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# **The global market for olive oil: actors, trends, prospects and research needs**

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## **THE GLOBAL MARKET FOR OLIVE OIL: ACTORS, TRENDS, POLICIES, PROSPECTS AND RESEARCH NEEDS\***

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### **Abstract**

Olive oil is possibly the single globally consumed and traded product most closely linked to the Mediterranean; non-Mediterranean countries account for less than 2.5 per cent of world production. The paper addresses recent trends in the olive oil world market and the current structure of trade. With respect to existing analyses, its value added is in the level of detail at which the analysis of current trade is conducted, in particular by considering bilateral olive oil trade flows disaggregated with respect to its quality. The main conclusion reached is that the key factors for the future of the market are developments in demands and in the imperfectly competitive structure of the industry, while supply factors and expected changes in trade policies, although relevant, are likely to play a less important role.

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# THE GLOBAL MARKET FOR OLIVE OIL: ACTORS, TRENDS, POLICIES, PROSPECTS AND RESEARCH NEEDS

## 1. Introduction

Olive oil is possibly the single globally consumed and traded product most closely linked to the Mediterranean; in 2004-2005 non-Mediterranean countries accounted for less than 2.5 per cent of world production.

The olive oil market is very complex: production is spread over developed and developing countries and is realized through very different production systems, even within a single country;<sup>1</sup> olive oil is produced regionally but traded globally; crushing activities are dispersed, while bottling has become more and more concentrated, with a strong presence of multinational firms; however, at the same time, branding by small bottlers with effective marketing strategies is proving profitable (similarly to what has been observed, on a different scale, in the wine industry); olive oil consumption is growing, but consumption patterns vary widely, both in quantity and quality; market segmentation is the norm; in some countries and for some consumers (the better off and more educated) quality product attributes have come to assume an increasingly important role in consumption decisions; the largest producer and consumer of olive oil, the European Union (EU), tenaciously protects its domestic market, despite the preferential access it grants to a number of Mediterranean countries; some large exporters are large importers as well, and there are also exporters that produce no olive oil at all; finally, the olive oil market is characterized by many conflicts of interest, vertically as well as horizontally along the “chain”, domestically as well as between actors of different countries.

In recent years developments in olive oil production, consumption and trade have received more attention than in the past.<sup>2</sup> The goal of this paper is to address recent trends in the olive oil world market and the current structure of trade, with the aim of identifying policy issues and research priorities. With respect to existing analyses, the value added of this paper is in the level of

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<sup>1</sup> The existence of different farm systems in the olive oil sectors of Italy and Spain is addressed in Anania *et al.* (2001), D’Auria (2001) and De Gennaro (2005a, 2005b).

<sup>2</sup> Contributions include Cavazzani and Sivini (2001), Grigg (2001), Mili (2006), Mili and Mahlau (2005).

detail at which the analysis of current trade is conducted, in particular its consideration of bilateral trade flows disaggregated as regards to quality. The next section briefly recalls recent developments in world production and consumption, while section 3 focuses on trade, with a specific emphasis on trade and trade policies in the Mediterranean. The concluding section briefly discusses the implications of the analysis in terms of outstanding issues and research needs.

## **2. Recent trends in olive oil production and consumption**

Since the mid '90s, Spain has consistently been the largest producer of olive oil, with a share of world production in volume in the most recent years varying between 46 (in 00/01) and 32 (in 04/05) per cent (Figure 1).<sup>3</sup> In 04/05 Italy and Greece accounted for 28 and 13 per cent of world production, respectively (Figure 2), the EU-25 for 76 per cent; the main non-EU producers were, in the order, Syria (7 per cent), Tunisia (5), Turkey (5) and Morocco (3). Non-EU, non-Mediterranean countries accounted for 1 per cent only of world production.

World production of olive oil has been increasing over time; in 04/05 it exceeded 2.5 million tons, +35 per cent with respect to 90/91 (Figure 3); most of the expansion occurred in the largest producing countries, although changes in production have not been homogeneous across them. If we compare the 90-93 and 02-05 four-year averages, among the most important producing countries the largest production increases took place in Syria, where production more than doubled (+ 127 per cent), in Turkey (+ 97 per cent) and Spain (+ 64 per cent); lower increases occurred in Italy, Morocco and Greece while, at the same time, production in Tunisia declined by 18 per cent (Table 1). Among the other Mediterranean countries, the largest production increases between 90-93 and 02-05 occurred in Israel (where production increased by almost 19 times, from 230 to 4,530 tons), Cyprus, Croatia, France, Jordan and Slovenia; a large increase (+ 144 per cent) occurred in Australia, where, however, olive oil production remains below 200 t. Differences across countries are not limited to the magnitude and sign of the observed changes in olive oil production, but extend to its variability around the trend over the period considered (Figure 4); while Italy and Syria show

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<sup>3</sup> Two-year averages are considered to reduce the effects of the bi-yearly cyclical variability in production. Production and consumption data are from FAO (FAOSTAT database).

a more regular growth in production over the years, this is not the case for Spain, Tunisia (these two countries show the largest variability of production around the trend), Morocco, Turkey and, to a lesser extent, Greece.

As a result of the drastic 2004 reform of the EU domestic policy for olive oil, which fully decoupled support from production, in few years production in the EU is expected to continue to grow but at a slower rate, or to decline, and quality to increase; this will result mostly from adjustments which will occur in Italy and Greece, and only to a lesser extent from developments in Spain, where the impact of the policy change is expected to be much smaller.

Italy is the country with the highest consumption of olive oil (30 per cent of overall world consumption in 2003, the most recent year for which information on consumption is available), followed by Spain (19 per cent) and the United States (8 per cent of world consumption); the other main consumers of olive oil are Greece (7 per cent), Syria (5 per cent), France (4 per cent) and Morocco (3 per cent) (Figures 5 and 6). The non-Mediterranean European countries, all together, account for 9 per cent of world consumption.

A country's consumption can be seen as the product of per capita consumption in the country and its demographic size. Greece, Italy and Spain, in this order, are the countries with the highest annual per capita consumptions in 2003 (Figure 7). Patterns of per capita olive oil consumption vary widely across countries, even among traditional consumers;<sup>4</sup> in Morocco, the country with the 10<sup>th</sup> highest per capita consumption, for example, this was 1/6 of that in Greece, the country with the highest one. Per capita consumption in non-European, non-Mediterranean countries is sometimes higher than in Mediterranean countries; in 2003 per capita consumption in Australia (1.4 kg per capita), New Zealand (1), Canada (0.8) and the US (0.7), for example, was higher than that in Turkey (0.6) and Malta (0.6) (as well as that in Ireland, the Netherlands, Sweden, Denmark, Austria and Germany). Since 1990 per capita consumption of olive oil has been significantly increasing in

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<sup>4</sup> Grigg (2001).

most countries and in all the main consuming ones, but for Greece, the one with the largest per capita consumption, and Jordan, where it declined (Figure 7).

Observed differences in per capita consumption of olive oil are largely explained by consumption habits, with differences in per capita incomes playing a significant but much less important role; per capita consumption in 2003 can be largely predicted based on its value few years before; if the relation

$$PcC_{2003} = \alpha + \beta PcC_{1993} + \gamma PcY_{2003} + \delta (PcY_{2003})^2 \quad (1)$$

is estimated by OLS – where PcC is per capita consumption of olive oil and PcY is per capita income<sup>5</sup> - the following results are obtained:<sup>6</sup>

$$\alpha = -0.007426 \quad ; \quad \beta = 0.9326242 \quad ; \quad \gamma = 0.0000459 \quad ; \quad \delta = -0.00000000086$$

$$(-0.27) \quad (14.88) \quad (3.48) \quad (-2.29)$$

with N= 143 and  $R^2 = 0.9711$  .  $\gamma$  being positive and  $\delta$  being negative and their magnitudes mean that observed olive oil per capita consumption increases with per capita income, but by a smaller percentage.

Changes over time in per capita consumption of olive oil appears to be positively related to changes in per capita income and negatively related to the starting value of per capita consumption (the higher the change in per capita income, the higher the change in olive oil consumption; the higher the starting level of olive oil consumption, the lower, *ceteris paribus*, its increase over time).

World consumption of olive oil has been growing quite regularly over the years (Figure 8); as for production, changes in consumption are far from being uniform across countries. Among the largest European producing countries, consumption increased in volume between 1990 and 2003, although at a slower rate with respect to world consumption, in Italy, Spain and Portugal; in Greece, on the contrary, consumption declined (in all these countries per capita and total consumption changed in the same direction). The other European countries all show substantial increases in consumption - of an order of magnitude of 200-300 per cent or more - between 1990

<sup>5</sup> The analysis has been restricted to developed and high-income developing countries (143 countries with a per capita income above 2,000\$ per year).

<sup>6</sup> The numbers in parenthesis are the t values.

and 2003; however, per capita and overall consumption levels remain low in these countries, apart from France, the sixth highest world consumer of olive oil, where consumption almost tripled between 1990 and 2003.

Analogously, changes in opposite directions can be observed between 1990 and 2003 for olive oil consumption in the largest producing non-European, Mediterranean countries; consumption increased in Jordan, Morocco, Syria, Tunisia and Israel (in the latter, olive oil consumption in 2003 was more than six times that in 1990), but declined in Algeria, Egypt, Lebanon, Libya and Turkey. Finally, in non-Mediterranean countries with relatively low per capita and overall consumption levels these have been growing significantly, both in Europe and elsewhere, with per capita consumption increasing at higher rates in European countries than in non-European ones (Figures 7 and 8); in most cases these countries have been targeted over the years by EU financed market promotion programmes aimed at informing consumers of quality attributes of olive oil, thereby increasing the number of consumers as well as the frequency of the purchases by those who already consume it. Most of these promotional activities proved effective; some of the benefits from the increased market size are likely to have been enjoyed by producers (as well as bottlers and traders) outside EU boundaries. Because of large demographic size and growing per capita incomes, in many countries characterized by a low but increasing per capita consumption of olive oil - both developed (in Europe as well as elsewhere) and dynamic developing ones - prospects for the global demand of olive oil appear definitely promising (Mili and Zuñiga, 2001). Future developments are mostly linked to developments in consumers attitude towards the “Mediterranean diet” and health concerns, changes in incomes and to the effectiveness of further strategic marketing promotion activities (Mili, 2006).

In the future, the olive oil market will probably be more and more segmented on the basis of product quality differentiation, with price playing a relatively less important role than in the past (Mili and Zuñiga, 2001). This is already evident in the relatively richer countries where olive oil is part of the traditional diet, where it can be seen (and it is strategically managed as) a “mature” food



item;<sup>7</sup> in these countries increases in consumption are driven by differentiated consumption patterns, with an increasing share of consumers moving from bulk purchases directly from producers to purchases of bottled and branded olive oil from large retailers; from conventional to organic olive oil; from olive oils whose origin is not specified to oils with a certified geographical indication, as is the case for protected denomination (PDO and PGI) olive oils in the EU;<sup>8</sup> among other things, this implies that in these countries increases in *expenditure* to purchase olive oil are likely to be much larger than observed increases in consumed *volumes*. In non-traditional markets consumer demands for quality attributes and services is today definitely quantitatively more limited and, possibly, less sophisticated; however, in non-traditional markets characterized by higher per capita incomes a clear trend can be observed towards patterns which occurred only few years ago in traditional markets.<sup>9</sup>

### **3. Olive oil trade**

#### *3.1 Olive oil trade: recent trends*

Spain and Italy are not only the main world producers of olive oil, but the largest exporters as well; the third largest exporter is Tunisia, which is the fifth largest producer (Figure 9).<sup>10</sup> These three countries alone accounted in 2004 for 89 per cent of olive oil exports in value. Olive oil world exports increased by 84 per cent in value between 90/93 and 01/04 (over the same period production in volume increased by 43 per cent) (Table 2; Figure 10). Exports by Spain and Italy both increased in value more than world exports (by 99 and 167 per cent, respectively), which means they both increased their market shares (and, in the case of Italy, by a large amount) (Figure 11). Among the other main exporters, olive oil exports declined in Greece (-29 per cent) and France

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<sup>7</sup> Consumer attitudes toward olive oil and purchase behaviours in Italy and Spain are addressed in Caporale *et al.* (2006), Del Giudice and D'Elia (2001), ISMEA (2004), D'Auria (2001) and Rosa (2001).

<sup>8</sup> Evidence of the growing importance consumers give to the "origin" of the olive oil and of certified denominations of origin being perceived by consumers as a "quality" signal is provided in Akil (2004), Cañada and Vázquez (2005), Dekhili and D'Hauteville (2006), Ribeiro and Santos (2004), Scarpa and Del Giudice (2004), and van der Lans *et al.* (2001).

<sup>9</sup> Recent developments and marketing strategies for traditional and non-traditional markets are discussed in Cañada (2001), Meloni (2001) and Mili (2006).

<sup>10</sup> Karray (2006) offers a detailed discussion of the domestic and external determinants of Tunisia competitiveness on the olive oil world market.

(-70), while in Tunisia they did not change significantly, but show a strong variability; large increases between 90/93 and 01/04 occurred in Syria, Turkey, Portugal, Jordan, and Israel; finally, significant export increases occurred as well in countries which do not produce olive oil, such as Egypt, UK, Germany, Canada and Saudi Arabia (Table 2).

As expected, olive oil imports are less concentrated by country than exports. Italy, the second largest exporter of olive oil, is at the same time the largest importer, with 40 per cent of world imports in value in 2004; the other main importing countries are the US (15 per cent of world imports), France (6), Spain (6), UK (4), Germany (4), Portugal (4), Japan (3) and Australia (2) (Figure 12).

Olive oil imports increased in value between 90/93 and 01/04 by 91 per cent<sup>11</sup> (Table 3; Figure 13). Among the main importers, in the countries where olive oil was not traditionally consumed (such as the US, Germany, the UK, Japan and Australia) increases in imports are systematically larger in percentage terms than those in countries where it is part of the traditional diet (such as Italy, France and Spain) (Table 3; Figures 13 and 14). In the United States, the third largest consumer of olive oil, imports more than doubled between 90/93 and 01/04. While this is not the case for Italy, in Spain olive oil imports show a great variability and appear to be negatively related with domestic production; this may imply that imports by Spain are mostly driven by the need of the domestic industry to fulfil a given annual target in terms of volume of bottled/handled olive oil, with domestic production being utilized first.

Most countries act, at the same time, as exporters and importers of olive oil; however, some of them do so to an extent which clearly implies arbitraging activities, i.e. agents in these countries finding it profitable to re-export, after manipulation (which may include blending it with other oils and bottling it) some of the imported olive oil. Among the main exporters, those who, at the same time, import large quantities of olive oil are Italy and, to a lesser extent, Portugal; both countries are

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<sup>11</sup> The difference between the growth in overall world imports and exports is mainly due to reporting differences and errors from the original data sources (exporting countries for exports and importing countries for imports); part of the difference is due also to the fact that a shipment toward the end of the year registered by the exporting country may land and be registered in the importing country at the beginning of the following year.

net importers. In the four year period 01/04 the value of Italy's exports of olive oil was more than 81 per cent of the value of its imports (it was much less, 46 per cent, in 90/93); for Portugal exports were 53 per cent of imports, in value (58 per cent in 90-93). Among the other exporting countries, those with a value of imports exceeding 50 per cent of that of exports are Morocco (73 per cent) and Egypt (58 per cent).

### *3.2 Olive oil trade in the Mediterranean: current structure and the role of policies.*

In this section of the paper the focus shifts to the structure of current olive oil trade, giving specific attention to trade within the Mediterranean basin. While in the analysis so far EU member countries have been considered individually, now the EU-25 is treated as one country and trade net of intra-EU flows is considered.

Olive oil trade flows in value by the main country of destination for the most important exporting countries are given in Table 4 and represented in Figures 15 and 16.<sup>12</sup> In 2005 four exporters accounted for more than 90 per cent of the world market in value; EU-25 as a whole, ignoring intra-EU trade, remains the largest exporter of olive oil, with 65 per cent of the market, followed by Tunisia (14 per cent), Turkey (10) and Syria (4).

48 per cent of EU-25 exports in value are directed towards the United States alone, 10 per cent to Japan and 6-7 per cent each to Australia, South Korea, Canada and Brazil. More than 90 per cent of Tunisia and Syria's exports is directed to the EU; 6 per cent of Tunisia exports are shipped to the US. Turkey's exports are much more differentiated by country of destination, with "only" 59 per cent of exports going to the EU-25, and 24 and 6 per cent to the US and Canada, respectively.

Contrary to what many may *a priori* believe, trade in olive oil is not limited to high quality products. Virgin olive oil accounts for 62 per cent of EU-25 exports in value (58 per cent in volume), the remaining part being exports of refined olive oils (which include blends of virgin and

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<sup>12</sup> The data source is now the UN COMTRADE data base; information has been extracted using the importing countries as the reporting sources.

refined olive oils) (Tables 5 and 6).<sup>13</sup> While Morocco and Turkey export shares of virgin and refined olive oils are similar to those of the EU-25, Tunisia and Syria export almost exclusively virgin olive oils.<sup>14</sup>

*How much do Mediterranean countries “depend” on the EU market for their olive oil exports? Do Mediterranean countries all “depend” from EU imports to the same extent? Is this “dependency” driven by EU import policies?* Figure 17 gives for all Mediterranean exporters the value assumed by an “exports concentration index” for the EU-25 market; the index is defined as the ratio of the share of a country’s exports to the EU-25 over its total exports, divided by the share of EU-25 imports over total world imports (values of the index larger than one signal a concentration of the country’s exports on the EU-25 market). The largest concentration, or “dependency”, is observed for Tunisia and Syria (the index assumes its maximum value, 3.56), Libya and Morocco. How much is this dependency due to EU trade policies: preferential market access granted to some of the Mediterranean countries and “Inward Processing Relief Traffic” (IPRT) provisions? The maximum tariffs the EU could impose under WTO rules on its imports of “lampante virgin”, “virgin, other than lampante” and “other” olive oils<sup>15</sup> are 122.60, 124.50 and 134.60 €/100kg, respectively. However, several Mediterranean countries benefit from duty-free import quotas (those in place in 2005 are given in Table 7)<sup>16</sup> and few benefit from the imposition of preferential tariffs (these are mentioned below). Under IPRT conditions duty-free imports are allowed subject to the restriction that they are re-exported (for example, as part of a processed product, as part of a blend with other olive oils, or, in principle, after being only bottled).

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<sup>13</sup> What we refer here to as *olive oil* is what in the NC classification is code “1509”; *virgin olive oil* is what is classified as “1509 10” and *refined olive oil* is “1509 90”.

<sup>14</sup> As already mentioned, more than 90 per cent of Tunisia and Syria exports are shipped to the EU.

<sup>15</sup> “Lampante virgin” olive oil is CN heading 1509 1010, “virgin, other than lampante” is 1509 1090 (among other things, the acid content in oleic acid cannot exceed 3.3 g per 100 g) and “other” olive oils is 1509 9000 (these are refined olive oils different from those which are obtained by solvent extraction, which are included in heading 1510 instead).

<sup>16</sup> Jordan did not have any preferential access in 2005, but since 2006 it is the beneficiary of a duty-free quota which will progressively expand until it will reach 12,000 t in 2010; the quotas for Morocco and Cisgiordania (including the Gaza strip) will increase and reach 3,920 and 3,000 t in 2007, respectively; from 2006 the annual quota for Algeria is 1,000 t; Turkey has now a 100 t quota with a 7,5% ad valorem in-quota tariff.

Libyan and Syrian exports to the EU are not granted any preference, i.e. they are subject to MFN (Most Favoured Nation), non preferred conditions; while Libya's exports in 2005 amounted to 359 t only, those from Syria were 30,983 t. All Libya's exports to the EU and more than 95% of those from Syria occurred under IPRT conditions (Table 7). Tunisia and Morocco's exports to the EU in 2005 were 98,567 and 16,904 t, respectively, well above the 57,167 and 3,710 t duty-free quotas they were granted in that year by the EU-25; in fact, exports from Tunisia and Morocco under IPRT were 51,096 and 12,970 t, respectively. For Turkey, Jordan, Egypt and the Occupied Palestinian Territories the exports concentration index is smaller than those observed for Libya, Tunisia, Syria and Morocco, but greater than one; in 2005 Turkey benefited from a small preference,<sup>17</sup> and the Occupied Palestinian Territories from a 2,000 t duty-free quota, while imports from the other countries were not granted any preferential treatment.<sup>18</sup> Values of the concentration index below one, which signal exports to the EU-25 below those which would occur if the country were to export to this market a share of its exports equal to the share of the EU-25 in world imports, are observed for Israel and Lebanon, the former receiving no preferential treatment on its exports of olive oil to the EU, the latter enjoying a small duty-free quota of 1,000 t for exports of virgin and "other" olive oil<sup>19</sup> (which in 2005 it did not fill) and quota- and duty-free access for its exports of refined olive oil (202 t in 2005); 64 per cent of Israel exports are shipped to the US, 21 per cent to the EU-25 and 8 per cent to Japan, while 45 per cent of Lebanon exports are shipped to the US, 16 per cent to the EU, 18 per cent to Canada and 13 per cent to Australia. Hence, it can be concluded that the degree of specialization/"dependency" of exports by the Mediterranean countries to the EU market is generally significant, but far from uniform, and, at least in part, seems to be policy driven, by the differences in the preferential access olive oil exports from different countries are granted, if any, by the EU. The IPRT scheme plays a very important role as well in olive oil trade in the Mediterranean. In this case, however, the policy affects the volume of olive oil imported by the EU,

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<sup>17</sup> A 10 per cent reduction of the MFN tariff for "virgin" olive oils (CN headings 1509 1010 and 1509 1090); a 5 per cent reduction for refined olive oils (CN heading 1509 90) and olive oils obtained by solvent extraction (1510).

<sup>18</sup> Since 2006 Jordan is allowed to exports quota-free and duty free refined olive oil (CN heading 1509 9000)

<sup>19</sup> This is olive oil obtained by solvent extraction (CN heading 1510).

while the decision about from which source to import it from is solely based on price and quality competitiveness considerations at market conditions.

CIF average import unit values vary significantly between exporting countries, by quality (virgin or refined) as well as country of destination (Tables 5 and 6). These differences can be seen as the result of a combination of causes, including transport and transaction costs; the relative cost competitiveness of exporting countries; services and product quality differentiation different from that which can be explained by the classification of the olive oils in virgin and refined; and the effectiveness of strategic marketing/purchasing strategies, including market discrimination (the exporter's capacity to sell a given olive oil to different markets at different prices). EU-25 average per unit export values for virgin olive oil at the border of the importing country are 10-20 per cent higher than those of the other main exporters; in the case of refined olive oil, average per unit import values for Morocco exports are slightly higher than those of the EU-25 both in the US and the Canadian markets (Table 6). Exports from Syria and Tunisia have the lowest average per unit import values for virgin olive oil. Tunisia, Turkey, Syria and Morocco all show smaller wedges between the average per unit export values of the two qualities with respect to that observed for the EU-25. Syria sells its refined olive oil to the US, the EU-25 and Australia at a price above that at which it sells the virgin one, although one has to keep in mind that more than 90 per cent of Syrian exports are virgin olive oils shipped to the EU-25.

The EU-25 average per unit CIF export values vary significantly according to the country of destination, even for olive oils of the same quality; the lowest values, for both categories, are those observed for exports to the US (3.9 and 3.3 \$/kg for virgin and refined olive oils, respectively); the highest are those observed for exports to Japan (5.3 and 4.3 \$/kg, respectively), with exports to Canada and Australia showing values between these two extremes; refined olive oil exported by the EU-25 to Japan sells at the importer's border at a greater per unit value than virgin olive oil shipped to the US; because of the magnitude of the gap observed, this difference can only in part be explained by higher transport costs.

The share of virgin oils over total EU olive oil exports varies according to the country of destination; virgin olive oils are 64, 60 and 66 per cent of EU-25 exports to the US, Japan and Canada, respectively, but 88 per cent of its exports to South Korea and only 37 per cent of those to Australia.

If we now change perspective and we look at olive oil trade in 2005 from the importers' point of view, the US emerges as the largest importer (with 36 per cent of world imports in value), and the EU-25, now that intra-EU trade is ignored, as the second largest one (26), followed by Japan (6), Canada, South Korea and Australia (all with 5 per cent of world imports), and Brazil (4) (Figure 18).

86 per cent of US imports in value of olive oil are from the EU-25; the other main suppliers being Turkey (7 per cent), Argentina (3), Morocco and Tunisia (2 per cent each). 66 per cent of US imports are virgin olive oils. The US average CIF unit import values of virgin and refined olive oils are 3.8 and 3.3 \$/kg, respectively (Tables 5 and 6); the olive oils with the highest average per unit import values are those imported from Morocco. The main origin of EU-25 imports is Tunisia (50 per cent of EU imports in value), followed by Turkey (22) Syria (15) and Morocco (9); the EU imports mostly virgin olive oils (79 per cent; the share of virgin olive oils in its exports was 62 per cent). The average per unit import value for the EU is the same (3.3 \$/kg) for both virgin and refined olive oils (for all other main importers the average import unit value is greater for virgin olive oils); only minor differences are observed in the EU average per unit import values according to the country of origin of imports. Japan imports almost all (96 per cent) of its olive oil from the EU; only 60 per cent of its imports are virgin olive oils. Japan average per unit import values are the highest among the main importers for both, virgin and refined olive oils; as already mentioned, higher transport costs are only part of the explanation (the analogous average per unit import values for Australia, for example, are significantly lower, and for this country too olive oil imports come almost entirely from the EU). Most of Canada imports originate in the EU (82 per cent), but a significant share is imported from Turkey (12 per cent); 66 per cent of Canada imports in value are

virgin olive oils; the average per unit values of virgin olive oil imported from Turkey and the EU are almost the same, while the per unit value of refined olive oil imported from Turkey is significantly lower than that imported from the EU. South Korea is today one of the main importers of olive oil. In 2003 consumption reached 6,700 t, the same as Finland, Poland and Ireland together; it was less than 200 t in the early 90s and most of the increase has taken place in most recent years. 92 per cent of Korea's imports come from the EU, with 7 per cent being imported from Turkey. Among the largest importers, Korea is the one for which virgin olive oils are the largest share of imports (85 per cent). As was the case for Canada, the average per unit values of virgin olive oil Korea imports from Turkey and the EU are very close, while the per unit value of the refined olive oil it imports from Turkey is lower than that of the refined oil imported from the EU. The EU-25 is the source of 96 per cent of Australian imports of olive oil. Among the largest importers, Australia is the only one where the value of imported refined olive oils exceed that of virgin ones; in fact, virgin olive oils account only for 37 per cent of its olive oil imports (which means an even smaller share of its imports in volume).

#### **4. Conclusions**

The key factor for the future of the world market of olive oil seem to be developments in demands. Aggregate demand will continue to grow in most countries, with ample margins existing for further expansions in per capita consumption levels, both in developed and developing countries. The rate at which consumption will continue to grow will depend, at least in part, on the extent and effectiveness of country-specific market promotion programmes. The quantitative expansion of the markets will go hand-in-hand with an increase in their segmentation and in the differentiation of consumption behaviours (and, as a result, with a quality-based product diversification and a differentiation of marketing strategies); an increasing share of consumers will demand olive oils differentiated on the basis of product and process quality attributes, such as those linked to the origin or to the olive oil being the result of organic production practices. Increasing production in non-traditional producers, rather than being a threat, will help the demand expand in those countries



and, because of the premium price at which domestically produced olive oils are sold, the market penetration by higher quality (and higher priced) imported olive oils. Despite several recent studies addressing consumer attitudes towards both olive oil in general and different quality attributes, the potential and timing of the expansion in demand, the dynamics of the increasing market segmentation and consumer willingness to pay for specific quality attributes, all need significant additional research efforts in order to provide firms with adequate information on which to base production and strategic marketing decisions.

Domestic and trade policies are relevant in shaping the future of the market, but only to a lesser extent. The 2004 reform of the EU Common Market Organization for olive oil significantly reduced domestic distortions and may soon bring a reduction in production and an increase in quality. The reduction in market protection as a result of the conclusion of the Doha round of the WTO and the creation of a free trade area in the Mediterranean basin, if and when they occur, will certainly affect olive oil trade, but will likely affect trade flows between Mediterranean countries more than net trade volumes. There is very little research assessing the possible impact of a reduction in tariffs, either on a multilateral basis or on a bilateral basis, between the EU and the countries of the southern shore of the Mediterranean.

A third factor which is important to consider in assessing future developments of the olive oil world market is the structure of the industry. The increasing concentration and multinationalisation of the bottling component of the industry, with a very small number of firms owning the most valuable labels and controlling most of the olive oil sold in the largest markets, makes this market imperfectly competitive. Conflicts between the bottling industry (and some foreign exporters), on one side, and producers in the largest producing countries, on the other, exist and are not likely to be resolved in the near future; for example, domestic producers in Italy have been strongly opposed to the use of imported olive oils in blends to be sold, domestically as well as on foreign markets, to final consumers perceiving the olive oil they bought as been “produced in Italy” (with the bottlers benefiting from consumers willingness to pay a premium for Italian olive oil). Strategic decisions

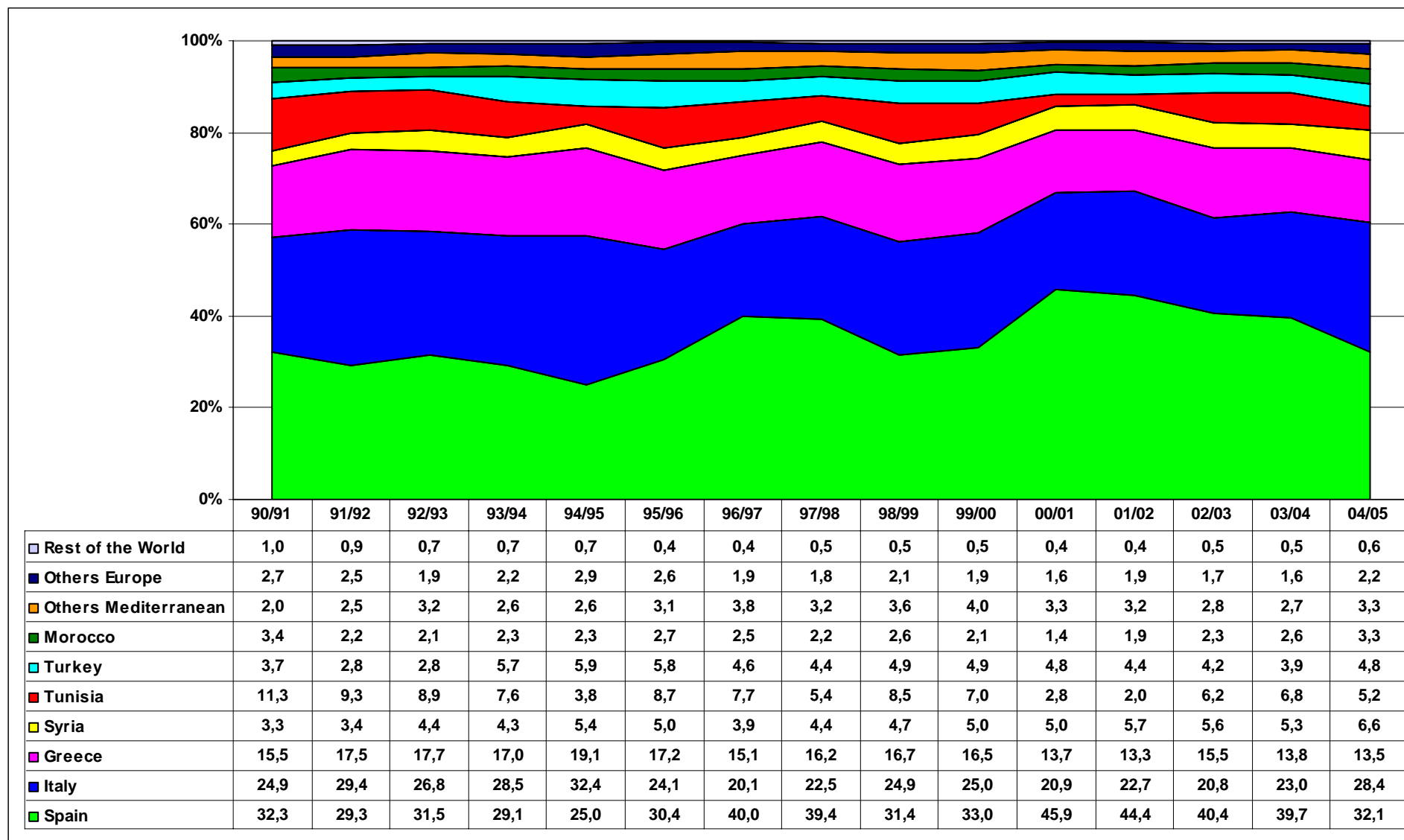
by the multinational firms controlling a large share of the bottling industry are likely to be a crucial factor in shaping the developments and trade positioning of the olive oil sector in non-EU Mediterranean countries. The natural solution to the existing conflicts would be effective horizontal and vertical coordination (extending across countries) along the “chain”; however, this is made difficult by the dispersion of production and olive crushing activities (mills) *vis a vis* the high level of concentration of the bottling industry, which allows the latter to exert market power. Strict and effectively implemented and promoted protection schemes for geographical indications are possibly the best way to make olive oil producers increase their market power within the “chain” and capture the value consumers attach to specific origins.

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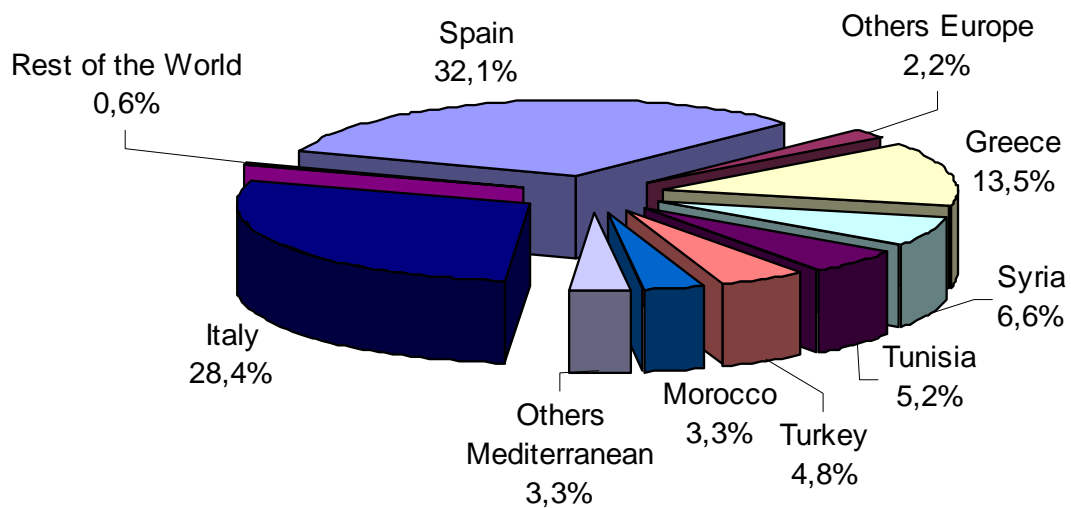
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Figure 1 - Olive oil. Production by country (percent composition; bi-yearly averages; 90/91 - 04/05).



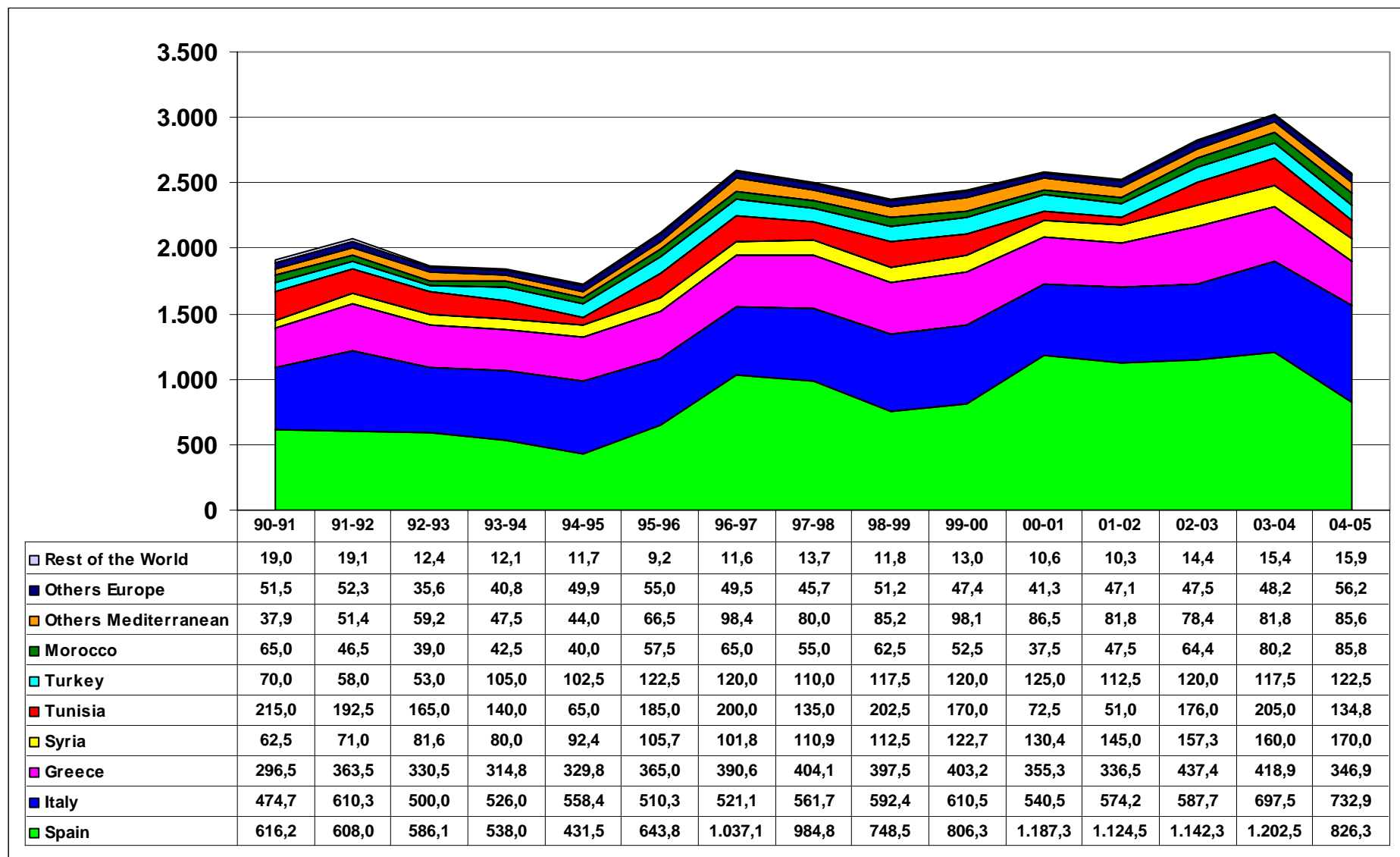
Source: Faostat.

Figure 2 - Olive oil. Production by country (percent composition; 2004/05 average).



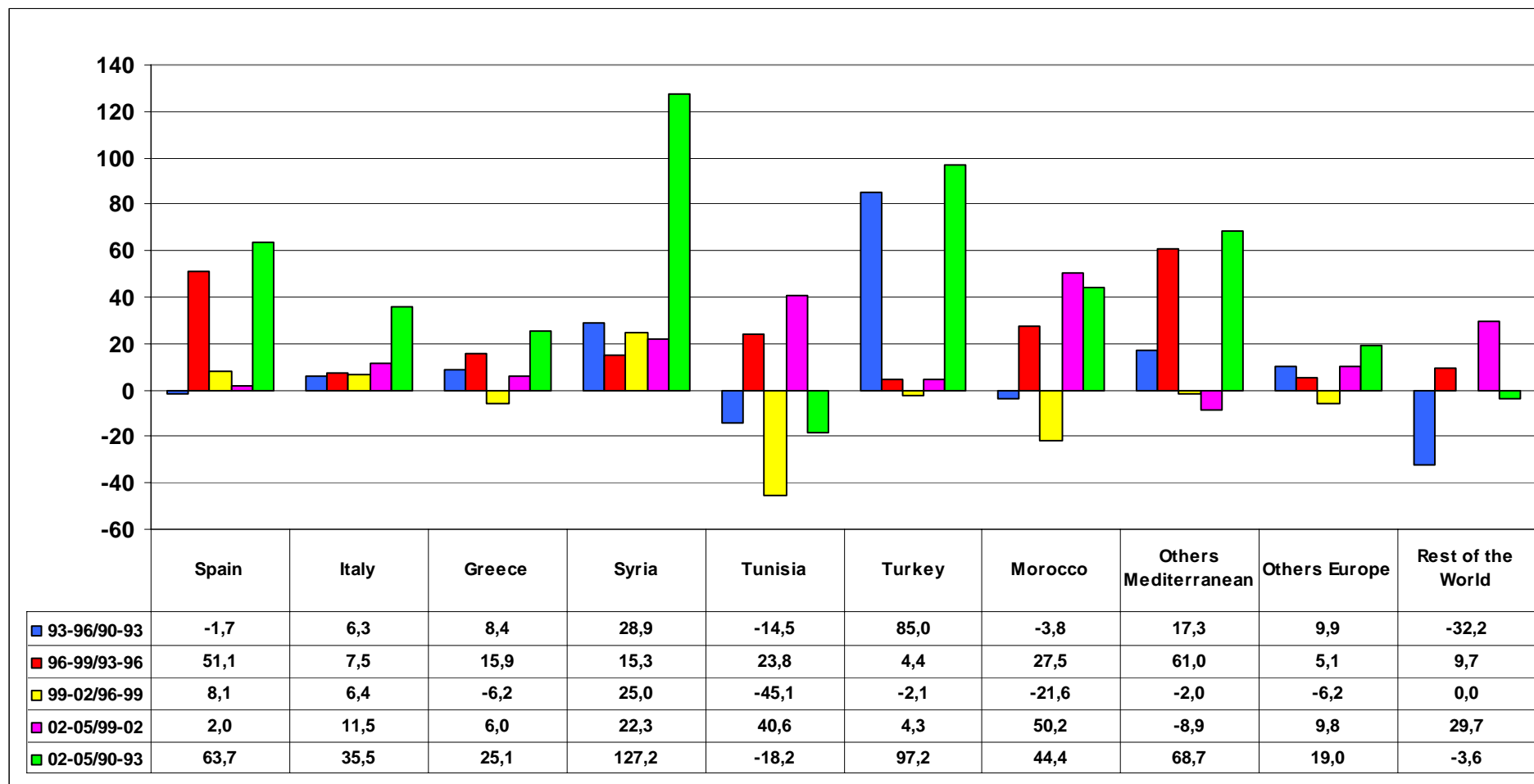
Source: Faostat

Figure 3 - Olive oil. Production by country (000 t; bi-yearly averages; 90/91 - 04/05).



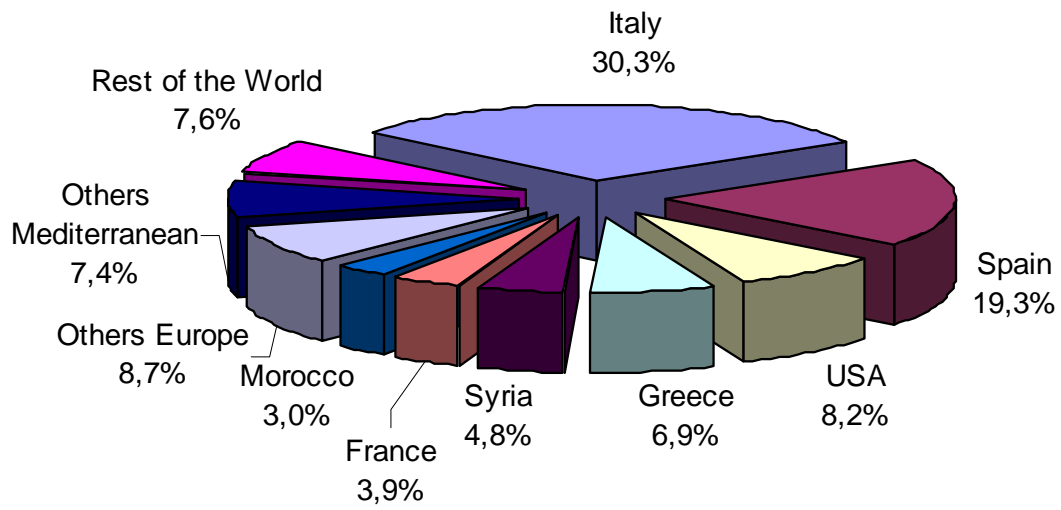
Source: Faostat

Figure 4 - Olive oil. Production by country computed on four year averages and percentage changes (90/93 - 02/05).



Source: Faostat.

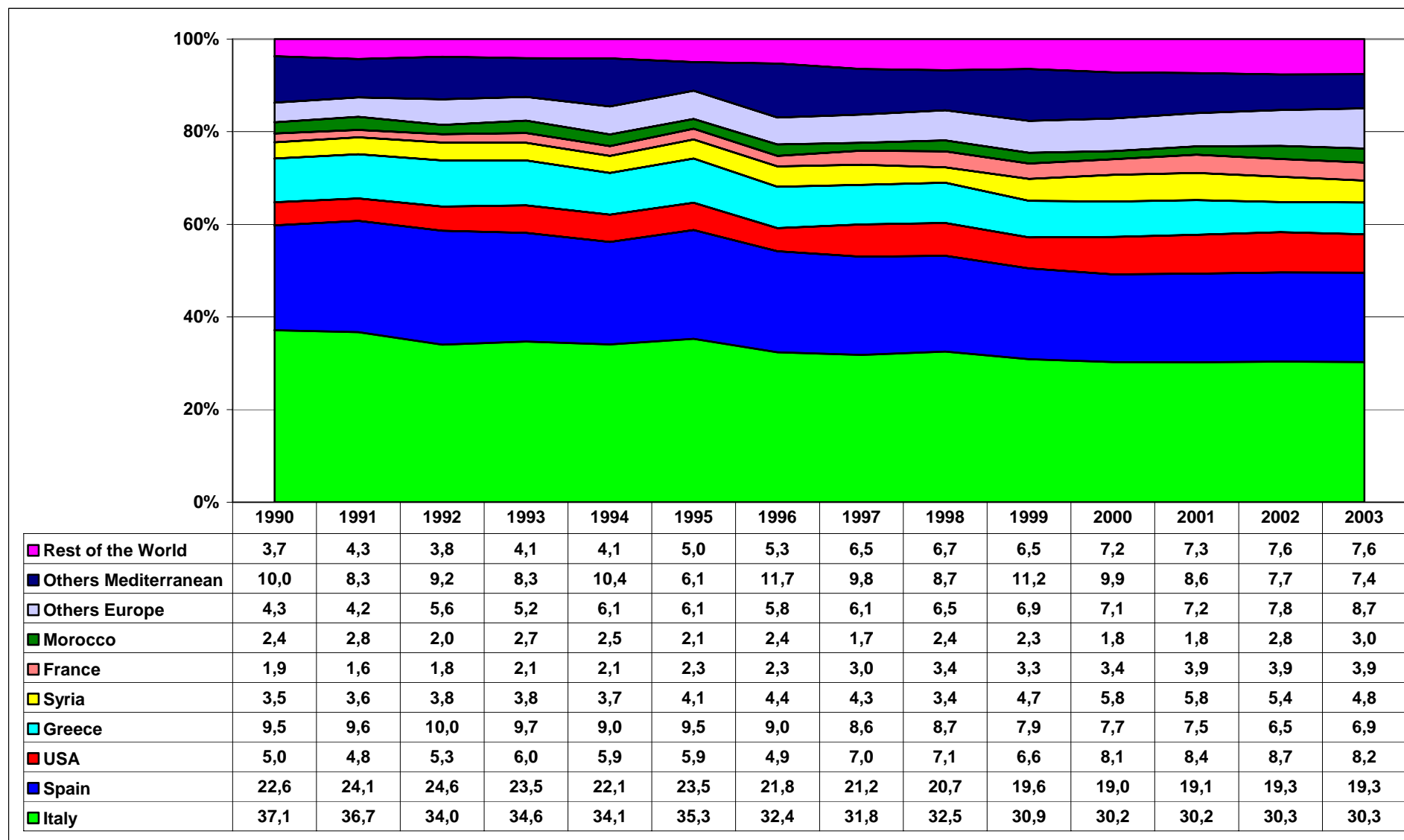
**Figure 5 - Olive oil. Consumption by country (percent composition; 2003).**



Source: Faostat.

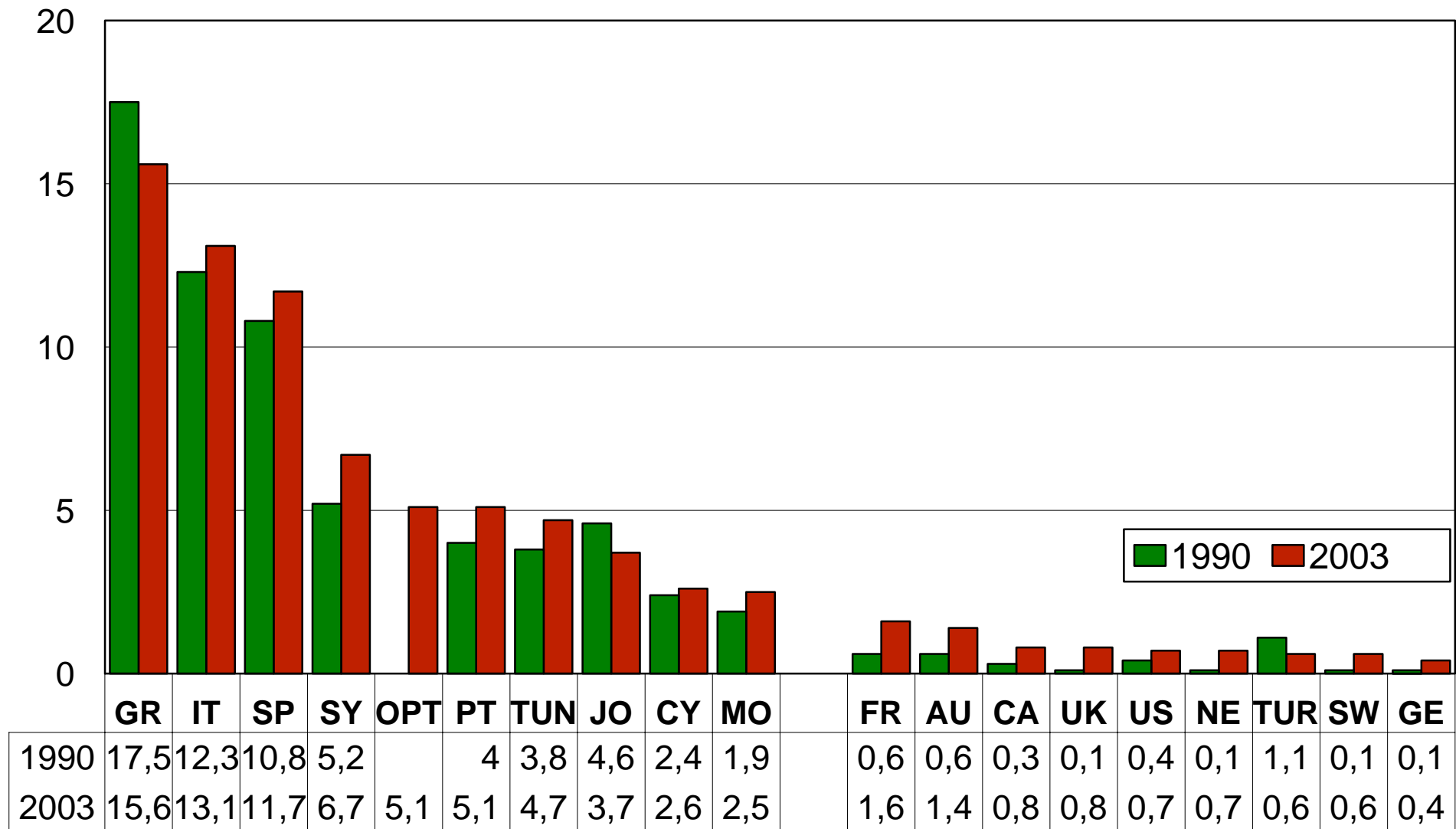


Figure 6 - Olive oil. Consumption by country (percent composition; 90-03).



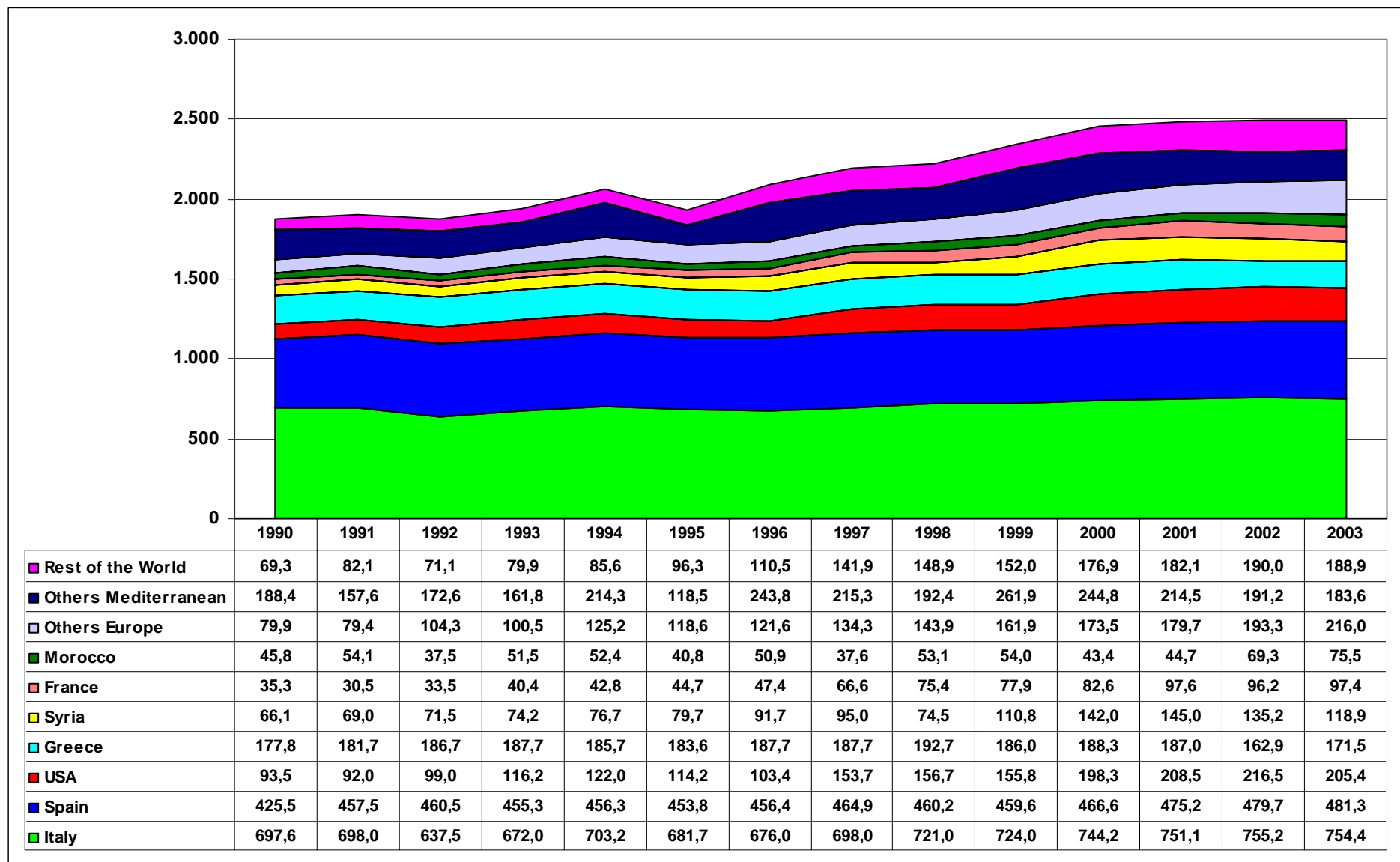
Source: Faostat

Figure 7 - Olive oil. Per capita annual consumption, top ten in 2003 plus selected countries (kg; 1990, 2003)



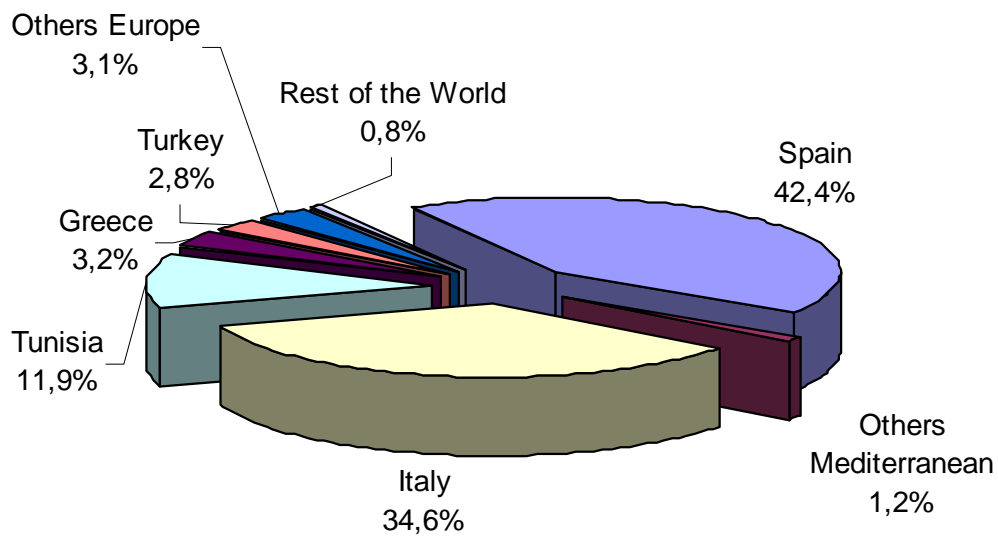
Source: Faostat.

Figure 8 - Olive oil. Consumption by country (000 t; 90-03).



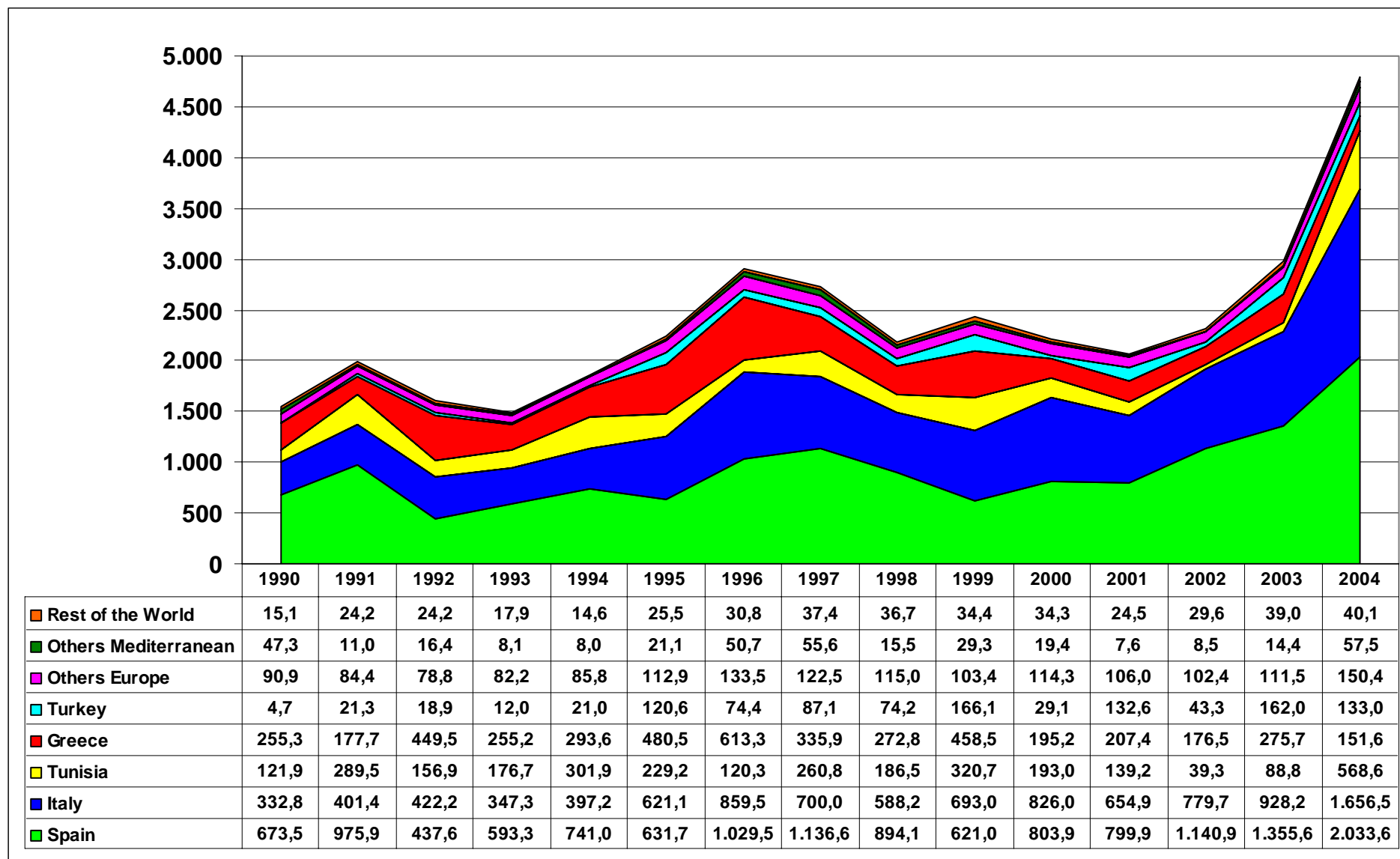
Source: Faostat.

**Figure 9 - Olive oil. Exports in value by country (percent composition; 2004).**



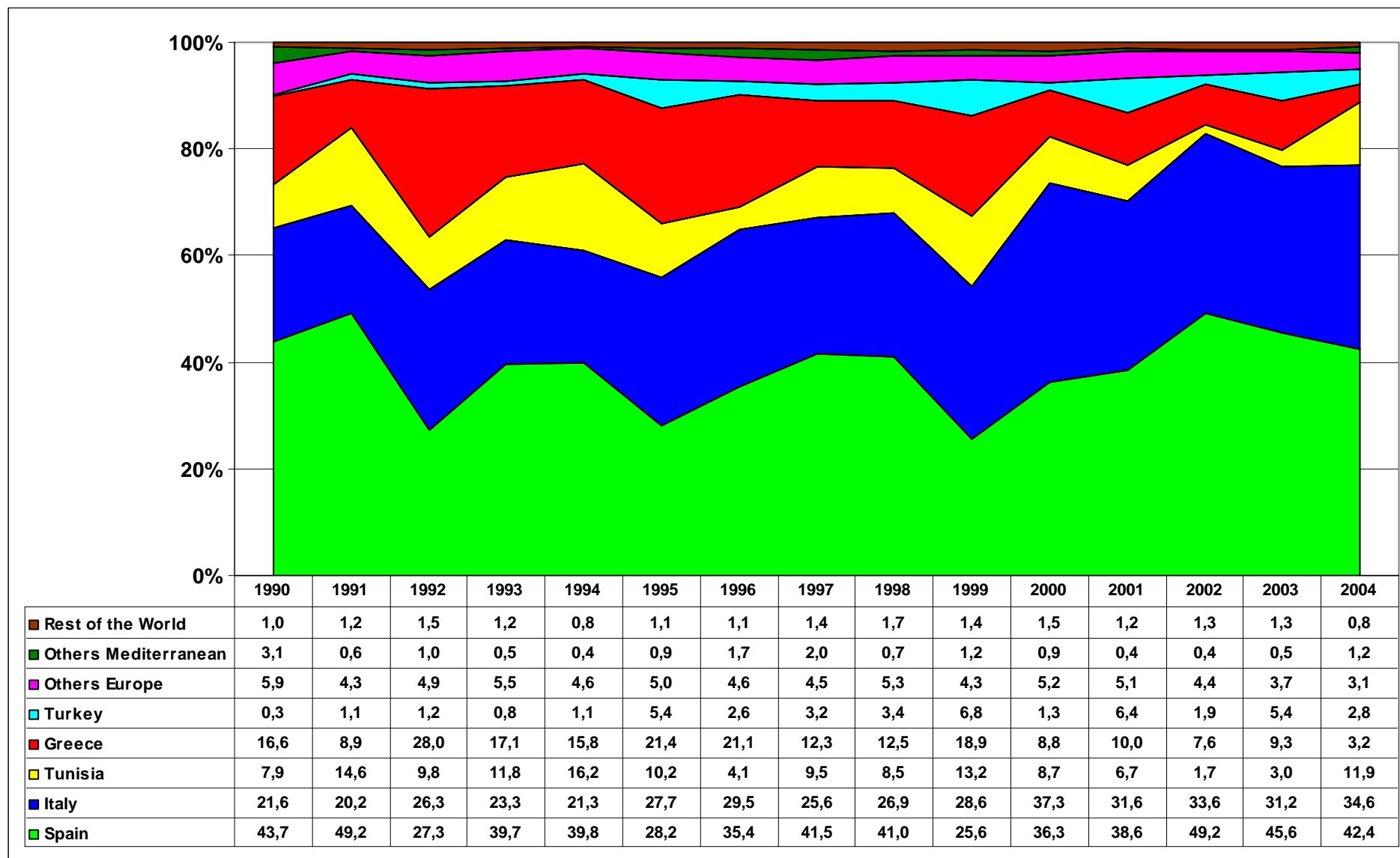
Source: Faostat

Figure 10 - Olive oil. Exports by country (million \$; 90-04).



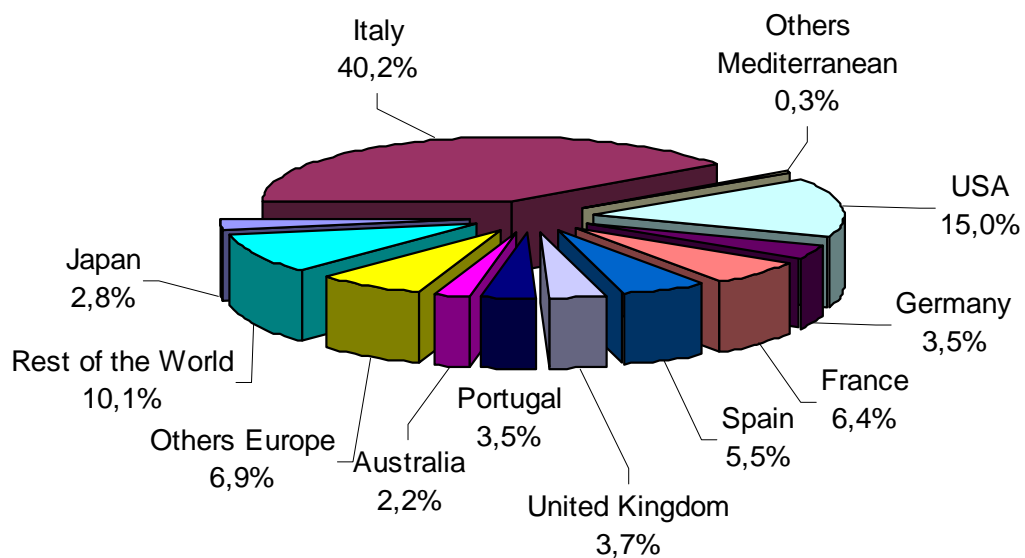
Source: Faostat.

Figure 11 - Olive oil. Exports by country (percent composition; 90-04).



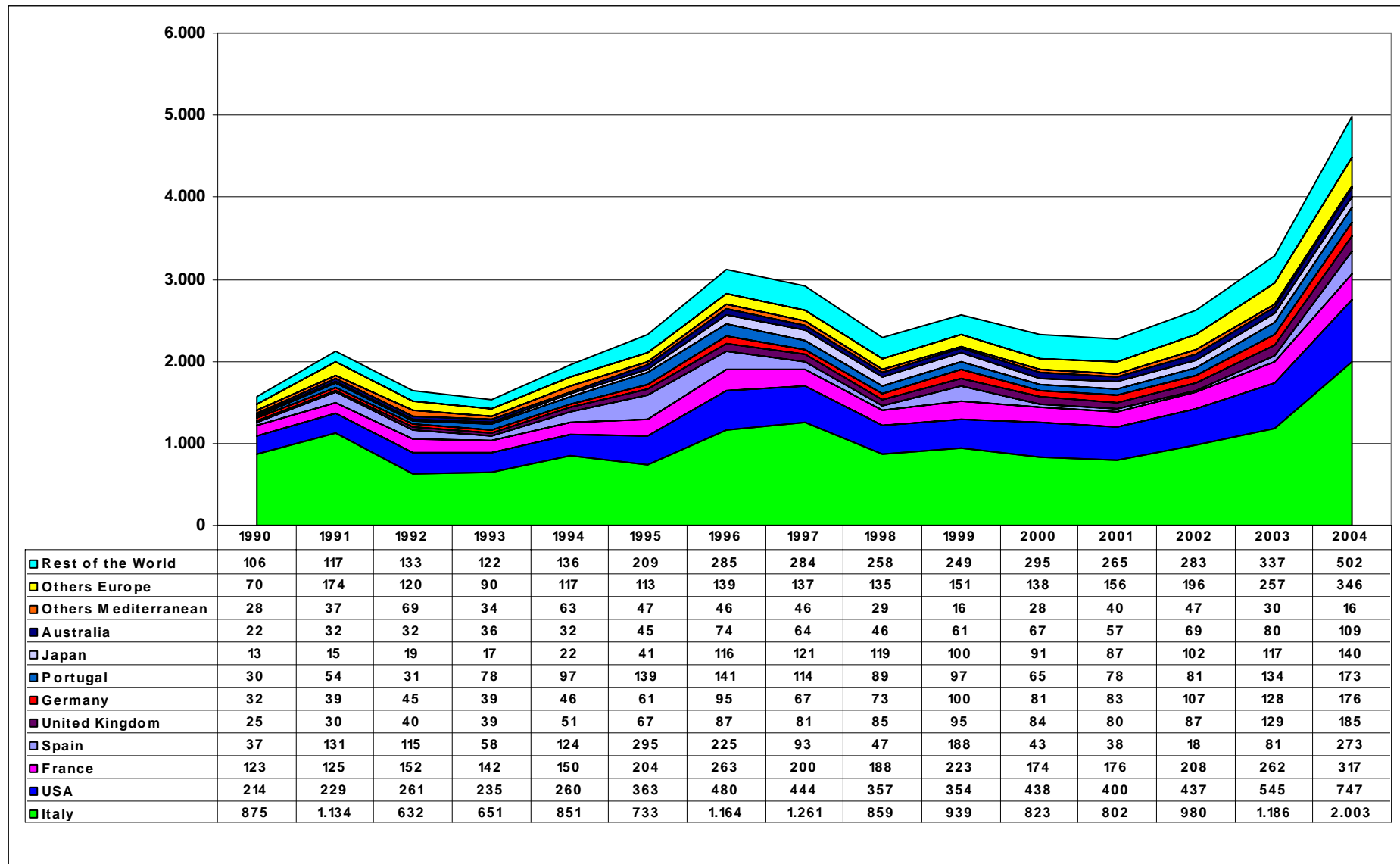
Source: Faostat.

Figure 12 - Olive oil. Imports by country in value (percent composition; 2004).



Source: Faostat

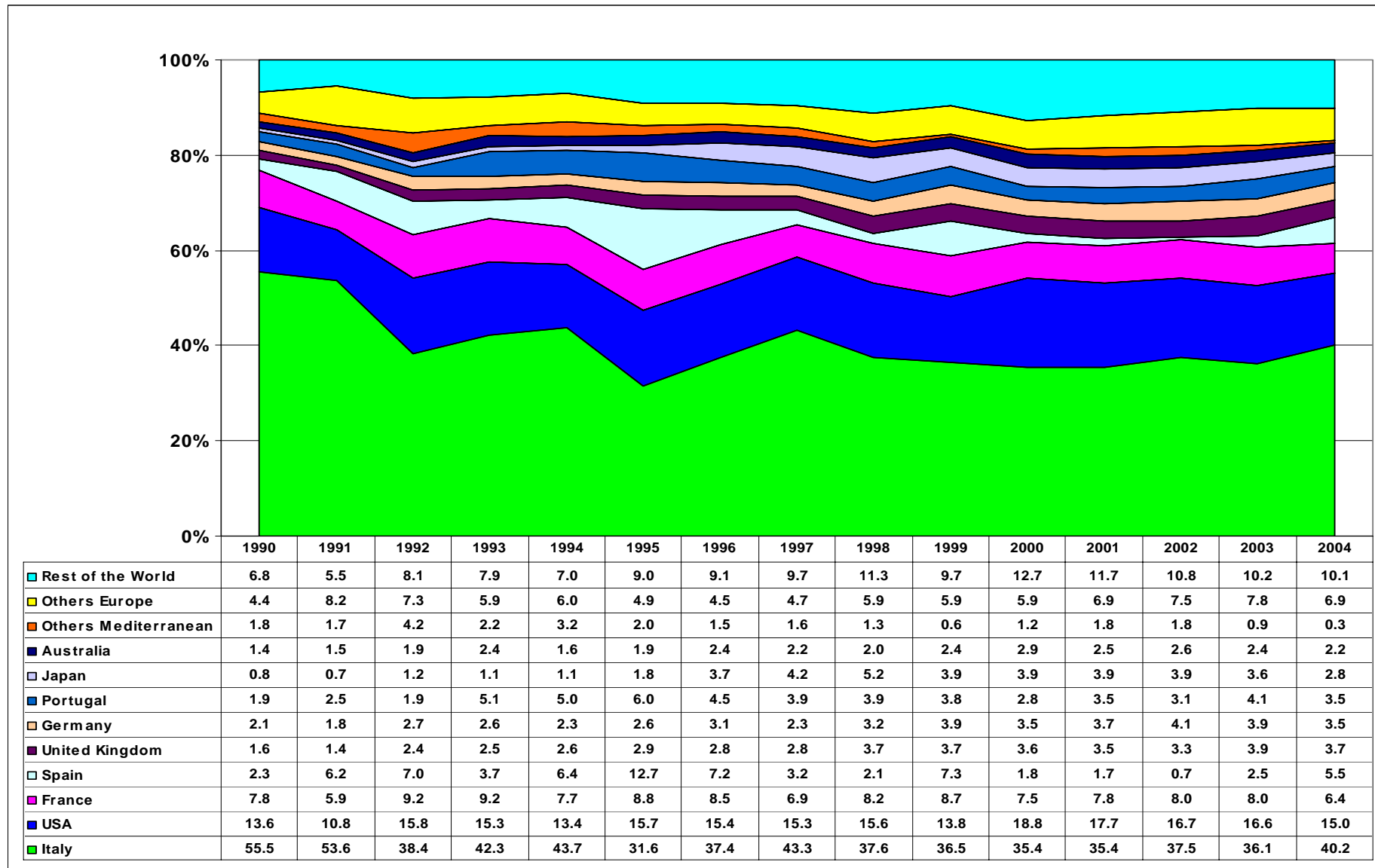
Figure 13 - Olive oil. Imports by country (million \$; 90-04).



Source: Faostat.

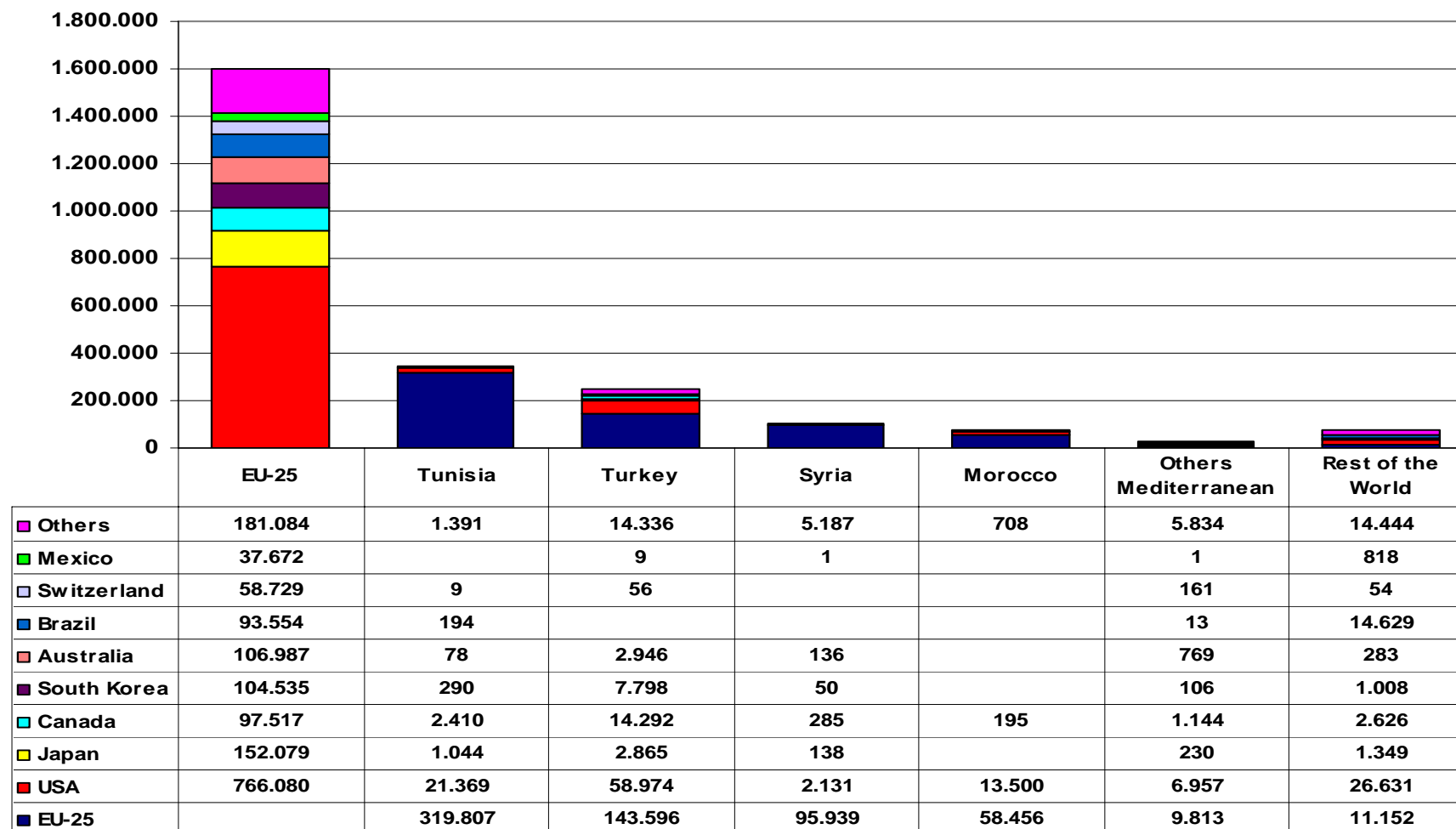


Figure 14 - Olive oil. Imports by country (percent composition; 90-04).



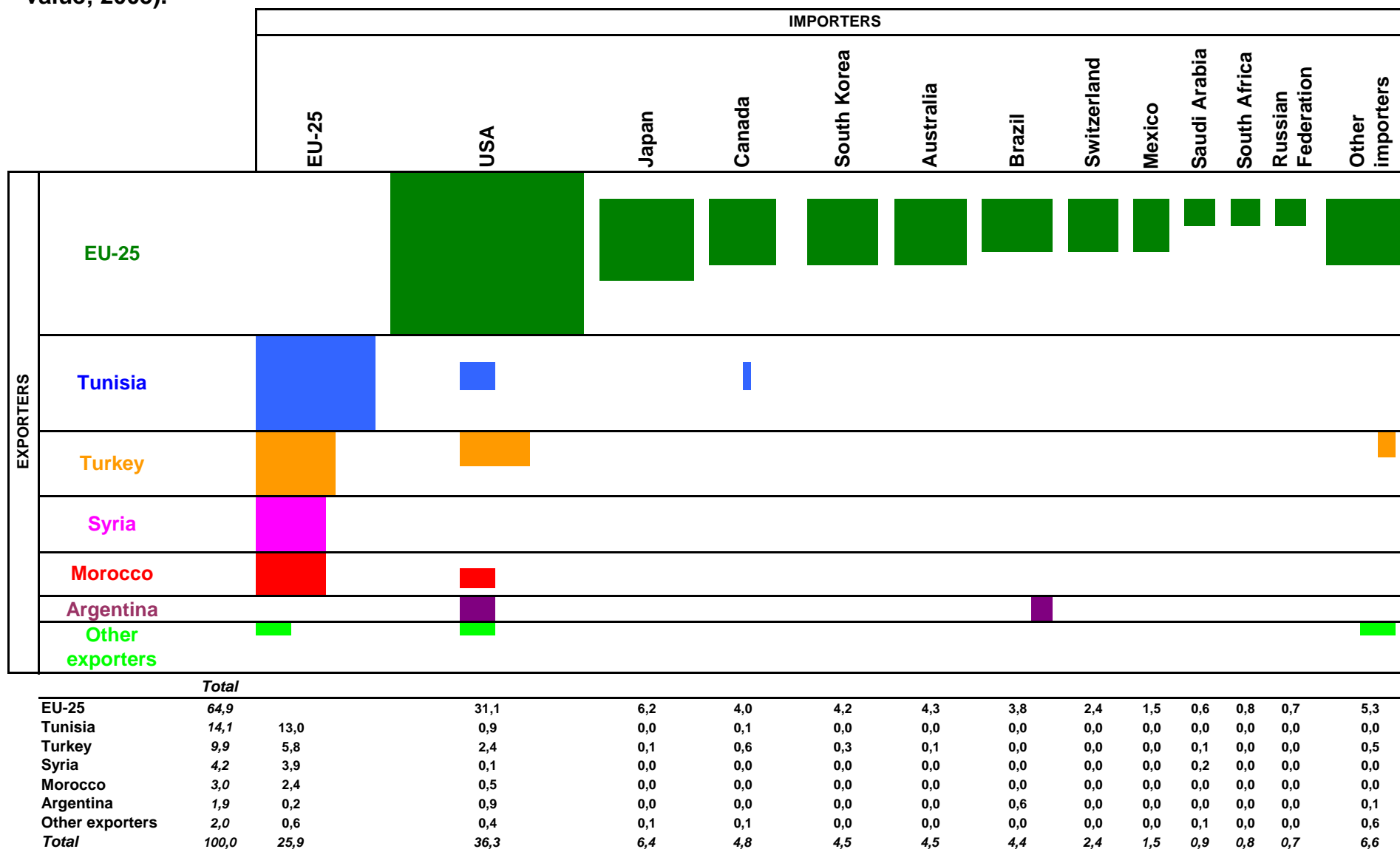
Source: Faostat

Figure 15 - Olive oil. Exports of the largest exporters by country of destination (000\$; 2005).



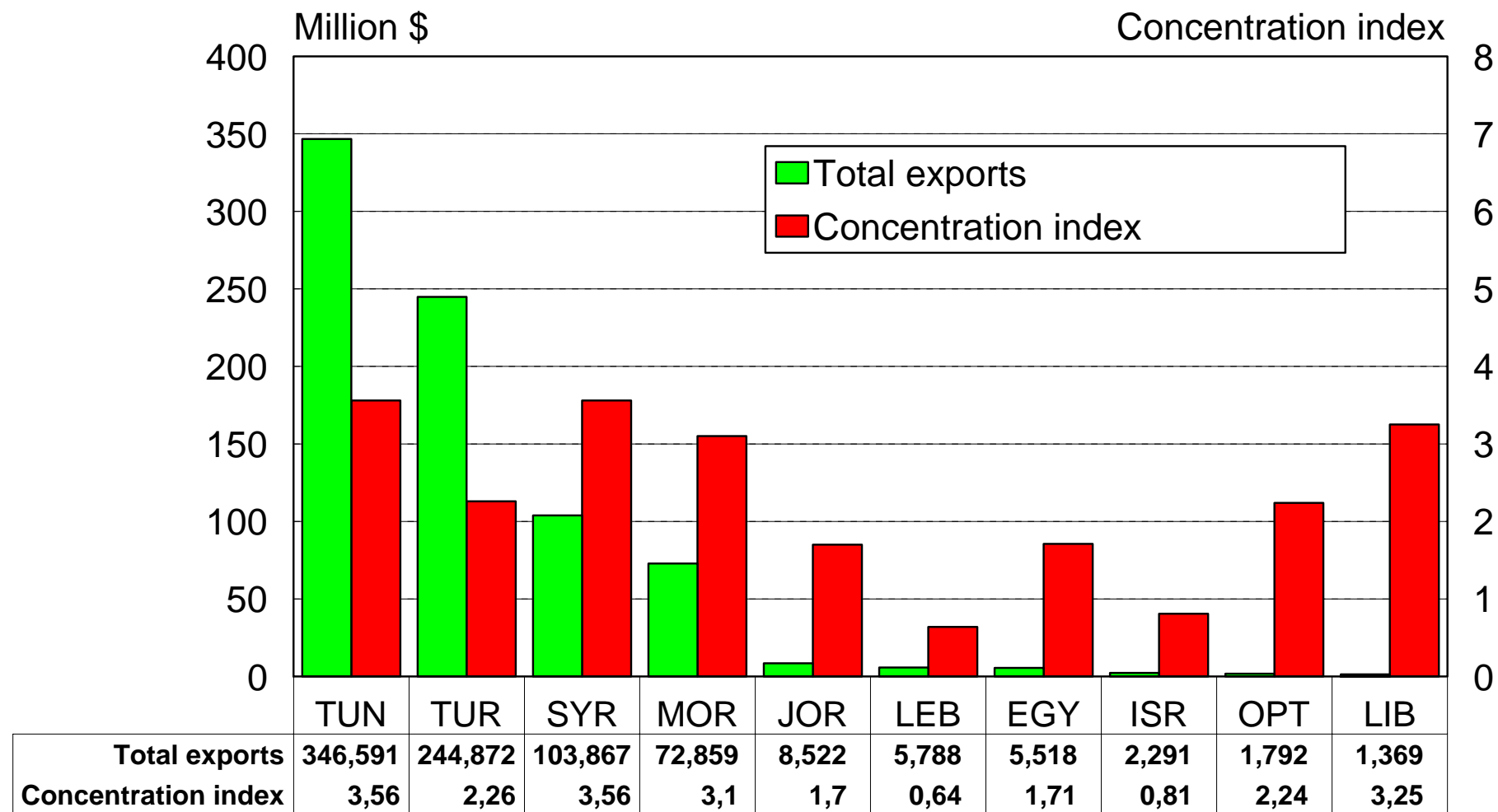
Source: UN COMTRADE.

Figure 16 - Olive oil. Trade flows between the main exporting and importing countries (percentages over total trade in value; 2005).



Source: UN COMTRADE.

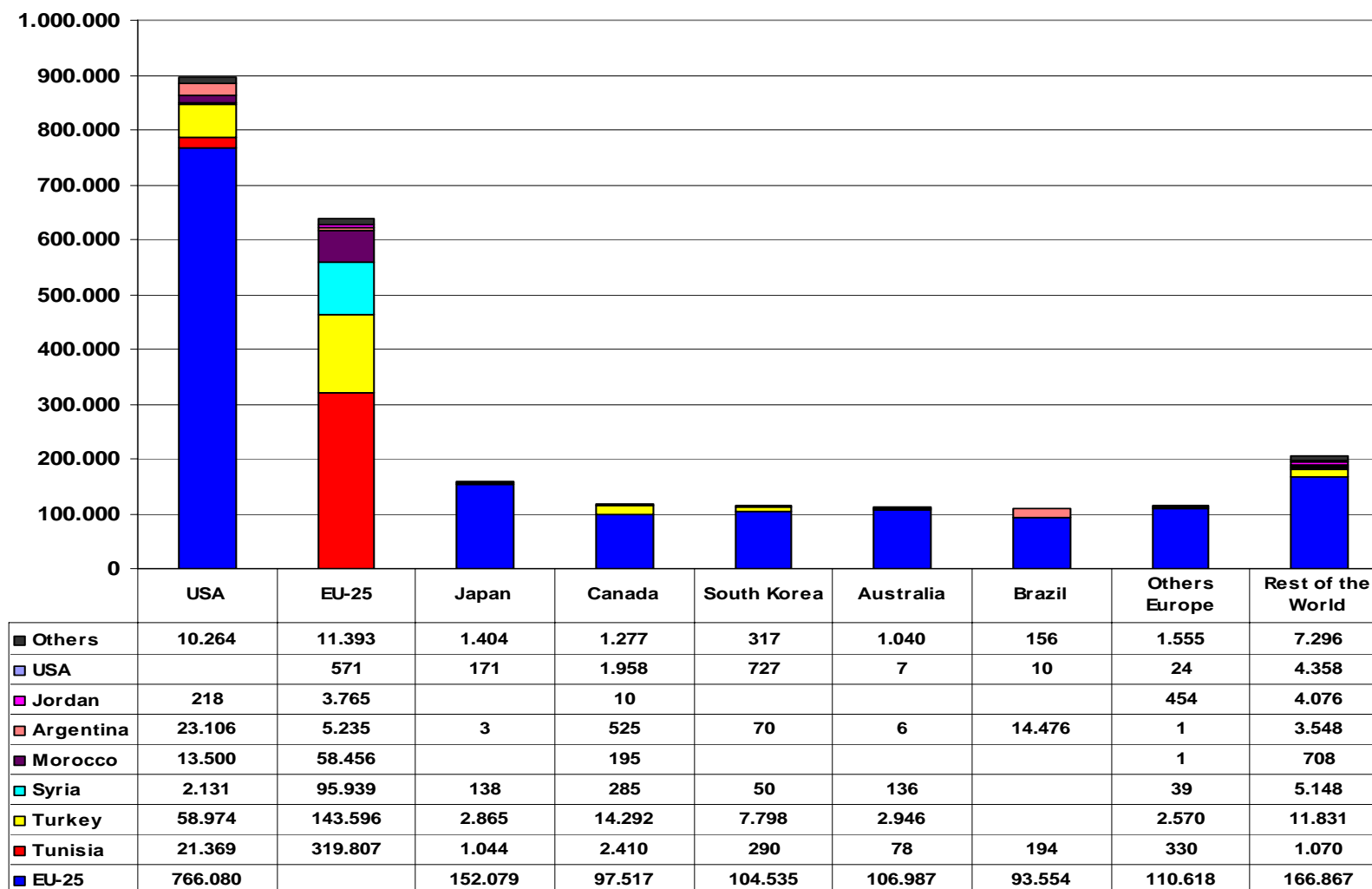
Figure 17 - Olive oil. Mediterranean countries, total exports (million \$) and exports concentration index on the EU-25 market (2005).



Concentration index: share of country exports to the EU-25 market / share of EU-25 imports over world imports.

Source: UN COMTRADE.

Figure 18 - Olive oil. Imports for the largest importers by country of origin (000\$; 2005).



Source: UN COMTRADE.

**Table 1 - Olive oil. Production (000 t) and percentage changes by country (four year averages; 90/93 - 02/05).**

	90/93	02/05	% change
Spain	601,14	984,28	63,7
Italy	487,35	660,33	35,5
Greece	313,50	392,15	25,1
Syria	72,03	163,65	127,2
Tunisia	190,00	155,38	-18,2
Turkey	61,50	121,25	97,2
Morocco	52,00	75,08	44,4
Other Mediterranean countries	48,59	81,98	68,7
<i>Algeria</i>	25,89	26,70	3,1
<i>Jordan</i>	9,58	20,29	111,7
<i>Palestine, Occupied Terr.</i>	19,86*	15,98	-19,6
<i>Libya</i>	7,78	8,46	8,8
<i>Lebanon</i>	5,12	6,03	17,7
<i>Israel</i>	0,23	4,53	1.900,0
Other European countries	43,57	51,87	19,0
<i>Portugal</i>	34,67	39,22	13,1
<i>France</i>	2,03	3,80	87,7
<i>Cyprus</i>	1,63	3,20	96,7
<i>Macedonia</i>	-	2,13	-
<i>Croatia</i>	1,00	2,06	105,7
<i>Albania</i>	2,56	1,10	-57,1
<i>Slovenia</i>	0,04	0,23	411,2
<i>Serbia and Montenegro</i>	0,11	0,13	22,4
<i>Malta</i>	0,00	0,00	-11,1
Rest of the World	15,71	15,15	-3,6
<i>Argentina</i>	11,70	11,00	-6,0
<i>Chile</i>	1,04	1,42	36,7
<i>United States of America</i>	0,61	0,88	44,0
<i>Iran</i>	1,30	0,79	-39,0
<i>El Salvador</i>	0,52	0,53	1,4
<i>Mexico</i>	0,40	0,20	-50,0
<i>Australia</i>	0,07	0,16	143,9
<i>Azerbaijan</i>	-	0,10	-
<i>Afghanistan</i>	0,08	0,08	-5,0
World	1.885,39	2.701,09	43,3

\* 1996-1999 average.

Source: Faostat.

**Table 2 - Olive oil. Exports (million \$) and percentage changes by country (four year averages; 90/93 - 01/04).**

	<b>90/93</b>	<b>01/04</b>	<b>% change</b>
Spain	670,1	1.332,5	98,9
Italy	375,9	1.004,8	167,3
Tunisia	186,2	209,0	12,2
Greece	284,4	202,8	-28,7
Turkey	14,2	117,7	728,6
Portugal	28,2	61,7	119,0
Morocco	13,3	14,6	9,7
Other Mediterranean countries	9,0	32,2	258,7
<i>Syria</i>	0,0	23,5	66.954,3
<i>Jordan</i>	1,0	3,1	204,2
<i>Lebanon</i>	1,4	2,8	98,3
<i>Palestine, Occupied Terr.</i>	5,6	1,2	-77,9
<i>Egypt</i>	0,1	1,2	1.528,1
<i>Israel</i>	0,0	0,4	690,7
<i>Algeria</i>	0,1	0,0	-62,3
<i>Libya</i>	0,7	0,0	-100,0
Other European countries	62,7	53,1	-15,2
<i>France</i>	54,0	16,2	-70,0
<i>United Kingdom</i>	1,8	16,0	805,8
<i>Belgium*</i>	2,9	7,2	148,1
<i>Germany</i>	1,5	5,2	248,2
Rest of the World	20,4	33,3	63,5
<i>Argentina</i>	13,3	17,0	28,2
<i>United States of America</i>	4,2	7,4	75,9
<i>Canada</i>	0,3	1,1	238,3
<i>Australia</i>	0,2	1,1	590,9
<i>Saudi Arabia</i>	0,1	1,0	569,0
World	1.664,3	3.061,7	84,0

\* Belgium-Luxemburg until 1999.

Source: Faostat.

**Table 3 - Olive oil. Imports (million \$) and percentage changes by country (four year averages; 90/93 - 01/04).**

	<b>90/93</b>	<b>01/04</b>	<b>% change</b>
Italy	823,1	1.242,8	51,0
United States of America	234,6	532,3	126,8
France	135,5	240,5	77,5
Germany	39,0	123,7	217,0
United Kingdom	33,7	120,2	256,9
Portugal	48,3	116,6	141,6
Japan	16,0	111,5	597,8
Spain	85,0	102,5	20,5
Australia	30,8	78,8	156,3
Other Mediterranean countries	41,7	33,3	-20,2
<i>Libya</i>	17,6	11,8	-33,0
<i>Morocco</i>	1,3	10,6	691,8
<i>Israel</i>	1,8	6,9	279,7
<i>Turkey</i>	0,8	1,4	78,9
<i>Tunisia</i>	0,0	0,9	13.984,6
<i>Algeria</i>	0,6	0,7	34,3
<i>Egypt</i>	2,0	0,7	-67,4
<i>Palestine, Occupied Terr.</i>	0,3*	0,2	-14,3
<i>Lebanon</i>	6,4	0,1	-99,2
<i>Jordan</i>	11,2	0,0	-100,0
<i>Syria</i>	0,0	0,0	-100,0
Other European countries	113,6	238,7	110,2
<i>Belgium**</i>	13,3	42,2	215,9
<i>Switzerland</i>	10,4	38,3	268,5
<i>Netherlands</i>	5,7	31,0	442,2
<i>Sweden</i>	3,3	18,1	456,2
<i>Austria</i>	3,5	16,0	356,7
<i>Greece</i>	39,3	12,7	-67,7
<i>Norway</i>	2,1	12,2	481,7
<i>Denmark</i>	3,2	10,2	217,5
Rest of the World	119,3	346,9	190,7
<i>Canada</i>	25,7	68,7	167,2
<i>Brazil</i>	36,7	65,4	78,3
<i>Mexico</i>	4,2	27,7	556,2
<i>China</i>	1,5	23,8	1.463,4
<i>South Korea</i>	0,3	21,6	6.531,7
<i>Saudi Arabia</i>	9,2	19,7	114,3
<i>New Zealand</i>	1,3	11,4	802,8
World	1.720,5	3.287,8	91,1

\* 1996-1999 average.

\*\* Belgium-Luxemburg until 1999.

Source: Faostat.



Table 4 - Olive oil. Trade flows between selected exporting and importing countries, quantities (t), values (000 \$) and average per unit import values (\$/kg) (2005)

		IMPORTERS								
		USA	EU-25	Japan	Canada	South Korea	Australia	Other importers	Total	
EXPORTERS	<b>Total</b>	Quantity (a)	248.068	193.208	32.651	29.583	29.096	28.931	124.224	685.761
		Value (b)	895.643	638.762	157.704	118.469	113.786	111.198	428.884	2.464.447
		<i>b/a</i>	3,6	3,3	4,8	4,0	3,9	3,8		
	<b>EU-25</b>	Quantity (a)	210.620		31.309	24.003	26.625	27.601	101.176	421.334
		Value (b)	766.080		152.079	97.517	104.535	106.987	371.039	1.598.237
		<i>b/a</i>	3,6		4,9	4,1	3,9	3,9		
	<b>Tunisia</b>	Quantity (a)	6.682	96.236	369	693	84	23	682	104.769
		Value (b)	21.369	319.807	1.044	2.410	290	78	1.592	346.590
		<i>b/a</i>	3,2	3,3	2,8	3,5	3,5	3,4		
	<b>Turkey</b>	Quantity (a)	17.714	43.331	797	3.858	2.124	938	5.672	74.434
		Value (b)	58.974	143.596	2.865	14.292	7.798	2.946	14.400	244.871
		<i>b/a</i>	3,3	3,3	3,6	3,7	3,7	3,1		
	<b>Syria</b>	Quantity (a)	665	30.982	27	79	16	44	2.662	34.475
		Value (b)	2.131	95.939	138	285	50	136	5.189	103.868
		<i>b/a</i>	3,2	3,1	5,1	3,6	3,1	3,1		
	<b>Morocco</b>	Quantity (a)	3.361	16.904		47			196	20.509
		Value (b)	13.500	58.456		195			708	72.859
		<i>b/a</i>	4,0	3,5		4,1				
	<b>Other exporters</b>	Quantity (a)	9.026	5.755	149	903	247	325	13.835	30.240
		Value (b)	33.589	20.964	1.578	3.770	1.113	1.051	35.956	98.021
		<i>b/a</i>	3,7	3,6	10,6	4,2	4,5	3,2		

Source: UN COMTRADE.

Table 5 - Virgin olive oil. Trade flows between selected exporting and importing countries, quantities (t), values (000 \$) and average per unit import values (\$/kg) (2005).

		IMPORTERS								
		USA	EU-25	Japan	Canada	South Korea	Australia	Other importers	Total	
EXPORTERS	<b>Total</b>	Quantity (a)	155.691	152.988	17.926	18.630	24.573	10.139	65.780	445.727
		Value (b)	594.647	507.637	94.998	77.717	96.519	41.497	242.205	1.655.220
		<i>b/a</i>	3,8	3,3	5,3	4,2	3,9	4,1		
	<b>EU-25</b>	Quantity (a)	127.094		17.322	15.221	23.485	9.422	52.270	244.814
		Value (b)	494.151		91.648	64.068	92.155	39.182	208.282	989.486
		<i>b/a</i>	3,9		5,3	4,2	3,9	4,2		
	<b>Tunisia</b>	Quantity (a)	5.843	94.909	190	567	77	23	605	102.214
		Value (b)	18.718	315.647	647	1.987	267	78	1.402	338.747
		<i>b/a</i>	3,2	3,3	3,4	3,5	3,5	3,4		
	<b>Turkey</b>	Quantity (a)	11.522	20.416	241	2.188	808	425	2.724	38.323
		Value (b)	39.012	69.971	1.023	8.908	3.223	1.452	4.844	128.433
		<i>b/a</i>	3,4	3,4	4,2	4,1	4,0	3,4		
	<b>Syria</b>	Quantity (a)	637	29.553	27	74	16	41	2.509	32.857
		Value (b)	2.033	91.103	138	267	50	92	4.995	98.678
		<i>b/a</i>	3,2	3,1	5,1	3,6	3,1	2,2		
	<b>Morocco</b>	Quantity (a)	2.264	7.900		45				10.209
		Value (b)	9.556	28.352		187				38.095
		<i>b/a</i>	4,2	3,6		4,2				
	<b>Other exporters</b>	Quantity (a)	8.331	211	146	535	187	228	7.673	17.311
		Value (b)	31.177	2.564	1.542	2.300	824	693	22.682	61.782
		<i>b/a</i>	3,7	12,2	10,6	4,3	4,4	3,0		

Source: UN COMTRADE.

Table 6 - Refined olive oil. Trade flows between selected exporting and importing countries, quantities (t), values (000 \$) and average per unit import values (\$/kg) (2005)

		IMPORTERS								
		USA	EU-25	Japan	Canada	South Korea	Australia	Other importers	Total	
EXPORTERS	<b>Total</b>	Quantity (a)	92.377	40.221	14.725	10.953	4.523	18.792	58.443	240.034
		Value (b)	300.996	131.125	62.706	40.752	17.267	69.701	186.679	809.227
		<i>b/a</i>	3,3	3,3	4,3	3,7	3,8	3,7		
	<b>EU-25</b>	Quantity (a)	83.526		13.987	8.782	3.140	18.179	48.906	176.520
		Value (b)	271.929		60.431	33.449	12.380	67.805	162.757	608.751
		<i>b/a</i>	3,3		4,3	3,8	3,9	3,7		
	<b>Tunisia</b>	Quantity (a)	839	1.328	179	126	7		77	2.556
		Value (b)	2.651	4.160	397	423	23		190	7.843
		<i>b/a</i>	3,2	3,1	2,2	3,4	3,3			
	<b>Turkey</b>	Quantity (a)	6.192	22.916	556	1.670	1.316	513	2.948	36.111
		Value (b)	19.962	73.625	1.842	5.384	4.575	1.494	9.556	116.438
		<i>b/a</i>	3,2	3,2	3,3	3,2	3,5	2,9		
	<b>Syria</b>	Quantity (a)	28	1.429		5		3	153	1.618
		Value (b)	98	4.836		18		44	194	5.190
		<i>b/a</i>	3,5	3,4		3,6		14,7		
	<b>Morocco</b>	Quantity (a)	1.097	9.004		2			196	10.299
		Value (b)	3.944	30.104		8			708	34.764
		<i>b/a</i>	3,5	3,3		4,0				
	<b>Other exporters</b>	Quantity (a)	695	5.544	3	368	60	97	6.163	12.930
		Value (b)	2.412	18.400	36	1.470	289	358	13.274	36.239
		<i>b/a</i>	3,5	3,3	12,0	4,0	4,8	3,7		

Source: UN COMTRADE.

**Table 7 - Olive oil. European Union: imports from Mediterranean countries, preferential duty-free quotas, imports under "Inward processing relief traffic" (IPRT) provisions and imports which apparently occurred at MFN conditions (t; 2005).**

	Total imports	Imports virgin olive oil (150910)	Imports refined olive oil (150990)	Imports other olive oils (1510)	Duty free import quota refined olive oil (150990)	Duty free import quota virgin olive oil (150910)	Duty free import quota other olive oils (1510)	Total imports under IPRT	Imports under IPRT virgin olive oil (150910)	Imports under IPRT refined olive oil (150990)	Imports under IPRT other olive oils (1510)	Imports which apparently occurred under MFN conditions
Algeria	13	13			333							
Egypt	836	776	60				781	721	60			55
Israel	120	119	1									120
Jordan	1.249	1.248	1				523	523				726
Lebanon*	272	69	202	1		1.000						
Libya	359	359					359	359				
Morocco	16.904	8.454	8.449	1	3.710			12.970	5.700	7.270		224
Occ. Palest. T.	160	160	0			2.000						
Syria	30.983	29.557	1.426	1			29.862	28.437	1.425			1.121
Tunisia	98.567	94.990	1.246	2.331		57.167		51.096	47.519	1.246	2.331	
Turkey	43.329	20.341	22.987	0			41.317	18.356	22.961			2.012

\* EU imports of refined olive oil from Lebanon are granted quota- and duty-free access.

Source: European Commission (COMEXT).