institutions for the control of the policy in the olive oil sector, such as *Agencia para el Aceite de Oliva* in Spain and *Agecontrol* in Italy, is an indicator for the complexity of the application of the CAP in this sector. The following chapters give more details about the organisation of the profession.

II.4. Organisation of the profession

In all analysed countries there is a great deal of professional organisations dealing with different aspects of the olive oil sector. For instance, in Spain, there is an association of olive oil producers and exporters (*Asociación Española de Exportadores de Aceite de Oliva - ASOLIVA*), an association of olive oil industries (*Federación de Industrias Oleícolas de España- FIODE*) and an association of industries that pack and refine edible oils (*Asociación Nacional de Industriales Envasadores y Refinadores de Aceites Comestibles -ANIERAC*). There also is an association of the olive oil municipalities (*Asociación Española de Municipios del Olivo –AEMO*) that promotes cultural aspects related to olives, such as “olive oil tourism routes”, olive oil museums, investigation, health issues, etc. There also is a professional inter-branch organisation whose main purpose is the promotion of olive oil consumption, as well as three national syndicates (COAG, UPA, ASAJA). The national Ministry of Agriculture is responsible for the co-ordination of the activities of the regional and local institutions that are involved in agricultural policy and has some own activities that affect all regions. For instance, with regard to promotion, the Ministry of Agriculture – Direction of Food - organises promotional activities within Spain and the external trade institute (*Instituto de Comercio Exterior – ICEX*) and the chambers of commerce outside Spain. There are several regional institutions that are responsible for the promotion of products of these regions, as for instance the institution that promotes food from Andalucía (*Agencia Andaluza de Promoción Exterior – Extenda*). The regulating councils of denominations of origin regulate and control the different denominations of origin in this sector. The “*Agencia para el Aceite de Oliva*” controls the implementation of the common agricultural policy of the

EU in the Spanish olive oil sector. Some research institutes such as the *Instituto de la Grasa* (CSIC) are specialised in the oil sector. Finally, there may be mentioned the consortiums of enterprises in order to join their efforts in the exports, such as for instance the Andalusian Food Exporter consortium (AFEX).

In Italy, the professional organisation is rather similar. Some of the main public organisms dealing with the olive oil sector are the Ministry of Agricultural Policy (*Ministero delle Politiche Agricole*), the Ministry for Agricultural Resources (*Ministero delle Risorse Agricole*) and the external trade institute (ICE). There also are several olive oil producer associations, as for instance *l'Unaprola* – which includes the associations *Coltivatori Diretti and Confagricultura*, and *Cno*, which includes the *Confederazione Italiana dell' Agricoltura*. These organisations have promoted the creation of associations of mills, which have been very important within EU common agricultural policy of the EU: *l'Unaprola* promoted the creation of *Associazione Molini Olivicoli*, *Cno* the foundation of *Consorzi nazionale frantoiani* and other producer organisations *Frantoniani d'Italia*. The main associations representing the interests of the olive oil industry are *Associazione Italiana dell'Industria Olearia* and *Corporazione dei Mastri Oleari*. The organism *Agenzia per i controlli e leazione Comunitarie nel quadro del regime di ajuto all'olio di oliva (Agecontrol)* has controlled the EU aids to olive producers. The service institute for agricultural markets "*Istituto di Servizi per il Mercato Agricolo Alimentare*" (ISMEA) and the statistical institute (*ISTAT*) publish much information about the olive oil sector (Sivini, 2001).

In Greece, the Olive Oil Division of the Greek Ministry of Agriculture deals specifically with the olive oil sector. The Hellenic Olive Oil Society (*FILAIOS*) is a private institution that represents the interests of this sector. *SEVITEL* is the Greek Association of Industries and Processors of Olive Oil, and *ESVITE* the Hellenic Association of Olive Oil Packers.

In Portugal, some departments of the national Ministry of Agriculture and its regional directions deal with the olive oil sector (INGA, GPPA, DGDR, etc.) There are several producer associations such as e.g. "*Confederacao dos Agricultores de Portugal*" – CAP, "*Confederacao Nacional de Agricultura, CNA*" and "*Confederacao Nacional das Cooperativas Agrícolas de Portugal- CONFAGRI*". Several regional associations of olive oil producers are integrated in these organisations. The Portuguese olive oil association "*Casa do Azeite*" represents the interests of the processing industry. In 1999/2000 there were 21 Producer Organizations that were recognised according to the Regulation (EU) 136/66. The production co-operatives have a market share of approximately 30% in the Portuguese olive oil production (MADRP, 2001). The agency A.C.A.C.S.A. has similar functions as *Agencia para el Aceite de Oliva* in Spain and *Agecontrol* in Italy.

In France, the main public organisations related to the olive oil sector are: - the Ministry of Agriculture. Other remarkable, private organisations of this sector are: - the interprofessional organisation of olive oil "*Association française interprofessionnelle de l'olive- AFIDOL*", and the federation of the olive oil industry

“*Fédération de l’industrie et du commerce des huiles d’olive de France – FEDICO*”. The organisation Sopexa promotes exports of French food.

Some non producing EU members, such as Germany have EU-supported Olive Oil Information Agency (called *Informationsgemeinschaft Olivenöl*) which are the main bodies involved in promoting olive oil consumption in these countries (Mahlau and Mili, 2001).

The IOOC is an international organisation in which the main olive oil producer and consumer countries are members. It was created as a consequence as the entry into force of the 1956 International Olive Oil Agreement and defends the international co-operation in this sector in order to achieve an increase of production of olive oil, the regulation of the international trade and the promotion of demand. Its activities have been one important explaining factor of the increase in world trade of olive oil. The main activity of the IOOC in budgetary terms (almost half of its budget of about 10 million Euro) is the generic promotion of olive oil in non-producer, non-EU member countries (European Commission, 2003a). The IOOC has achieved to a large extent to unify the definitions of the diverse types of olive oil in the producing and consuming countries. Nevertheless, there still are some discrepancies in the international trade with olive oil, as the definitions of the IOOC are not exactly the same as the definitions of the EU. For instance, some olive oils, which are lampante olive oils according to the EU parameters, are considered edible oils in some other countries. There also have been cases where Spanish olive oil has been rejected in some markets due to some residues which are not considered in the EU norms (Calderón, 2004).

II.5. Transport infrastructure and other issues

The harvested olives are transported to the oil mill for grinding. Those that are collected from the ground with nets have to be transported separately. They must be as free from stones, earth and impurities as possible to avoid breaking of the skin during transport, as this would lead to the beginning of fermentation. The virgin olive oil is transported with cistern trucks to the destination. The influence of the quality of transport infrastructure may be less than in other agricultural sectors, as for instance fruits and vegetable sector, especially for the end product “olive oil”, due to the durability of this product.

In many countries, farmers, and agricultural industries have fiscal benefits in order to promote their activity in certain regions. These incentives may have repercussions in the choice of the localisation of certain agricultural industries, as for instance olive oil processing industries.

The labour is the principal cost factor in olive production at farm level. The main labour requirements are for the harvest, although in some cases, harvesting is

mechanised totally or partially. Labour requirements increase obviously with the increase of the land productivity (yield per ha) of the olive farms (Barranco et al., 2001). Even if most labour force is family labour force, wage policy is important for this sector.

III. Olive and olive oil production systems and their compared performances

III.1. Production systems

The olive oil tree is typical of the Mediterranean area as it needs a lot of sun and a climate characterized by mild winters, rainy autumns and springs, and warm, dry summers. It makes very good use of water and can grow in poor, rocky soils hardly suitable for any other crop cultivation. Olive trees grow slowly. They usually bear fruit 5-10 years after they are planted and are not fully developed until they are 20 years old. They are fully productive between the ages from 35 to 100-150. After that the trees get old and their performance is irregular. Olive trees survive even under poor treatment but respond positively to improved farming practices. On marginal land, olive growing is often the only feasible activity and the only alternative to abandonment and desertification. The peak of the work requirements is in the winter, a valuable complement with other crops or other activities (e.g. tourism) (Fotopoulos et al, 1997). Olive trees often are cultivated in hills or mountains, where it is difficult to cultivate other crops. However, they are sensitive to frost and cannot be cultivated in mountains where winter temperatures are very low. In Italy, about 67% of olive areas are in hills and 11% in mountains (D`Auria, 2001).

The olive oil tree that is cultivated has a lot of varieties. Worldwide there are cultivated about 137 varieties, 37 in Spain, 31 in Italy, 9 in Greece, although therefrom only a few, e.g. in Spain 12 varieties, are really important economically. Each variety originates an olive oil with specific characteristics such as content in oleic acid, stability, etc. This is one reason of the foreign trade between the producing countries. Most varieties can be used as well for the production of olive oil as for table olive, but usually each variety is cultivated with a special production system and used mainly either for olive oil or for table olive (Avila Granados, 2000).

Olives are cultivated in many regions with heterogeneous production systems. Most olive areas are cultivated extensively, with traditional production systems, using few off-farm inputs. On sloping sides, traditional plantations often are laid out in terraces.

However, some new plantations are grown very intensively, resembling modern wine and fruit plantations. They use precise production systems, such as for instance drop irrigation, which allow them to reduce their dependence from the natural endowment and increased quantities of inputs such as fertilizers, insecticides and herbicides.

In Italy, 32.4% of the olive oil areas are irrigated (39.4% in the southern and in the 14.8% in the central and northern regions, while in Spain the share of irrigated areas is much lower (about 15%). The olive tree makes a very good use of water. The use of irrigation allows a threefold or fourfold increase of production. Pruning is done regularly in 81.3% of Italian farms, not regularly in 18.5% of farms and never in 0.2% of farms. Most farms (81.3%) prune the olive trees manually, and 17.4% do it in a mechanized way. 45.8% of the farms pick the olives by hand, 21.8% with tree shakers and 32.4% with facilitation of harvest (“agevolatori”) (Ismea, 2004).

A third production system is organic production of olive oil, also called “ecological” or “biological” production in some EU countries. This production system aims at reducing soil erosion. It only allows the use of certain “natural” inputs such as organic fertilization, plant protection with insects and a limited use of products, etc. In this way, this system contributes to environmental protection. There also are specific norms at industrial level. There are specific institutions that certify that the farms and industries really use this production system. In the EU, organic agriculture is defined and regulated by the Regulation EU 2092/91.

Finally, also the integrated production system should be mentioned. Like the organic production, this system aims at a production of olive oil with high, certified quality. Specific norms have to be fulfilled in order to obtain this certification. In contrast to organic production, this system allows a limited use of some “industrial” fertilizers and plant protection products. Initially, this system has been applied in the fruit and vegetable sector, but later it is has also been applied in the olive oil sector and other agricultural sectors. Contrary to organic production, integrated production has not been defined and regulated at EU scale. In Spain a national norm (Real Decreto 1201/2002) defines and regulates this production system. In other countries, as in Italy, there are similar norms at regional level (Wiegand et al., 2004; www.infolivo.com).

The average yields obtained in each country give a rough overview about the intensity of the cultivation in each region. Between 1999 and 2002, average annual yield per ha of olives was above EU-15 average (2.24 t/ha) in Italy (2.83) and Greece (2.69), a bit lower in Spain (2.06) and much lower in France (1.11) and especially in Portugal (0.64 t) (European Commission, 2005a). Besides, average prices per kg olive in Italy and Greece usually are higher than in the other countries. Thus, the added value per ha is highest in Italy and Greece.

On another hand, labour productivity is highest in Spain, where in professional (Farm Accountancy Data Network “FADN”) farms one worker normally tends an average of 19.2 ha, medium in Portugal (9.6 ha) and Italy (5.3 ha) and lowest in Greece (2.1 ha, see table 9) (European Commission, 2003a).

Table 10 shows the evolution of some olive growing farms of the Spanish farm accountancy data network since 1991. Production and especially net value added per annual work unit (AWU) increased in time. However, in 2002 these indicators declined, probably as a consequence of the yield declines in this year. The analyzed

farms are highly specialized on olive growing, where olives accounted for 96% of total area and for 98% of total production in these farms in 1991.

Independently of the production system used, olive oils of certain regions may have denominations of origin (DO), which may be defined as “Protected Designation of Origin” (PDO) or “Protected Geographical Indication“(PGI).

Table 9: Economic data relating to the olive-growing in the EU in 1995-99

	Spain	Italy	Greece	Portugal
Hectares of olive groves per AWU (1)	19.2	5.3	2.1	9.6
Average prod. in kg of oil per holding (2)	1,912	579	793	454
Average yield in kg of oil per hectare (3)	315	384	401	82
Average yield (FADN) in kg of oil per hectare (1)	590	810	860	170

(1) FADN data; calculations by ADE; (2) Based on the average number of the applications; (3) based on Oliarea data.

Source: European Commission, 2003a.

Table 10: Evolution of economic data relating to olive-growing in Spain since 1991 (average holding).

	1991	1994	1998	2002
Number of holdings (total sample)	297	158	192	276
Agri. utl. Area (AUA) (ha)	17.9	35.1	18.3	11.3
Total labour force (AWU)	0.8	2.0	1.9	1.2
Family labour force (AWU)	0.7	1.0	0.6	0.8
Gross output (1,000 EURO)	12.6	17.9	30.3	14.6
Gross crop production (1,000 EURO)	12.5	17.8	30.3	14.4
Expenses (1,000 EURO)	8.2	14.8	22.2	10.3
Gross Value Added (f.c., 1,000 EURO)	12.3	18.2	39.5	17.1

Net Value Added (f.c., 1,000 EURO)	10.9	15.4	35.5	16.0
Prod/total AWU (1,000 EURO)	8.9	8.9	16.0	12.2
NV Added/ total AWU (1,000 EURO)	7.7	7.7	18.7	13.3

Source: Based on MAPA, *Red Contable Agraria Nacional*, RECAN, various years.

In Spain, in 2002 there have been 17 PDO/PGI of virgin olive oil (therefrom, 9 were recognized at EU level). 391,445 ha and 281 milling and packing industries have been inscribed in this system. 17,937 t of olive oil were marketed under this denomination, accounting for a value of 55.91 million euro. 71% of the total sales were made in the domestic market and 29% in foreign markets (MAPA, 2004c; Ismea, 2004). In 2003, 91,200 ha of olives were grown with organic production systems, and 47.100 ha were grown using integrated production systems (Cáceres et al., 2004). At least one firm –Castillo de Tabernas- produces olive oil using olives cultivated in a desert in Almería with an integrated production system. The regional agricultural ministry of Andalucía certifies the oil (Mercacei, 2004).

Italy has recognized olive oil 29 PDOs and one PGI. In 2001/02, 5,142 t were marketed with PDO or PGI, only 4.4% of the available production that might be sold with these labels. In Italy, in 2002, 102,055 ha olives were cultivated as organic products. Compared to 2001, this means a decrease by 16%. Olives account for about 8.7% of the areas cultivated with organic products in Italy (Ismea, 2004).

In Greece, there are recognized 14 PDOs and 10 PGIs (Ismea, 2004). In 1996 total area with organic olive groves was 3,262 ha (Fotopoulos et al., 1998).

Portugal, in 2000, had 5 olive oils with PDO. In this year, 20,193 ha olive trees were cultivated with an organic production system, compared to 1,544 ha in 1993 (MADRP, 2002). In 2001/02, more than 150.000 l of olive oil with DOP was produced, which is about 0.4% of total olive oil production (Hipersuper, 2005).

In France there are recognized 4 olive oils with PDO (Ismea, 2004). Taking into consideration that total French olive oil production is low, this means that a high share of total production is sold with PDO.

III.2. Economic organisation and structure

III.2.1. Organisation and structure of the farms

Nowadays, most farms of the production areas are specialized either in the production of olives for olive oil or in the production of olives used as table olives. Olive trees are cultivated mainly as monoculture in some parcels of the farms. In some regions, as e.g. Jaén (Andalucía, Spain) it is almost the only product cultivated. However, traditionally, olive trees often have been cultivated in association with wine or other crops, and sometimes this associated cultivation continues to be practiced. The different statistical treatment of these areas, which are cultivated with two crops, may explain partly the differences in the statistics about areas provided by different sources.

A very large number of Community growers -about 2.5 million- is involved in the cultivation of olives (European Commission, 2003a).

In Spain, according to Spanish sources, there are some 650.000 olive oil farmers (450.000, according to the European Commission). Olive oil is cultivated mainly in small and medium farms. The average farm size is 3.5 ha. In 1999 5.7% of the olive oil area was in farms with less than 1 ha, 25.2% in farms with 1 to 5 ha, 30.7% in farms with 5 to 20 ha, 30.6% in farms with 20 to 150 ha and 7.8% in farms with more than 150 ha (MAPA, 2003) (see Table on farms in the annex A2).

In Italy, in 2000 1,212,000 farms with 1,081,000 ha cultivated olives (ISTAT, 2005). In 1997/ 98, about 60% of the olive farms, accounting for 21% of olive oil production, had less than 100 olive trees. 88% of the farms, which accounted for 46% of oil production, had less than 250 trees. Only 1.3% of the farms have more than 1,000 trees. They account for almost 26% of total olive oil production (D'Auria, 2001). According to the agricultural census of 1990, 42% of the farms with olive trees had less than 1 ha, and 33% 1 to 3 ha. Farms with more than 100 ha almost did not exist. The average size per farm is of a bit less than 1 ha (Capogna et al, 2001).

In Greece, in 1997 there were 430,000 farms with olive trees (Fotopoulos et al. 1998). There are about 150 million olive trees on an area of more or less on million ha. The production (about 400,000 t to 430,000 t) was mainly of a high quality level: 70 to 80% were extra virgin, and therefrom more or less the half of 0.5% acidity (Ismea, 2004).

In Portugal, in 1999, there were 183,348 olive oil farms with 340,523 ha. They had an average size of 1,86 ha per farm (MADRP, 2001). There are some 38 million olive trees. Recently the Commission has approved new investments for additional 35,000 ha. The average quality of the oil is medium: 50-60% of the oil is virgin, and 40-50% lampante (Ismea, 2004).

In France, according to Ismea, more or less 20,000 ha are cultivated in 25,385 farms with about 3 million olive trees (Ismea, 2004). According to French sources, there are less farms (19.688), but with 48,500 ha olive orchards (Afidol, 2005). Similar differences were observed in a study of the consulting firm ADE (ADE, 2002).

III.2.2. Organization and structure of the mills

In the last years, there have been introduced considerable technical innovations in the European olive oil mills. The traditional extraction systems have been widely substituted by continuous systems, and within these three-phase systems have been substituted by two-phase systems. Additionally, the reception and storage process of the olives has been modernized. In many countries, the olive mill sector has been rationalized, although in some countries this process is complicated due to the persistence of a considerable excess of dimension of the existing mills. However, the modernization process has affected mainly the introduction of new processes and products, and less the management systems and the marketing of the olive milling industry.

Table 11: Structure of the mills by annual throughput (tonnes)

Tonnes	Spain 1999/2000		Italy 1998/1999		Greece 1999/2000		Portugal 1998/1999	
	Number	%	Number	%	Number	%	Number	%
0-100	640	37.3	993	16.3	871	39.0	827	92.2
>100	772	45.0	4,450	73.2	1,344	60.2	70	7.5
>1 000	231	13.5	0	0	17	0.8	2	0.2
Others	72	4.2	633	10.4	0	0	0	0
Total	1,715	100.0	6,076	100.0	2 232	100.0	929	100.0

Source: Member States Statistics, cited in European Commission 2003a.

In the Community as a whole there are close to 11.000 olive oil mills. This suggests that the fragmentation characterizes this industry. Having a mill close to the olive grove makes it possible that olives can be crushed immediately after being picked, thus under pinning oil quality (European Commission, 2003a).

In Spain there are about 1,700 mills, according to the *Agencia para el Aceite de Oliva* or about 1,750, according to another source (MAPA, 2003). This figure may give a erroneous vision of this sector, as the major mills have a clear predominance: only 670 mills grind more than 250 tons, and together they account for more than 90% of total production. Therefrom, 400 mills can grind more than 500 tons and operate in the national in bulk olive oil market in a significant way. 230 produce more than 1,000

tons, and 8 more than 5,000 tons. Considering that in the period 1999/2004 Spain produced on average yearly 978.800 t olive oil production, each mill produced yearly about 567 t. Most mills (87% in 1999) use continuous plants in 2 phases (centrifugation). They have been substituting continuously classic discontinuous plants (pressing, 3%) and continuous plants in 2 phases (10%) (Capogna et al, 2001).

About half of the mills are cooperatives. Cooperative mills have some 70% of total capacity of the mills. The average size of the cooperative mills measured by the grinding capacity doubles the capacity of other mills. Most mills are located in the production areas. Thus, about 50% of the mills and more of 80% of the total grinding capacity are in Andalucía. Since Spain has become member of the EU, the mills were modernized considerably. Cooperatives of second grade have very important within the wholesale trade, especially since about 1995. At present there are about 20 very large cooperatives of second grade in all production regions. Therefrom 12 are very large. They market more than half of the Spanish olive oil and really have a leading position within this sector. They have a large storage capacity, good management and marketing skills. Many of them are packing an increasing part of the virgin olive oil of the members of cooperative mills (cooperatives of first grade) (MAPA, 2004a). There also are 61 industries that extract olive-pomace oil, many of them have many problems due to technological reasons. About 30 industries that refine lampante olive oil and olive-pomace oil usually are modern and large. Spain imports olive-pomace oil from Portugal and Greece, which is refined in these industries. The number of refining enterprises is about 800, it varies from year to year (Mercasa, 2004).

In Italy, between 1998/99 and 2001/02, the number of mills in operation decreased by 330 to 5,737 producing on average 118 t olive oil per mill in 2001/02. As a rule, mills in central and northern Italy produce oil on a smaller scale. In 2001/02, they produced on average 51,9 t per mill, while Southern mills produced 142,5 t. Almost three-quarters of the mills (73%) were located in the southern regions of Italy, which accounted for about 88% of total production. The remaining quarter was located in central and northern Italy. In the last five years, the number of mills decreased in the southern regions, while it remained more or less stable in central and northern Italy. Between the crop years 1994/95 to 1977/98 and the crop years 1998/99 to 2001/02, the average capacity of the mills (8 hours) increased by 24% from 493 t/ 8 hours to 612 t/ 8 hours. The increase was more accentuated in the Center- North (45%) than in the south (22%). 52.7% of the mills used continuous cycle, 46,3% pressure and 1% percolating (Ismea, 2004). Some 53% of the mills used a continuous system (centrifugation), and 47% a traditional system (pressing) (Ismea, 2004). Among mills with centrifugation, most mills have continuous plants with 3 phases (80% in 1999), and the remaining 20% continuous plants in 2 phases. (Capogna et al, 2001). Nevertheless, meanwhile the main utilized system is the centrifugation with the traditional, 3 phase system (Peñañiel, 2004).

When comparing the situation of the mills in Italy and Spain, one difference is the larger size of the Spanish mills. The average production per mill in Spain almost quintupled the figure in Italy. With regard to the system used, Spanish mills had

predominantly continuous plants in 2 phases, which allow a higher efficiency and lower management costs than the other systems. In Italy, still almost half of the mills use the traditional pressing system, although the quality of the oils sometimes is inferior compared to oils obtained with continuous systems. This on the one hand is a consequence of the small farm size. On the other hand, many mills prefer this system in order to obtain olive oil in a very traditional way. The mills communicate this aspect to consumers and link it to the local history and culture, as many consumers like to buy such oils, obtained in this way. The Spanish system probably in the past has been more orientated towards the efficient production of a large volume of olive oil, while the Italian system was more orientated towards quality control and an individualization of the needs of the clients of the mills (Capogna et al, 2001).

In Greece, in 1995 the olives were processed, for oil or table olive production, in 3,215 plants. Therefrom, 2,800 were olive oil mills, 335 were packing plants/refineries/ olive-pomace oil extraction plants and 80 were table olive processing plants). These units handled yearly an average of 1.5 million t of oil-producing olives, which produced 300,000 t of olive oil and 600,000 t pomace that gave 25,000 t olive-pomace oil, in addition to 70,000 t olive oil. Most mills are small. Greece also had modern olive storage facilities, with a capacity of up to 250,000 t. The processing sector has undergone notable modernization in the last decades. In 1995, 8% of the olive oil mills had decanters. The upgrading of the primary sector has contributed towards an improvement of the average olive oil quality. About 75% of the tonnage produced was edible virgin olive oil. The modernization of the secondary sector has helped to improve the quality of the olive oil and table olives, both packed and unpacked, which comply with strict hygiene requirements and are more marketable. About 65% of the Greek olive oil production was consumed on the domestic market. Therefrom, producers themselves consumed some 26% as it leaves the mill, without any further packing or processing. The remaining 74% were packed in small containers (up to five liters) and placed on the domestic market (Panagiotou, 1995; Ismea, 2004).

In Portugal, during 1993/94 crop year, 1,100 mills operated, of which about 100 processed approximately half of all the olives. Of these, 80% were continuous-process centrifugal facilities, almost all of which (90%) operated triple phase-decanters (Castro et al, 1997). In the crop year 1999/2000 there were recognized 1,220 mills, but only 931 of them worked, processing 342,271 t olives and obtaining 51,257 t olive oil (MADRP, 2001).

III.2.3. Organization and structure of the refiners and packers

The fragmentation of the olive-growing sector and the mills also applies to bottling/canning firms. The process has become even more marked as a result of the growing market share of extra virgin olive oil, which has enabled many mills to branch into market preparation. On the refining industry, however, the number of

operators remains limited and stable, because of the size and complexity of the plant and machinery required (European Commission 2003a).

Due to climatic conditions, the type of soil and faults in the processing process, virgin oils can have several defects, such as high acidity, a strange colour or aroma, etc., which makes them unsuitable for human consumption (they are called “lampante” oils). This means that they have to undergo a refining process to eliminate defects. There are two types of processes, classic alkaline refining and physical refining.

In contrast to Italy, Spain refines a large part of its olive oil. Several companies refine as well olive as sunflower oil. In this way they take advantage of the different harvesting periods of olives and sunflower. In the olive oil sector there still are many producers (mills, packers and refiners) and brands, compared to other oil sectors (soybean, etc.) that are dominated by a few multinationals to a large extent (Rabobank, 2003; see table 12). In the statistics, the olive oil industry is included in the “vegetable oil refining industry” jointly with other edible oil industries (sunflower, soybean, palm oil, etc.). In the analyzed countries olive oil is an important part of these industries and of all the food processing industries. Table 13 shows that in the last decade the number of enterprises and the working-power in the oils and fats industry declined, while production and value added increased. Consequently, efficiency and labor productivity in this industry have augmented.

Table 12: Olive oil processing in the EU (1998-99)

	Spain	Italy	Greece	Portugal
Refining facilities	29	13	27	8
Facilities for producing olive pomace oil	53	45	42	13
Bottling/canning plants	440	300	90	49
Table-olive packing stations	404	53	256	30

Source: Member States Statistics, cited in European Commission, 2003a.

When Spain joined the European Community (1986), the Spanish olive oil sector was characterized by an atomized structure and weak coordination inter-linkages. The Spanish admission to the EC lead to intense concentration and internationalization processes in the food industry in general and the olive oil sector in particular. Until the late 1990s the process of modernization was led almost exclusively by a small number of companies with strong ties to multinational capital. However, in the beginning of the new millennium, we are in presence of a larger,

fuzzy conglomerate of companies (from a structural viewpoint) that have adopted strategies of modernization of processes and products on a brand-building basis, and are well- represented in the shelves of the large distribution. Some multinational companies such as Cargill still are important in the Spanish edible oil market, but in the olive oil market the share of multinational enterprises on total capital has decreased notably in the last years. Nowadays, with few exceptions (Sovena) the main firms of this market are national.

Table 13: Developments in the oils and fats and food industry (FI) in Spain.

		FI	Oils & fats	Oils & fats/ FI (%)
Number of enterprises	1989	41,560	1,936	4.7
	2002	22,457	1,425	6.3
Working-power (persons)	1990	364,521	13,427	3.7
	2002	371,738	11,398	3.1
Production (Mill. Euro)	1990	34,829	3,208	9,2
	2002	64,523	5,531	8,6
Value added (Mill. Euro)	1990	9,617	432	4.5
	2002	15,297	688	4.5
Exports (Mill. Euro)	1990	2,476	547	22.1
	2002	5,092	1,287	25.3
Imports (Mill. Euro)	1990	2,636	67	2.5
	2002	5,892	335	5.7

Sources: Based on INE, Encuesta Industrial (various issues).

In 2003 the leading 4 Spanish olive oil packers have accounted for 61% of the total market of bottled olive oil (all types of olive oil), while the 10 leading olive oil packing groups had a share of 81.5% of the total market (table 14).

In Spain, in 2003 the main firms of the olive oil sector were Koipe/ Carbonell (SOS), Hojiblanca and Migasa. In this year, Koipe/ Carbonell had a leading position in virgin olive oil market, with a market share of 18.1% (by value, according to Nielsen), in the olive oil market (28.2%), in the sunflower oil market (35.1%) and in the market for all

edible vegetable oils (29.1%). Hojiblanca was the second company in the virgin olive oil market (15.5%). In the olive oil market, Migasa had a share of 7.5%, and Aceites del Sur, of 7.0%. No other enterprise had a share of more than 3% in these markets (Ortega, 2004).

According to Alimarket, in 2004 the main firms selling olive oil and virgin olive oil in the self-service retail stores were Koipe/ Carbonell (SOS), with a share of 24.4% in these markets, Grupo Acesur (6.6%), Grupo Ybarra-Migasa (6.3%), Hojiblanca (4.4%) and Aceites Borges Pont (2.2%). The scarcity of large enterprises is one of the factors that explain the high share (47%) of private labels of olive oil distributors' brands in Spain (Alimarket, 2005). Koipe/ Carbonell is word leader in packed olive oil since 1994, when Koipe bought Elosúa, the former leader in the Spanish olive oil market (Koipe was the second largest firm). Until midst 2001, the Italian group Montedison was the owner of Koipe, which depended directly from Eridania Beghin-Say, the agro-food subsidiary of that group. When Electricité de France and Fiat bought the Italian group, the new owners sold their majority participation in Koipe (52%) to the Spanish food group Sos Cuétara. This transaction led to the creation of a big food group with top brands in three different areas of activity (oil, rice and cookies). In the national scene, one of its objectives is to make more profitable Koipe's high production capacity, up above 175 million liters of bottled oil, appealing if necessary to agreements with the distribution channels to produce oil with distributor's brands. In addition, the group attempts to take profit from the synergies between the mentioned three areas of activities in the logistics, trade and promotional levels. In the international scene, plans are more ambitious and set up the leading position of this firm in the world olive oil trade. Sales policy in the external market constitutes a prior strategy of the group given the maturity of the internal market and that growing pressure over the prices that narrows the marketing margins (see section IV.2). Its main olive oil brands are Carbonell and Koipe, which are the two leading brands in the Spanish extra virgin (Carbonell) and olive oil (Koipe) market. Olive oil will be the star product of the company in the next years. The main target markets will be the United States, Japan, Australia and Brasil. The Spanish group Koipe/Carbonell (SOS) recently bought the Italian enterprise Minerva Oil (see section IV.2) (Alimarket, 2005; Mili and Rodríguez Zúñiga, 2005).

Table 14: Evolution of market concentration and corporate structure in the Spanish olive oil market

1986			1997			2003		
Entreprise/Holding	Market share	Major capital ownership	Entreprise/Holding	Market share	Major capital ownership	Entreprise/Holding	Market share	Major capital ownership
ACEITES ESPAÑOL HOLDING	27.2	Nnal Private Cap.	KOIKE HOLDING	33.0	Eridaria Beghin-Say	SOS HOLDING	26.0	Nnal Private Cap.
• Carbonell	16.7		• Carbonell	19.2		• Carbonell	17.5	
• Elosua	7.8		• Koipe	6.3		• Koipe	7.2	
• Sotoliva	2.7		• Elosua	3.7		• Elosua	0.8	
KOIKE HOLDING	16.9	Lesieur Group	• Salgado	3.2		• Salgado	0.5	
• Koipe	8.7		• Mecisa	0.6		SOVENA	12.1	SOVENA Comercio
• Salgado	8.2		AGRA	9.7	Unilever	ACESUR HOLDING	11.8	Nnal Private Cap.
ACEITES COSTA BLANCA	9.4	Nnal Private Cap.	ACEITES TOLEDO	7.0	Nnal Private Cap.	• Aceites del Sur	6.0	
ACEITES TOLEDO	5.0	Nnal Private Cap.	AGRIBÉTICA	6.0	Frint-Frahuil	• Coosur	5.8	
YBARRA	4.0	Nnal Private Cap.	ACEITES DEL SUR	5.9	Nnal Public Cap.	YBARRA-MIGASA	11.1	Nnal Private Cap.
ACEITES DEL SUR	3.5	Nnal Private Cap.	YBARRA	4.6	Nnal Private Cap.	HOLDING		
INDUSTRIAS PONT	2.4	Nnal Private Cap.	BORGES-PONT	3.7	Nnal Private Cap.	• Oleomasia	7.0	
GRUPO FAIGES	2.3	Nnal Private Cap.	MUELOLIVA	2.8	Nnal Private Cap.	• Ybarra	4.1	
UTECO-JAÉN	1.7	Cooperative	UTECO-JAÉN	2.3	Nnal Private Cap.	ACEITES TOLEDO	4.9	Nnal Private Cap.
MATEO	1.5	Nnal Private Cap.	MALEVA	2.7	Nnal Private Cap.	BORGES-PONT	4.0	Nnal Private Cap.
						EROSKI HOLDING	3.5	Nnal Private Cap.
						MUELOLIVA	2.8	Nnal Private Cap.
						AOPIBERICA	2.7	Cargill España
						HOJIBLANCA	2.6	Cooperative
10 LEADING	73.9		10 LEADING	77.6		10 LEADING (C10)	81.5	

Source: Mili and R. Zuñiga (2005)

In November 2003, the fusion of the two co-operatives Oleicola Hojiblanca and Cordoliva led to the foundation of Coop. Hojiblanca, the largest olive-oil cooperative world-wide, with more than 23,000 members grouped in 43 co-operatives with an average yearly production of 95,000 to 100,000 t olive oil. This new group packs more than 20,000 t yearly, and now ranks first in the Spanish virgin olive oil market, with a share of 25%, and fifth among the Spanish olive oil packing industries. Its main brands were Hojiblanca and Cordoliva. The group exported half of its production – about 50 million kg olive oil (therefrom 6 million kg packed) in 2004 and expected to increase export in the coming years. It maintained an agreement with Wal-Mart signed some time ago by Cordoliva, and has reached an agreement with the society Mediterranean Brands, propriety of the well-known actor Antonio Banderas. In this way, it tries to promote the exports to the United States, Mexico, Brazil and Puerto Rico. There also were signed agreements with marketing agents of China and South Africa in order to increase the exports to these countries. Coop. Hojiblanca also had an agreement with a cook and restaurant-owner that is very famous in Spain, Carlos Arguiñano. These agreements had much impact in the mass media of many countries (Alimarket, 2004). Coop. Hojiblanca plans to increase its packing capacity in order to reach a capacity of 70 /75 million t yearly, which means about 75% of production. Besides, probably more co-operatives will be integrated in this group, in order to improve the bargaining power with the retail trade. His manager would like to double the number of co-operatives up to 80 (Ortega, 2004a).

In 2000, the Spanish firm Migasa bought La Masía, the second largest olive oil firm at that moment, from Unilever. This meant the end of 10 years of presence of the Anglo-Dutch multinational in the Spanish olive oil market. This sale was the consequence of recent Unilever's policy, consisting in focussing exclusively on leader brands and discarding the non-strategic businesses for the group. Nevertheless, it should be mentioned the bad results of La Masía, whose market share was reduced from close to 10% to slightly above 5% (in the moment of its sale) in only three years. The new owners did not take too long to undertake the restructuring of the firm: they shut a refinery in order to concentrate all the refining activity in a single manufacturing installation, and they are making plans to do the same for the bottling activities (Mili and Rodríguez Zúñiga, 2002). Later, Hijos de Ybarra and Migasa founded the group "Ybarra- La Masía".

According to data of the exporter association ASOLIVA, in 2003 five enterprises accounted for about 55% of the Spanish exports of olive oil (Ortega, 2004 b).

Conversely, in the Italian case, businesses operate almost exclusively with virgin olive oil, since it represents more than 80% of national consumption and a major proportion of emerging market's imports. In Italy, in 2003 144,250 t extra virgin olive oil with a value of 612,005 million Euro were sold to households. In this market, the six principal firms had a share of 41.9% by value. Private labels of retail chains had a share of 9.5% and other firms of 48.6% (by value). The main firms were Van den Bergh (13.3%) and Carapelli (11.3%). By volume, the six main firms had a share of 40%.

Van den Bergh Italia S.p.A. – Bestfoods belongs to the group Unilever. In 2002 this company had a turnover of 142 million Euro in Italy and 280 million Euro in foreign markets. Europe, USA, Australia and Asia are the main markets. It markets the brands Bertolli, Dante, San Giorgio, Rocca dell’Uliveto and Dolci Terre. Bertolli is the leading olive oil brand in Italy, as well with regard to virgin olive oil as with regard to olive oil. The firm tries to consolidate the leading position of this brand, while the other brands are used as complementary brands whose importance may change in the different regional markets, in the frame of a segmentation policy. The principal strengths of this brand are:

- Wide product range; the brand has five references in order to satisfy the different needs of consumers: Gentile, Robusto, Riserva, Classico and Fragante.
- Good communicative capacity; developed especially in the foreign markets. Last year, the company has made promotion in order to communicate to the consumers the importance of the extra virgin olive oil in the context of the Mediterranean diet, jointly with the concept of the quality of products Made in Italy.
- High commercial penetration in the market of olive oils with PDO or PGI.

Two of the main aims of the firm in the medium term are the increase of sales in the foreign markets and the consolidation of Bertolli as umbrella brand for all products of this firm produced with extra virgin olive oil.

B&S Private Equity Group manage Carapelli Firenze. In 2003 Caparelli Firenze had a turnover of 205 million Euro, from which 26% came from exports. The main strengths of this brand are:

- A high share of typical, certified virgin olive oils and olive oils.
- Offer of several products that are differentiated by price, origin and taste to the retail trade and the restaurants.
- Products certified by CSQA.

The main medium term objective is to consolidate the obtained results by qualification of supply and valorizing more than today the origin.

Monini, Società di Spoleto, is owned by the family Monini (65% and the group Gruppo Star (35%). In 2002 total sales amounted to about 94 million euro. Therefrom, 25% comes from exports. 80% of total exports is extra virgin sold with the brand Monini. The principal strengths of the firm are:

- High quality standard.
- Good marketing net.

- High export vocation, with an own filial in the United States and exports to many important world markets such as Canada, the EU, Eastern Europe, Taiwan and Korea.

One of the main medium term aims is to increase In Store Promotion in order to increase consumers' fidelity to its brands.

Besides extra virgin, in Italy 34,137 t olive oil with a value of 116,165 million Euro were sold to households. The six main firms had a share of 59.8% in total purchases of olive oil by Italian households in 2003. Private labels of retail chain accounted for 12.2% of this market, and other firms for 28%. Thus, this market has a higher concentration than the market for virgin olive oil. The leading firms/brands were Van den Berg (29.3%, by value), Sasso (12.2%), Carapelli (9.8%) and Monini (3.2%) (Ismea, 2004).

The industry in Greece is small and the figures are unknown. Olive oil is produced locally. The only international company present in the oil sector is Unilever, through its subsidiaries Elais and Unilever Hellas (Rabobank, 2003). Approximately 75% of the olive oil produced is virgin olive oil (Panagiotou, 1995).

In Portugal Grup Nutrinvest is the largest group in the oil sector. Through its subsidiaries Sovena (ex-Lusol) and Tagol, it controls 60% of the total refining capacity. Sovena has a large filial company in Spain (Rabobank, 2003). The Portuguese oil sector invests yearly approximately 4.7 million Euro in publicity in this country. Two brands – Oliveira da Serra (70%) and the leading enterprise of this sector (Gallo, 30%) account for practically all these investments. The market share of retail brands has increased from 15% to 23% between 2002 and 2004. The recent changes in the labeling of olive oil will facilitate the marketing activities (communication, etc.) of olive oil brands in Portugal. They tend to favor especially high quality (extra virgin and virgin) olive oils (Hipersuper, 2005).

IV. Marketing structures and business strategies

IV.1. Diversity of operators and marketing channels

Marketing channels

Marketing channels perform a number of functions to get the product to the right place, at the right time and in the right way, so facilitating communications between producers and consumers. In the case of olive oil a number of people are involved along these channels whose importance varies according to the circumstances. Traditionally they are farmers, mills, oil processors, refiners, packers, wholesalers

and retailers. In foreign trade we have to add importers and exporters. The increasing food safety demand of consumers obligates these agents to co-operate to a certain extent in order to obtain a safe product. Chart 1 (in annex) shows the industrial structure of the olive oil production chain. Historically, the general tendency in the EU has been for negotiating power on the market to be transferred from farmers to processors, and for processors to distributors. This has been the case also in the EU olive oil sector where distribution has been ongoing through a process of concentration. Therefore, at present, often the retail chains decide which innovations (e.g., which quality certification) have to be adopted by farmers and processors in order to take account for the changes required in the markets (Langreo, 2004).

According to the markets of the final products obtained, there may be distinguished three different chains: the chain of virgin and extra virgin olive oil, the chain of composed olive oil and the chain of olive-pomace oil. Chart 2 (in annex) shows a general scheme of the entrepreneurial structure of these chains. Within the chain, some enterprises are specialized in one activity, and other enterprises perform several activities, such as refining, bottling and selling. Olive growing holdings usually have strong linkages with the mills. Indeed, many farmers are owners or joint owners of the mills (e.g. in the case of co-operatives). The distribution of olive oil to urban areas within a large chain, usually by large retail chains, is the predominating way of marketing the virgin, extra virgin and composed olive oil. However, the importance of the marketing of virgin and extra virgin olive oils by the olive-growing holdings, mills, packing industries, local stores and restaurants in the surroundings (short chain) has increased in some regions in the last years. These oils often have local brands and differentiated quality (PDO/PGI/ organic product). They are demanded as well by the local population as by tourists. Refined olive pomace oil is sold mainly to restaurants, food industry, or local clients or it is exported. The market for olive pomace oil is in a difficult situation. On one hand, the health warning issued in 2001 following the detection of polycyclic aromatic hydrocarbons in certain olive-residue oils had very negative repercussions on demand for these oils. On the other hand, the increasing share of the two- phase centrifugation in the mills has reduced the profitability of the extraction of olive pomace oil. Now in Spain the prices paid for olive residues just cover the transport costs, and in future probably producers will have to pay for retiring these products. However, the good running of this market is important for economic and environmental reasons (MAPA, 2004a).

In the new, increasingly globalized economic environment described above, which is very much conditioned by demand, operators in the national agribusiness systems need to adapt their present and future production and commercial strategies. As one of these agribusiness systems, the olive oil sector has traditionally been characterized by low levels of development in markets outside the area of production. In this sector, increase in supply has been considerable worldwide, while the increase of demand in the traditional producer countries, which in turn have been the main consumer countries, has been moderate and the increase of demand in the nontraditional markets has been relevant (see chapters I and II). These trends have forced the firms to take more and more into consideration the changes of demand in

the nontraditional markets. Furthermore, the prospects for the olive oil sector depend on a series of macroeconomic, microeconomic and regulatory factors. Some of these factors act on a global level – such as the international regulatory framework to be established – others may vary from country to country, and even within countries amongst different business segments and regions. This means that there is a wide spectrum of possible business strategies for the operators of this sector.

Olive producers

In Spain, there are approximately 500,000 olive producers that get aids. Therefrom, 76% are members of a recognized olive Producer Organization (PO) according to Regulation 136/66/EU. At the end of 2000 in Spain there were 69 olive oil PO with 377.789 producers constituted in order to facilitate the management of the aids. Besides, there were two associations of PO: *Unaproliva*, that groups 11 RPO and 78.000 producers and *Oleuni3n*, with 23 PO and 104,003 producers. There also were 50 Producer Associations according to Regulation 952/97 with 135,665 members which market about 70% of production (MAPA, 2003). Meanwhile there are 71 PO accounting for more than 80% of the countries olive growers. PO administer the aid and sometimes perform other duties, notably in the field of quality improvement. In Spain, national legislation prohibits direct sales of olive oil in bulk by growers. Only few growers have own bottling facilities. Growers sell the bulk of olives to mills, the mills then dealing with marketing of the oil once it has been produced (European Commission 2003a). According to the 1999 census, 68.7% of the olive farms sold their olives principally to co-operative mills, 15% to mills of the processing industry, 2.2% to SAT mills, 12% to other private marketing agents, 0.3% directly to consumers and 1.8% in another way (Regidor and Ruiz-Maya, 2004). Meanwhile, the share of the co-operative mills has increased to about 75%.

In Italy, almost all growers belong to one of the 188 POs. In Italy and, above all in Greece, the mills in many cases merely provide a service (oil crushing), and it is the grower who markets the oil. This fact explains the extent of self- consumption and direct sales by growers. (European Commission 2003a). In Italy, on average, 19.9% of the olive oil is sold for self-consumption (including family and friends), 38.1% directly to consumers or restaurants and 42% to wholesalers, mills or packing plants. In Center-North, the share of olive oil used for self-consumption (32.1%) or sold directly to consumers or restaurants (52.2%) was higher than in the South (15.1% and 32.5%, respectively). In the South, more than half (52.4%) of the oil is sold to wholesalers, mills or packing plants, compared to 15.7% in the Center-North (Ismea, 2004).

In Greece, there are 83 POs, which may belong to a common association. Almost all olive growers belong to a PO. A considerable proportion of the olive oil entering the market (up to 40%) is sold directly by producers or intermediaries to consumers. They usually sell an unbranded product that is not identified by origin or quality

standards. This practice is open to possible adulteration (Patsis, 1995; European Commission 2003a).

Portugal has less (26) POs and a lower percentage of PO membership. In Portugal there are only few direct sales by growers since national legislation prohibits the sale of olive oil in bulk. In France, there is no approved PO. (European Commission 2003a).

In the analyzed EU producer countries, in the rural areas of the main producer regions direct virgin olive oil sales of the mills and packers (e.g. the co-operatives) still are important.

Retailers

In most EU countries, olive oil, as other foodstuffs, is being increasingly sold in large self- service retail stores. For example in Spain, supermarkets and hypermarkets accounted for 87% of total purchases of olive oil by the households in 2002 (Mercasa, 1994). This high share is mainly a consequence of increase of the share of the hypermarkets from 15% to 30% in the period 1990-2002, mainly at the expense of the traditional shops, whose share declined from 15% to 2.5%. The concentration of the sales in the large retail stores was accompanied by an increase of the continued increase of the private labels of the food retail trade. In 2003, their share in the olive oil Spanish olive oil market was between 40% and 50%, according to different sources (Oleo Semanal, 2004, estimates a share of 39%, Segura, 2004 of 45% and Aral, 2004 of 50%). According to Segura, this share grew by 5.7% in the last year and now is higher than any established brand. In any case, this figure is lower for virgin and extra virgin olive oil than for olive oil (mixture of refined and virgin olive oil) (Segura, 2004). In Italy, private labels of the large distribution chain have much less importance. According to the panel of Ismea/Nielsen, with regard to olive oil in 2003 they had a share of 12.3% in volume and 12.2% in value, and with regard to extra virgin olive oil they had a share of 9.5% both in volume and in value (Ismea, 2004). In Portugal, the market share of private labels increased from 15% (2002) to 23% (2004) (Hipersuper, 2005).

Prices for private labels of the food retail trade usually are lower than prices of established olive oil and extra virgin olive oil brands. Some industries, such as Olilan, which belongs to the retail chain Eroski, Sovena and Aceites de Toledo in Spain, are specialized in producing and marketing their oils in this way. Likewise, many second grade co-operatives that pack a part of their virgin olive oils sell these with private labels of the retail chains, as they do not have own, well-known brands. Other enterprises, as for instance Carbonell, sell the bulk of their products with leading brands at high prices and a smaller part of their production with private labels of retail chains at low prices. However, some retail chains, such as El Corte Inglés, position products with their private label at a medium or even high price level. In Italy, the

mentioned figures indicate that there are no significant price differences between the average established olive oil brands and the olive oils sold with private labels of the retail stores.

Some retail chains are multinational enterprises, which are buying and selling their products in many countries and have much power in the negotiations with the food industry. For instance, in Spain and Portugal French retail chains as Carrefour and Auchan, are very important and German enterprises, as Lidl (hard discount) and Macro (wholesale trade) also are getting more and more important.

Parallel to this development, some olive oil Italian and Spanish enterprises have specialised on the production of high quality olive oil, which is sold at a high price level, usually in gourmet food stores or in gourmet departments of large self-service retailers. Italian enterprises are more consolidated in this market segment. Some households and cooks of gourmet restaurants differentiate between the multiple types of olive oil and are willing and able to pay high prices for high qualities.

Hotels, restaurants and institutions usually use other marketing channels and larger-sized containers than private households. Taking in consideration the increasing importance of eating out in many countries, these channels are getting more and more important. For instance, in Spain, while in 1990 12% of the marketed olive oils was sold in restaurants, this share increased to 17% in 2002. By product categories, the share was higher regarding virgin olive oil (21.5%) than regarding olive oil (15%). In 2002, the restaurants and hotels bought both categories of olive oil mainly from distributors (59%), wholesalers (18%) and hypermarkets (8%). Other marketing channels used by hotels and restaurants were supermarkets (6%), Cash & Carry (4%) and other providers (5%) (Mercasa, 2004).

There are many Italian restaurants offering pizzas, pasta and other Italian specialities all over the world. They include as well “fast food” as “slow food” locals. In many of these restaurants, clients can find Italian, branded bottled olive oil.

Like in the retail sector, in HRC an increasing concentration and globalisation of the markets can be observed.

Pricing

When comparing virgin olive oil producer prices in the main EU producing countries, during the crop year 2003/04, prices were higher in Bari (Italy) (on average 261 Euro/100 kg), than in Iraklion/Messina (Greece) (253 Euro) and in Jaén (Spain) (240 Euro). The prices for refined olive oil and refined olive-pomace oil also were higher in representative Italian markets than in representative Spanish markets (IOOC, 2004). In spite of the high integration of the Community market there still are specificities in terms of prices on national markets. The difference between the producer price for

extra virgin olive oil and lampante olive oil is considerable in Italy (about 39%), somewhat lower in Greece (30%) and very small in Spain (7%) (European Commission, 2003a).

Price transmission is not always easy along the marketing chain. Thus, in Spain, last years (2004) many refiners and packers could not transmit the lower prices paid by the retailers to the mills and the farmers. Therefore they had to reduce their marketing margins (Alimarket, 2005).

In the main Spanish production region (Jaén, Andalucía), a future market for olive oil has been created. One of its functions is the improvement of transparency in this market. However, up to now only few marketing agents have operated in this future market.

IV.2. Predominant strategies

IV.2.1. Product valorisation and supply strategies

In Spain, co-operatives of second- and third degree market bulk and packed olive oil of the members of the co-operatives of first grade. They are increasingly packing this oil for the national market. They have created their own labels and are increasing the direct exports. For this purpose, there have been some mergers of co-operatives in the past, and there are planned new processes of fusion in the next future (MAPA, 2004). Some co-operatives have own retail outlets where they market their products. By this way, they integrate all phases of the marketing chain. On the contrary, in Italy industrial co-operativism is scarce.

In Spain, the main olive oil companies are familiar enterprises, which often have a large tradition in this sector. The share of multinational enterprises has decreased in the last years. This trend tends to slow the merging processes of olive oil companies in spite of low marketing margins, as many familiar enterprises are very reluctant to give up their independence (Cinco Días, 2003).

In Italy, multinational enterprises are more important in the olive oil production than in Spain. Their strategy is conceived for operating in many countries. Many companies are accustomed to import oils in order to use them in blends or for processing, increasing the value of the final product, which often is exported.

In Spain, some certification and quality measures have been implemented basically as a consequence of the requirements of foreign customers. For instance, about 85% of organic olive oils are being exported. On the contrary, some other quality measures, such as PDO and IGP target mainly at the domestic market. However, some regions are very successful in exporting olive oils with PDO. Thus, Cataluña, which accounts for 5% of total production in Spain, accounts for about 25% of

Spanish olive oil exports. It has achieved to specialise on oils with high, certified quality, and usually with PDO (Francas, 2005).

Due to the increasing demand of food safety by consumers and retailers, some standards as ISO 9001 and HACCP (Hazard Analysis Critical Control Point) have become compulsory in the EU since 2004 (Wiegand et al., 2004; Rabobank, 2003).

A large number of distribution chains require suppliers to have additional accreditations of oil quality and the olive oil production process by an accredited certification body. One of the principal retailer initiatives with regard to certification and quality measures are the regulations of Eurep-Gap (Euro Retailer Produce Working Group), a group of European retailers. They aim at achieving that the consumers get sure, standardised products with good quality.

In Spain, the main certification organism is the Spanish Normalization and Certification Association (*Asociación Española de Normalización y Certificación-AENOR*). It has specific norms for extra virgin olive oil regarding the processing in the mills, packing and the final product sold to consumers. Its certificates are recognized at national and international level. The international recognition is assured, as AENOR is founding member of IQNet (AENOR, 2002).

In many cases, product valorization by producing olive oils with Protected Designations of Origin (PDO) or Protected Geographical Indication (PGI) has been a successful supply strategy. For instance, in the Spanish region Cataluña, the olive oil PDOs Les Garrigues and Siurana had a good acceptance in the market (see above). In Italy, average prices of virgin olive oils with PDOs are about 50% to 100% higher than prices for similar olive oils in the retail outlets (Meloni, 2001). This strategy makes possible the product differentiation in the market and common promotion and advertising campaigns of producers of a region that otherwise would not be able to make these campaigns. Therefore, and with the support of the common, national and regional agricultural policy, the production of these oils has been increasing continuously in the producing countries of the EU.

However, reportedly sometimes there also are some problems with the marketing of these products, especially in the case of the less well-known PDOs. For instance, in 2002, average prices paid in the domestic market for olive oil with the PDOs Les Garrigues (3.9 Euro/ kg) and Siurana (4.4 Euro) doubled the price paid for olive oils with the PDO Sierra Mágina (2.2 Euro) and Montes de Granada (2.1 Euro) (MAPA, 2004c). On another hand, according to Ortega (2005), in Spain last crop year about 60-70% of the extra virgin olive oils with PDO have been marketed bulk, at an average price similar to the price of any other extra virgin. A similar situation has been observed with regard to the organic olive oils, which often have been sold at prices below production costs. Probably actually there are too many PDOs and other quality seals in Spain, and some of them do not reach a minimum size that is necessary for efficient promotion. Many consumers are confused by the great variety of seals and do not know most of these seals.

In Italy, in 2003 about 0.4% of the olive oil sold by households was organic olive oil, and 0.6% had certification of origin (PDO or PGI) (Ismea, 2004).

Many European olive oil enterprises consider that consumption potential in non traditional consumption markets, such as USA, is higher than in the traditional consumption markets. Indeed, since 1990 yearly growth rates of demand have been very high in some countries as e.g. Japan (19%), United Kingdom (14%) and USA (7%). Therefore, several oil companies are involved in important marketing activities in such countries. For example the Spanish enterprise Koipe/Carbonell (SOS) recently bought the Italian enterprise Minerva Oil that in 2003 was the fourth olive oil enterprise in Italy, with sales of 153,8 million Euro and its brands Minerva, Lupi. Montolivo, Dante and Sasso. One of the main objectives of this measure was to control immediately some 13% of the US olive oil market, where the group expects a more significant demand increase than in other markets. Before, the group had bought American Rice which offered the possibility to use its retail net, with almost 5,000 points of sales, and signed an agreement with Wal-Mart, the largest retail enterprise worldwide (Maté, 2004).

IV.2.2. Marketing strategies

Product

Broadly, we can differentiate between olive oils with a high position in the market and olive oils with a medium or low position. The first option aims at achieving high prices, while the second option aims at getting large quantities at low cost (D Áuria, 2001a; Giap Parini, 2001).

According to the final product obtained, there are markets for virgin oils, for ordinary oil and for olive pomace oil. Marketing strategies for these products may be different, as consumers often use these products in different ways. Many Spanish and Portuguese consumers use virgin oils mainly for salads, and preparing some typical Mediterranean meals, and ordinary olive oil or olive pomace oil for frying. Frying food with olive oil is very common in Mediterranean countries and explains to some extent the high per capita consumption in these countries. Some promotion campaigns inform consumers of the positive repercussions on health of using olive oil for frying.

In Italy, many firms use traditional ways of producing and processing olive oil in order to obtain a very “traditional” product. Many small enterprises sell small amounts of high quality products with own brands. They communicate this aspect to consumers and link it to the local history and culture, as many consumers like to buy such oils, obtained in this way (Capogna et al, 2001). In Spain, the alliance of enterprises “*Grandes Pagos de Olivar*” uses a similar procedure of producing, processing and

marketing its high-quality virgin olive oils. These oils are mixtures obtained with olive of two or three varieties (e.g. Arbequina, Hojiblanca and Koroneiki) that are produced and harvested very carefully in certain farms which have own mills located in the farm (Calduch, 2005).

In Spain the company “*Castillo de Tabernas*” produces olive with an integrated production system (see chapter III.1). A part of the oil is sold as premium quality oil in well-known international gourmet outlets as for instance Harrod’s in Great Britain and Lafayette in Paris (Mercacei, 2004 b).

Several enterprises offer olive oils of specific olive oil varieties, such as e.g. “Arbequina” in Spain, “Nocellaria” in Italy or “Koroneiki” in Greece. For instance, the Swiss company Arena Alimentaria offers these three products in Swiss and German supermarkets (Maroto and Mahlau, 2001). The growth potential of this strategy of product differentiation is high, as they can be produced and bottled in any region (Langreo, 2000).

Some companies develop product innovations. For instance, the Spanish group Borges sells olive oil with a great variety of tastes (spicy, etc.). Other companies market functional products, such as olive oil with vitamins E and C (Mercacei, 2004c). The Spanish group “Grupo Borges” produces and markets olive oil, vinegar, dry fruits and table olives. It exports 65% of its production to 105 countries, and in 2004 it had total sales of 485 million Euro. Its strategy consists in having a strong brand, innovating products and packing and adapting their supply to demand in each market (Expansión, 2005).

In Italy, olive oil companies have some experience in blending olive oils in order to obtain good and stable oil, according to the demand of the clients in the domestic and foreign markets. In this frame, they import bulk olive oils and export bottled olive oils with higher value added (Sivini, 2001).

Another product segmentation strategy is to offer young olive oil, proceeding from a recent harvest. This initiative of the Spanish group Koipe- Carbonell aims at achieving a new, positive image of olive oil, and to reach new consumers (Maté, 2004).

It is worth mentioning that the leading Spanish olive oil enterprise Koipe- Carbonell and some other olive oil firms are trying out new pack types, such as brick cartons, as part of a product differentiation strategy. Brick cartons have traditionally been associated with poor-quality products, but promoters of this packing point out that it is a distorted perception because they do the best function of preserving the properties of the oil by keeping it away from oxygen and light, which transparent bottles do not guarantee.

Some multinational enterprises use only a few olive oil brands that they market at a European/world scale. Two examples for this strategy are the brand Bertolli, from Van den Bergh Italia (Unilever Group), and Carapelli from Carapelli Firenze. Some years ago, the multinational company Unilever decided to reduce the number of

brands and focus the marketing activities on these brands. In three years, the number of brands was reduced from 1,600 to 400. In 2004, it decided to begin to use the seal with the name “Unilever” in all food products of this company. This strategy might make it possible that this seal might become as well known among European consumers as brands as “Nestlé”. In the oil sector, Unilever has increased its marketing activities to promote its principal brand Bertolli. This strategy facilitates the creation of a brand well known among consumers and the realization of promotion campaigns at EU level (Rabobank, 2003, Cinco Días, 2004).

In spite of the advantages of marketing a reduced number of products and brands in many countries, it has to be taken into consideration that consumer preferences with regard to olive oil are quite different in many countries. Therefore, in enterprises should try to find the specific type of product (taste, colour, oil consistency, size of the bottle, etc.) demanded by consumers in each country (D’Auria, 2001b).

While some enterprises are specialized in one or two products (e.g. extra virgin olive oil), other firms offer a range of olive oil products. For instance, many Italian companies only offer extra virgin olive oil. The Spanish co-operative Hojiblanca, which up to now has been specialized in extra virgin olive oil production, plans to complete its product line with refined olive oil, table olives, ecological olive oils and one olive oil with PDO certification (Ortega, 2004).

Another development that can be observed in many oil groups is the diversification of their supply. Many Spanish firms specialized in olive oil have begun to deal with similar products, such as margarine, oilseeds vinegar or table olives (Mercasa, 2004). On the other hand, several wine groups as e.g. Torres, have begun to produce and market olive oil. They have achieved that many specialized wine shops offer some top quality olive oils, and also were successful with the exports, using their contacts and experience (Francas, 2005). Some companies sell olive oil jointly with other products (pizza, salad, cheese, etc.).

Some companies are specialized in the production of olive oil with distributor brands. Due to the fierce competition in food distribution, many retail stores offer olive oil at low prices. Farmers, mills, refineries, packers and distributors have to produce very efficiently. In some cases, they work together in order to make the business channel more efficient and to maximize customer service. In other cases, companies merge to become bigger in size and so take advantage of economies of scale and of scope (Mahlau and Mili, 2001). Farmers aim at producing large quantities of olives at low costs. For this purpose, they minimize the costs for cultivating and harvesting the olive trees, mainly by reducing the labour costs (Giap Parini, 2001). In Spain, some professional organizations, as for instance the inter-branch organization denounce that distributors sell olive oils with distributor brands at prices that are lower than production costs for promotional purposes (Maté, 2003).

Olive oil companies may also use different producer or distributor brands in order to achieve market segmentation. Some companies market the same product –e.g. extra virgin olive oil- with different brands. They often sell a part of their production with their own main producer brand at a high price level and another part with another

producer or distributor brand at lower prices. In this way, they can sell their whole production at reasonable prices, which might be difficult when using another strategy. Consumers often do not perceive that these products are similar.

Consumers' preferences with regard to the product "olive oil" (including virgin and extra virgin olive oil) and its presentation differ among the countries. Thus, while in some countries, consumers prefer a strong taste of olive oil; in other countries they prefer a mild taste. In the main producer countries, olive oil is usually sold in one liter or larger bottles. In non-traditional countries, where per capita consumption is much lower, consumers prefer to buy smaller packing (0.5 or 0.75 liter). In some countries as for instance Germany, consumers like to buy olive oil in dark bottles, in order to assure a good conservation of the oil, in other countries, such as Spain, they prefer clear bottles in order to see the colour of the oil.

Olive oil companies have to find out the consumer preferences in each market and adopt their marketing strategies to the specific circumstances in each market. Sometimes this is not easy. For instance, using focus group methodology according to an Italian survey, German consumers prefer olive oil with a strong taste of olive oil, while according to a Spanish survey they prefer a mild taste of olive oil. These results indicate that there are different types of German consumers. More detailed research (surveys, etc.) would be necessary to quantify the importance of each of these segments of German consumers (D'Auria, 2001; Maroto and Mahlau, 2001).

Many non-producing countries authorize the blend of olive oil with other types of oils. Consumers of these products appreciate them for their light taste and their stability to temperature variations. The main producing countries, however, prohibit the sell of such blends. They consider that the use of the term "olive oil" in these blends may cause confusion among consumers. Another distinguishing feature is that traditional markets tend to sell only home-produced oils of several regions, whereas emerging markets usually stock oils from quite a diversified range of countries. Thus, in traditional markets the regions of origin become a way of market segmentation, and in non-traditional countries the countries of origin (Mahlau and Mili, 2001).

Price

Olive oil tends to be significantly higher in price than other edible vegetable oils, amongst other things because the cost of the raw materials (olives) weights heavily on the total cost of producing the oil. Generally speaking, in Spain olive oil is three times more expensive at wholesale level than sunflower oil (the second most consumed oil). The ratio of between the price of olive oil and that of other common edible oils is in the order of 4 or 5 to 1 in non-producing countries. However, this unfavourable price ratio has not affected significantly its positioning in most countries. In some countries such as Italy and Greece, consumers do not react much to changes in consumer prices (elasticity of demand -0.16). The reaction is more

appreciable in Spain (-0.44), and even higher in France (-0.47) and non producing EU member states (-0.47) (ADE, 2002).

In spite of the high integration of the Community market and the increasing level of trade, there are continuing specificities in terms of prices on the national markets. In Italy, prices for extra virgin olive oil are higher than in Greece, and, above all, in Spain. Spanish prices for the lampante category are higher than those recorded in Italy and Greece. Consequently, the difference between the producer price for lampante olive oil and extra virgin olive oil is considerable in Italy (655 Euro/tonne, i.e. more than 39.4% of the lampante price in the period 1999/2000 to 2001/02), medium in Greece (442.6 Euro/ tonne) and very small in Spain (122 Euro/ tonne) (European Commission, 2003a). These differences in the price differentials indicate that in the Spanish market, quality is not appreciated as much as it should be (Briz and de Felipe, 1995).

Distributors on the Spanish market apply higher margins on virgin oils, which might be detrimental to potential consumption in the medium and long term, especially when taking into consideration the large potential for future production growth and the difficulties in raising domestic consumption (Mili and Rodríguez Zúñiga, 2001).

As a rule, in non-traditional markets there are market price differentials between olive oils, depending on commercial brands and sales points. In many producer countries, the dispersion of retail sales prices is much narrower, both between regions and sales points.

In Italy, in the last years an increasing share of olive oil is sold in the frame of price promotions, including low prices in the frame of distributors promotions “take 3 units and pay 2” (Ismea, 2004).

Promotion, advertising and communication

Despite the educational campaigns run on several non-traditional markets, majority of consumers on those markets still does not know the difference between the different commercial categories of olive oil; nor are they familiar with the designation and properties of each one. This situation even can be found in some traditional markets. Consequently, it would appear necessary to intensify information campaigns targeted at consumers (existing and potential) in order to supply them with helpful information on the characteristics and designations of the different olive oils. Packing and additional information and in-store promotion are very helpful in self-service outlets. In non-traditional markets it is also advisable to give consumers clear, simple explanations about which oil to use for which dish and to give them cooking suggestions for olive-oil based Mediterranean meals. It must not be overlooked that consumer satisfaction is determined more by the end result of the

whole food preparation process than by the quality of the individual ingredients used (Grunert, 2001).

However, the communication campaigns of some companies do not help to clarify the consumers' concepts, and even may cause confusion. Thus, consumers often do not know the meaning of terms of terms as "pure olive oil", and the designation "made in Italy" for oils which just are bottled in Italy may be confusing for many consumers (Sivini, 2001).

Many people engaged in the olive oil sector may organise promotion campaigns, either alone or in co-operation with other organizations. For instance, associations of exporters, as for instance *Asoliva* in Spain make promotion campaigns in cooperation with the companies, ICEX or other national (e.g. Iberia, for promotion of olive oil during the international flies) or regional institutions (e.g. *Extenda*). One of the main tasks of regulation councils of PDO/ PGI producers and councils of organic producers is the promotion and communication. The strategies used by the olive oil PDO/PGI councils may vary a lot (Meloni, 2001).

Companies and their associations

As well in Italy as in Spain, the leading companies spend large amounts of money for promotion of their main brands (Ismea, 2004). The reason is that many consumers are willing to pay higher prices for well- known brands than for brands that they do not know.

In Spain, in the last five years the olive oil exporter association spent yearly more than 8 million Euro for promotion of Spanish olive oils in foreign markets (Ortega, 2004). These promotion programs were made in co-operation with the foreign- trade institution ICEX. Another remarkable association of companies within Spain is *Landaluz*. This association of Andalusia food producers accounts for 31% of the sales of the regional agribusiness sector. It aims at improving food quality and the marketing. It participates in fairs, and promotes agreements with distributors.

In France, multimedia promotion of olive oil decreased by 29% to 16.3 million Euro in the period 2000-2003. This development did not favor an increase of demand (Afidol, 2005).

National and regional programs

Italian olive oils often are promoted using the indication "made in Italy", which sometimes is complemented with the specification of the region of origin. On the contrary, the promotion of Spanish oils has been more focussed on their regional origin. For instance, the regional organizations *Extenda* and *Prodeca* promote food exports from Andalucía and Catalonia, respectively. The Spanish government and

the olive oil industry plan to increase the production of high-quality bottled brands and introduce a generic “España” designation for export to high-income target markets like the United States, as well as new emerging countries like China or India. The Government will use 1.1% of producer subsidies to implement this new marketing program, budgeted for 11 million Euro, which will finance the activities between May 2005 and April 2006 (USDA, 2005).

EU programs

The European Union has some programs in order to promote EU agricultural products and food on the Internal Market and outside the EU, including olive oil, in particular highlighting the advantages of Community products, especially in terms of quality, hygiene, food safety, nutrition, labelling or environment-friendliness. These measures can also cover participation on trade events and fairs, information on the Community system of PDO, PGI and TGS and studies on new markets. The budget appropriations for promotion on the Internal Market are approximately 40 million Euro, and for promotion outside the EU are available around 15 million Euro. Measures are part-financed up to 50% by the EU, the remainder being provided by professional/ interbranch organizations proposing them. For instance, in 2003 a budget of 4,884,955 Euro was available for internal market promotion programmes for olive oil and olives, with an EC contribution of 50%. The Spanish olive oil industry association managed 56% of this budget, two Italian associations 29% and two Greek associations 15% (European Commission, 2005c). As mentioned above, the EU also finances “olive oil information centers” in several EU countries for this purpose. Besides, in 2004 it spent 3 million Euro for funding 50% of an information and promotion campaign for French, German, Italian and Portuguese food specialties (olive oil with PDO or PGI, wine, cheese, fruit, organic products) in the United States, Canada, Switzerland, Russia, Brazil and China (Mercacei, 2004a).

The European Union further contributes to the finances of the generic promotion activities of the International Olive Oil Council in non-member countries such as the United States, Canada, Australia and Japan. In some years, it participated with a voluntary contribution of 5 million Euro to these activities, since 2002, due to the reshuffling of this organization, just with compulsory contribution of 0.5 million Euro provided for by international agreement (European Commission, 2003a). The IOOC has contributed to the regulation of the international trade with olive oil and to the promotion of olive oil consumption in many countries. Within the EU countries, the IOOC usually participates in diverse fairs such as SOL (Verona, Italy), Expoliva (Jaén, Spain), Campomaior (Campo Maior, Portugal), Anuga (Koeln, Germany) and Sial (Paris, France). It also promotes visits of opinion leaders of different countries where it is making promotion campaigns to the producer countries in order to show them the diverse culinary uses of olive oil in the Mediterranean countries, as well as nutritional and cultural aspects related to olive oil (Olivae, 2004). Recently the IOOC has become active again as the EU reinstated its financial contributions. It has just announced it will approve in March a new three-year marketing program for generic promotion of olive oil consumption in Russia, India, China and the Scandinavian

countries, where the per capita consumption is low. The program has a budget of 15 million Euro, of which the EU is the largest financial contributor (USDA, 2005).

Sales points and channels

In all EU countries, the big food distribution chains include olive oil in their product assortment. However, there is a clear-cut difference in the treatment given to edible oils and fats in general and olive oils in particular. Hence, while olive oil is one of the chief items in the product portfolio in the Southern producer countries, it is much less significant in the sales of Northern distributors. This implies very different marketing strategies in each case. How olive oil is marketed at the different points of sales differs accordingly to the structural characteristics and the strategies of each business set-up. Hypermarkets offer a large number of references at relatively low prices. Very few references, high rotation products and very low prices characterize hard discount stores (Mahlau and Mili, 2001). For instance, the German hard-discounter only offer one olive oil reference (Maroto and Mahlau, 2001). Other supermarkets usually run an intermediate number of olive oil references and charge average prices. Gourmet outlets usually carry a relatively low number of references of top-quality, highly priced oils.

Many of the large olive oil companies have their own product distribution channels abroad. Small and medium-sized exporting firms depend, however, on middlemen and/or distributors. Depending on their target, in either case the firms may implement a selective strategy focused on certain markets or segments, or they may opt for a less differentiated strategy in order to achieve a wider geographical scope (Mahlau and Mili, 2001).

IV.2.3. New technologies

Information technology (IT) is developing vigorously. This development is not only a technical factor, it is transforming the way people communicate, do business and live. Access to the Internet has increased for households and enterprises. In the EU-15, in 2003 45% of the households and almost 85% of enterprises had access to Internet. In the analyzed countries, these figures are lower, but they also are growing rapidly (Eurostat, 2004). The use of new technologies –especially information technologies– by producers and distributors has helped to speed up business management operations and to improve customer service. For consumers, these technologies mean that they can place orders from home and have access to other supplier services and information.

Expenditure for IT (equipment and services) has a share of 3% in the EU-15 GDP, 3.3% in France, 1.8% in Italy and Portugal, 1.6% in Spain and 1.2% in Greece. Internet access has increased for both households and enterprises. In 2003, the level of households' access to Internet in EU-15 was 45%. Among the studied countries, it was highest in Italy (about 35%) and lowest in Greece (about 18%). The access of enterprises was higher- between 83% in Italy and 51% in Greece (Eurostat, 2004). There are many virtual food and beverages shops in operation in Spain, and they are developing rapidly. Some offer a range of products while others specialize in specific references, normally gourmet products targeted at well-educated consumers with high purchasing power.

Almost all the big distribution chains are placing heavy stakes on e-business. These firms take advantage of Internet as an additional business channel that allows them to expand their business to new buyers, as well as a tool for supply personalization and customization. However, this dynamism in supply contrasts with a much slower development in demand. The use of new IT on the olive oil market allows producers to provide consumers in many countries with detailed information on the characteristics of their products, its origin, the varieties of olives used, its organoleptic properties, etc.

E-business could thus open up new horizons for small and medium-sized olive oil companies by helping them to enter new markets at much lower operating costs, besides contacting consumers directly and minimizing or doing away altogether with middlemen. But whether firms use such technologies should be considered depending of their direct and indirect costs and benefits, and it should be assessed in terms of the incremental income attributable to their application (Samiee, 1998). The web site www.europages.com gives an example how small and medium European olive oil firms can facilitate information to consumers at EU level.

IV.2.4. Organisation and logistical strategies

Due to the low marketing margins in the olive oil chain and increased quality and safety standards required, horizontal and especially vertical arrangements within the supply chain become necessary. Farmers, oil mills, refineries and retailers have many alternatives to cooperate in order to achieve that food production is efficient and safe. Often the retail chains are able to have a dominating position in the contracts signed with the suppliers due to their high negotiating power with them.

In Spain, a vertical arrangement between farmers and mills is very frequent, especially in the case of the co-operatives. The need to increase the negotiating power of the co-operatives with the industrial sector and the distributors lead to the increasing importance of co-operatives of second or third grade with high storage capacity that manage the marketing of, usually bulk, olive oil (MAPA, 2004).

Since February 2004, a future market for olive oil operates in Jaén (Spain). It aims at achieving a stabilization of the prices, thus minimizing the risks for producers and at increasing the transparency of the market. At present this market deals with lampante olive oil (www.mfao.es).

IV.2.5. Target markets

In the main EU producer countries, olive oil supply has been increasing faster than demand in the domestic markets. Therefore, they have to export an increasing share of their production to non-traditional markets, either within the EU or to other foreign markets. At present, the United States, Japan, Australia, Canada and Brazil are the main target markets for olive oil exports (see above).

There are many geographical areas in which increases in demand are expected, and this suggests that the trend towards international expansion of the product will intensify. According to the results of an evaluation of a Spanish panel of experts (Delphi method), the highest increases are expected in countries with large, high income consumers segment, and where consumers are increasingly aware of the health benefits and cultural aspects of food. In these countries, demand increase of olive oil is directly or indirectly related to its healthy image and promotion. According to this survey, Japan, the United States, Australia, Canada, France and non-producer EU countries have the best prospects for demand increases, while no perceptible demand increase is detected for the largest EU producers (Spain, Italy and Greece) (Mili and Rodríguez Zúñiga, 2001).

The promotional activities of the International Olive Oil Council have contributed to improvement of the healthy image of olive oil and the more than triplication of olive oil imports and the consumption of the United States, Australia, Japan, Taiwan and other non-traditional markets. This increase benefits all the producing countries, especially those that are able to increase their exports to these markets. Since 1990, the IOOC has signed agreements with the United States, Australia, and Japan in order to promote consumption in these countries, establish quality standards for the imported olive oils, etc. (Olivae, 2004).

Other remarkable target markets are Eastern Europe and South and Central America. Spain, Portugal and Italy have historical links to some of these countries, and exports to these countries are considered as a way of preserving cultural traditions (some other examples of target markets were discussed above, see chapter III.2). The recent integration into the EU of ten new member states increases the EU population by 20%. Some of these countries, as Poland and the Czech Republic, have been importing and consuming increasing quantities of olive oil.

While promotional activities of the IOOC usually are generic and global, the activities of the EU usually are related to oil produced in the EU. The promotional activities of

the companies or the associations of the oil industry and national institutions usually communicate the advantages of oils of a certain origin (national or regional) and certain brands in the target markets.

In many cases, marketing efforts just aim at increasing demand in non-traditional countries and consequently, the export of olive oil to these markets. However, some companies may have opened an own commercial delegation in important markets, as for instance the Italian firm Monini in the United States. A further step is the acquisition of mills, refineries, or packers in foreign markets in order to have subsidiaries in these countries.

The principal target markets for the investments of several Spanish enterprises are Eastern Europe and the southern Mediterranean countries. For instance, the firm Ideal has built, jointly with the local company Ideal Syria, a mill and packing plant in Syria. The company Borges bought trade companies in Russia, the United States, Australia and France (Alimarket, 2005). However, some Spanish enterprises focus their marketing efforts on other target markets. For instance, for the leading firm, Carbonell/ Koipe, the United States is the main target market. Moreover, half of the exports of bottled olive oil of the co-operative Hojiblanca are destined to Mexico and Puerto Rico. Most of these exports are marketed on Wal-Mart stores in these countries (Maté, 2005).

Summary and conclusions

Since 1990, in the EU, production has increased substantially and persistently, while consumption has increased in lower proportions. Consequently, extra-EU exports have increased significantly, while EU imports have decreased slightly. At world level, overall production also has increased more rapidly than demand. However, demand has increased outside the EU more than in the EU, due to the demand increases in certain non-traditional markets, mainly the United States, Japan, Canada, Australia and Brazil, amongst others. On the contrary, world production increased less than EU production. Hence, for the future, the main EU olive oil producer countries have to export an increasing share of their production to foreign markets (since supply is expected to increase faster than domestic demand), either within the EU or other non-traditional markets.

Olive oil accounts for approximately 15% of the agricultural output in Greece, 7% in Spain and 4% in Italy and in Portugal. While the share of olive oil exports in total agricultural exports was highest in Greece (7%) and Spain (7%), the share of olive oil imports in total agricultural imports was highest in Italy (4.5 %).

In several of the analysed producing countries, the share of olive oil in total fats consumption has increased since 1990 due to changing habits of consumption towards higher-quality and healthier products. This trend could continue to intensify, as long as a policy is adopted that emphasizes quality and information over prices.

The regulatory environment of the olive oil sector, concretely the Common Market Organisation (CMO) for this product, and the international trade agreements (multilateral WTO, and bilateral agreements) have a substantial impact on the development of production and trade in the EU. From the supply side the processes of trade liberalization and commercial deregulation are creating openings for products from a variety of geographical areas to markets to which it hitherto been difficult to get access. Tariffs and non-tariff barriers are gradually lowering for the exchange of goods and services, and the olive oil is no an exception.

In the CMO, the Council Regulation NR 136/66 of the 22nd September 1966 defined the different types of olive oil according to a former definition of the International Olive Oil Agreement of 1963 and fixed several prices for a standardized quality of olive oil. The reform of 1998 abolished the reference prices and linked aid to actual output for all producers. The CMO was reformed again in 2004. The European Commission is consolidating the concept of decoupling farm subsidy payments from production. The new policy aims at promoting more qualitative aspects, such as product quality, food safety and environmental aspects than quantitative aspects (yields).

In all analysed countries there are numerous professional organisations dealing with different features of the olive oil sector. Their activities have been determinant not only for the increase of production and consumption levels, but above all for the implementation of the CMO stipulations and the vertical coordination arrangements along the marketing chain.

The olive farming is typical of the Mediterranean area. The olive oil tree that is cultivated has numerous varieties. Each variety originates an olive oil with specific organoleptic characteristics such as content in oleic acid, stability, etc. Olive oil trees can survive even under poor conditions but respond positively to improved farming practices. Olives are cultivated in many regions with heterogeneous production systems. Most olive areas are cultivated extensively, with traditional production systems, using few off-farm inputs. However, some new plantations are grown very intensively. They use precise production systems, such as for instance drop irrigation, which allow them to reduce their dependence from the natural endowment and increased quantities of inputs such as fertilizers, insecticides and herbicides. In Italy, 32.4% of the olive oil areas are irrigated, while in Spain the share of irrigated areas is much lower (about 15%). The organic production of olive oil, also called “ecological” or “biological” production in some EU countries, and the integrated production system aim at a production of olive oil with high, certified quality and at reducing soil erosion. In both systems, specific norms have to be fulfilled. Independently of the production system used, olive oils of certain regions may have denominations of origin (DO), which may be defined as “Protected Designation of Origin” (PDO) or “Protected Geographical Indication” (PGI).

A very large number of Community growers (approximately 2.5 million) is involved in the cultivation of olives. Olive oil is cultivated mainly in small and medium farms. The fragmentation of the olive-growing sector at farm level also applies to the mills and the bottling firms. In the last years, there have been introduced considerable technical innovations in the European olive oil mills. The traditional extraction systems have been widely substituted by continuous systems, and within these three-phase systems have been substituted by two-phase systems. In some countries the rationalisation process is not easy due to the persistence of a considerable excess of capacity of the existing mills.

However, the modernization process has affected mainly the introduction of new processes and products, and less the management systems and marketing structures of the olive milling industry. In contrast to Italy and Greece, Spain refines a large part of its olive oil. In Spain, with a few exceptions, the main firms of this sector are now national. In Italy, some multinational firms, such as Unilever, operate in this market in high ranking position.

Historically, the general tendency in the EU (as in the rest of developed countries) has been for negotiating power in the food chain to be gradually transferred from farmers to processors, and subsequently from processors to distributors. This has been the case also in the EU olive oil sector where distribution has been ongoing through a process of concentration (much more intense than in the processing industry). Therefore, at present, often the retail chains decide which innovations have to be adopted by farmers and processors in order to take into account the changes required by consumers and markets.

In most EU countries, olive oil, as other foodstuffs, is being increasingly sold in large self- service retail stores. The concentration of sales in the large retail stores was accompanied by a continued increase of the private (distributor) labels share in total sales. In Spain, prices of private labels of the food retail trade usually are lower than prices of established olive oil and extra virgin olive oil industry brands. In Italy, there are no significant price differences between the average established olive oil brands and the olive oils sold with private labels. Some retail chains are multinational enterprises, which are buying and selling their products in many countries and have much power in the negotiations with the food industry. Hotels, restaurants and institutions usually use other marketing channels and larger-sized containers than private households. Taking in consideration the increasing importance of eating out in many counties, these channels are getting more and more important.

Within the EU, olive oil prices usually are higher in Italy than in Greece and Spain. Olive oil tends to be significantly higher in price than other vegetable oils, amongst other things because of the cost of the raw materials (olives) weights heavily on the total cost of producing olive oil.

Broadly, we can differentiate between olive oils with a high position in the market and olive oils with a medium or low position. The first option aims at achieving high prices, while the second option aims at getting large quantities at lower cost. Consumers' preferences and perception with regard to the product "olive oil"

(including virgin and extra virgin olive oil) and its presentation differ among countries. Many private companies and public organisations engaged in the olive oil sector organise promotion and information campaigns. E-business, amongst other options, could open up new opportunities for small and medium-sized olive oil companies by helping them to enter new markets at much lower operating costs, besides contacting consumers directly and minimizing or doing away altogether with intermediate agents.

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ANNEXES

A 1: Area cultivated with olives, yields and production.

Indicator	Unit	Spain	Italy	Greece	Portugal	France	EU-15
Area with olives	1000 ha						
2000		2,486	1,162	765	369	17	4,799
2001		2,427	1,165	767	369	17	4,745
2002		2,169	1,170	767	370	17	4,494
Yield	100 kg/ unit						
2000		19.9	24.2	28.9	4.7	10.8	21.2
2001		28.8	28.9	24.8	6.3	10.3	26.3
2002		19,0	27.6	25.5	6.0	12.6	21.2
Olive Production	1,000 t						
2000		4,945	2,810	2,215	175	18	10,163
2001		6,981	3,364	1,900	323	18	12,495
2002		4,111	3,231	1,955	223	21	9,542

Source: Based on European Commission (Eurostat), 2005a.

A 2: Structure of the Spanish olive growing farms, 1999.

Farm size (ha)	Farms		Area		Average size (ha)
	Number	%	ha	%	
<0.1	23,605	3.63	1,240	0.05	0.05
0.1-0.2	39,546	6.09	5,534	0.24	0.14
0.2-0.5	110,267	16.98	36,292	1.60	0.33
0.5-1	123,229	18.98	85,964	3.78	0.70
1-2	132,389	20.38	182,713	8.04	1.38
2-3	64,140	9.87	153,380	6.75	2.39
3-4	37,957	5.84	129,115	5.68	3.40
4-5	24,245	3.73	106,914	4.70	4.41
5-10	51,259	7.89	351,824	15.47	6.86
10-20	25,371	3.91	345,849	15.21	13.63
20-30	7,430	1.14	178,673	7.86	24.05
30-50	5,264	0.81	199,078	8.76	37.82
50-70	2,019	0.31	117,424	5.16	58.16
70-100	1,251	0.19	103,208	4.54	82.50
100-150	826	0.13	98,240	4.32	118.93
150-200	337	0.05	57,092	2.51	169.42
200-300	236	0.04	55,061	2.42	233.31
300- 500	92	0.01	33,869	1.49	368.15
500-1,000	23	0.00	15,143	0.67	658.42
1,000-2,500	9	0.00	12,300	0.54	1,366.72
>2,500	1	0.00	4,667	0.21	4,667.00
Total	649,496	100.00	2,273,580	100.00	3.50

Source: INE, Censo Agrario de España 1999.

A3: Structure of the Italian olive growing farms, 1997/98.

Farm size (number of olive trees)	Farms %	Olive trees %	Oil %
<51	29.8	6.3	8.0
51-100	29.5	14.4	13.0
101-250	28.3	28.8	24.9
251-500	8.4	18.8	16.5
501-1,000	2.8	12.3	12.0
1,001-5,000	1.2	14.1	17.3
>5,000	0.1	5.3	8.3
Total	100.0	100.0	100.0

Source: AIMA statistics, cited in D'Auria (2001a).

A4: Evolution of olive tree and olive oil in Greece				
Year	Number of trees	Production (tons)	Price (Drs/kg)	Gross value of production (1,000 Drs)
1990	104,291,779	167,367	563.49	94,309,631
1991	104,950,000	364,100	851.34	309,972,894
1992	105,760,046	303,500	575.91	174,788,685
1993	106,248,762	268,000	593.60	159,084,800
1994	110,772,737	357,785	666.68	238,528,104
1995	114,003,029	407,450	794.77	323,829,037
1996	117,905,650	454,640	1,083.38	492,547,883
1997	121,182,101	453,000	839.91	380,479,230
1998	122,481,028	466,000	674.40	314,270,400
1999	130,769,382	413,000	709.19	292,895,470
2000	129,053,238	430,000	630.50	271,115,000

Source: Greek Ministry of Agriculture, 2005.

A5a: Main brands of extra virgin olive oil bought by Italian households, in value.

	2003	2002	2001	Var. % 2003/02
Total (million Euro)	612,005	575,695	571,846	6,3
	Share in %	Share in %	Share in %	Var. share
1 Van den Bergh	13.3	13.4	13.8	-0.1
Bertolli	11.8	8.9	9.3	2.9
Dante	1.2	1.4	1.6	-0.2
San Giorgio	0.3	3.1	2.9	-2.8
2 Carapelli	11.3	11.5	11.7	-0.2
Delizia	3.2	2.9	3.2	0.3
Il Frantolio	5.5	6.1	5.7	-0.6
Le Macina	1.6	1.2	1.6	0.4
Oro Verde	1.0	1.3	1.2	-0.3
3 Private labels	9.5	10.2	10.1	-0.7
4 Monini	7.8	7.6	7.8	0.2
5 Salov	4.5	4.4	4.4	0.1
6 Farchioi	2.9	2.8	2.1	0.1
7 Sasso	2.1	2.3	2.6	-0.2
Other brands	48.6	47.8	47.5	0.8

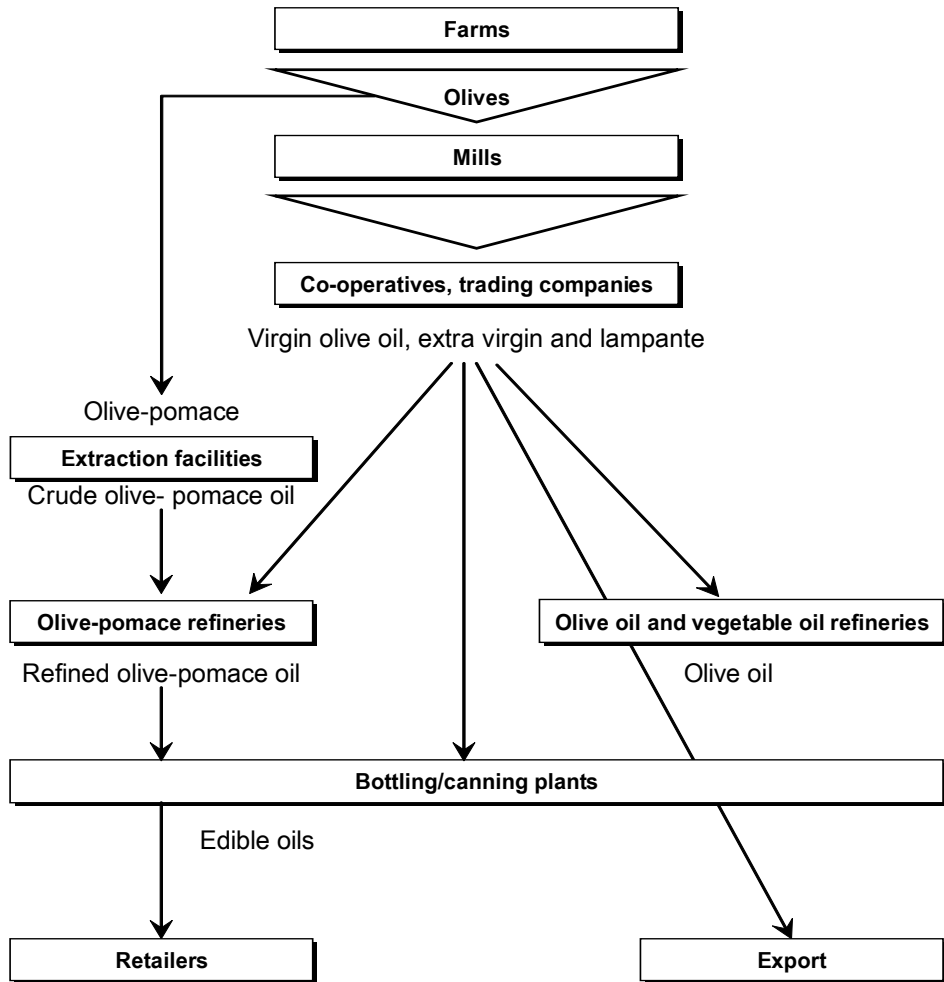
Source: Households panel Ismea/AC Nielsen, cited in ISMEA (2004).

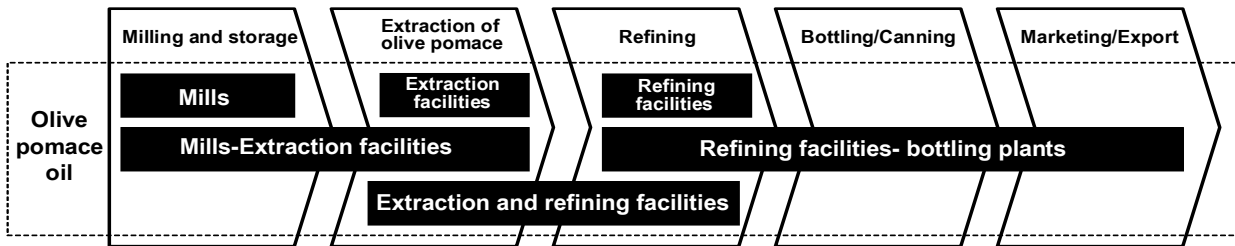
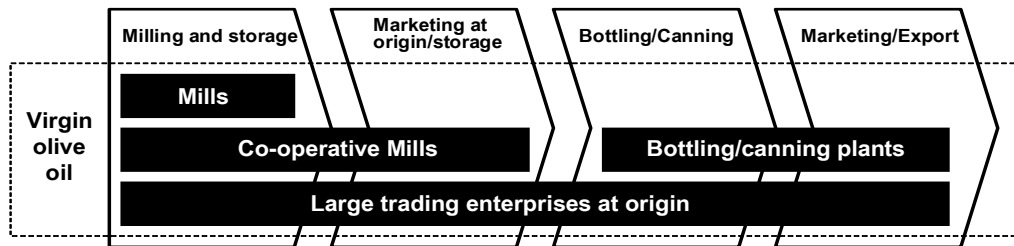
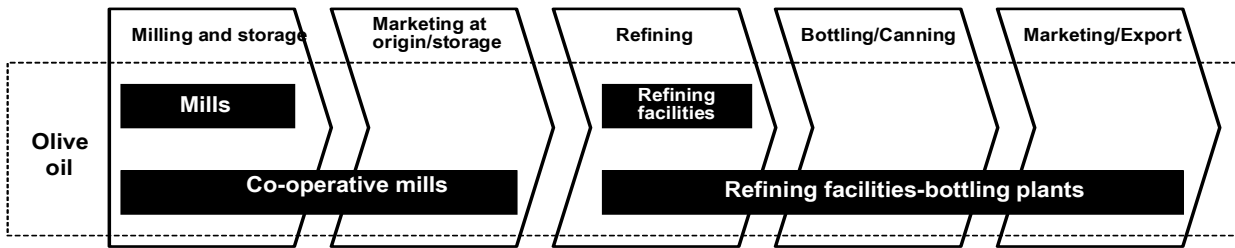
A5b: Main brands of blended olive oil bought by Italian households, in value.

	2003	2002	2001	Var. % 2003/02
Total (million Euro)	116.165	121.094	119.112	-4.1
	Share in %	Share in %	Share in %	Var. share
1 Van den Bergh	29.3	32.5	32.0	-3.2
Bertolli	12.7	13.8	13.1	-1.1
Dante	16.4	17.4	16.5	-1.0
San Giorgio	0.2	1.3	2.4	1.1
2 Sasso	12.2	10.7	10.5	1.5
3 Private labels	12.2	11.0	11.1	1.2
4 Carapeli	9.8	9.1	8.6	0.7
5 Monini	3.2	2.5	2.0	0.7
6 Coricelli	2.7	2.5	2.3	0.2
7 Salov	2.6	2.0	2.2	0.6
8 Farchioni	0.6	0.7	0.7	-0.1
Other brands	27.4	29.0	30.6	-0.6

Source: Households panel Ismea/AC Nielsen, cited in ISMEA (2004).

Chart 1: Industrial structure of the olive oil production chain (general scheme)





Entrepreneurial structure of the olive oil production and marketing chain
(general scheme)

