

## 1. GENERAL DESCRIPTION OF OLIVE GROWING IN ITALY

### 1.1. Introduction



**Figure 1.** Location of Italy (Source: UN)

The 2009/10 crop year was a complex period for the olive sector in Italy, primarily due to the persistence of the crisis in producer prices which had been going on for more than three years.

In addition, problems continued further along the supply chain and demand was not particularly dynamic either.

This situation can chiefly be attributed to bad weather, which affected the harvest and led to pest attacks and low oil yields. However, another factor of an economic nature has been at play. Many growers chose not to harvest in view of the low prices paid for their olives, which often did not even cover harvesting and crushing costs.

Although there are regional variations in the sector in Italy, generally speaking production was low everywhere.

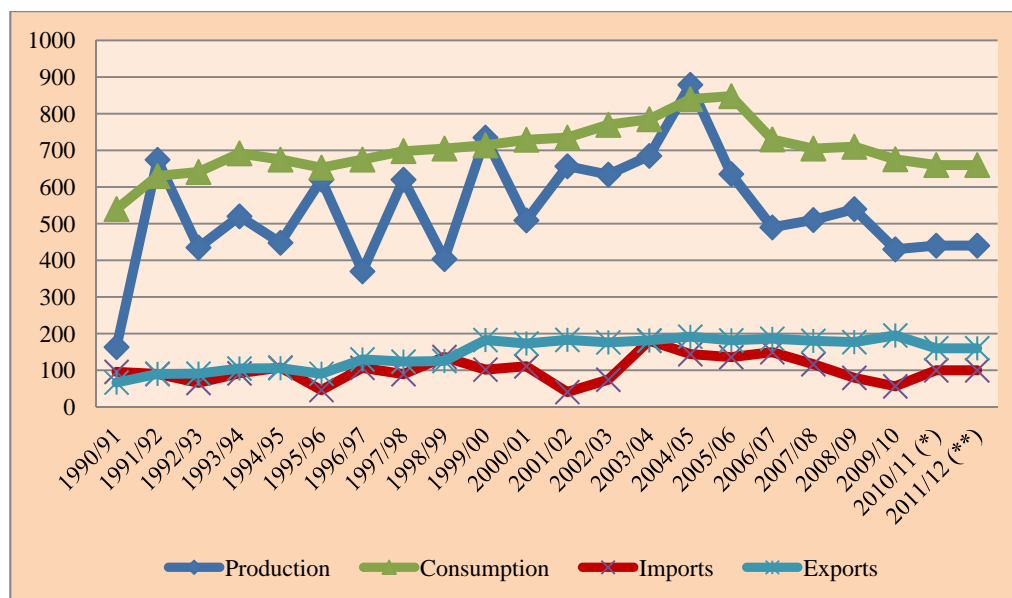
(Source: UNAPROL, 2010)

### 1.2. Socio-economic indicators

- **Area:** 301 336 sq km (UN, 2008)
- **Capital city:** Rome (UN)
- **Currency:** Euro (EUR) (UN, 2009)
- **Population:** 60 221 211 (World Bank, 2009)
- **Urban population:** 68.4% (UN, 2010)
- **Rural population:** 31.6% (UN, 2010)
- **Population growth rate:** 0.2% (UN, 2010/15)
- **Life expectancy:** 78.6 years (men), 84.6 years (women) (UN, 2010/15)
- **Main exports by quantity:** wine and macaroni (FAOSTAT, 2009)
- **Main imports by quantity:** wheat, soybean cake and maize (FAOSTAT, 2009)
- **GNI: Gross national income per capita (current US\$):** 34 679.3 (UN, 2009)
- **GDP per capita (current US\$):** 35 289.4 (UN, 2009)
- **Employment in agricultural sector:** 3.8% (UN, 2009)

## 2. BACKGROUND DATA

### 2.1. Olive oils



**Figure 2.** Olive oil production, consumption, imports and exports 1990–2012 (1 000 tonnes)

\* Estimates

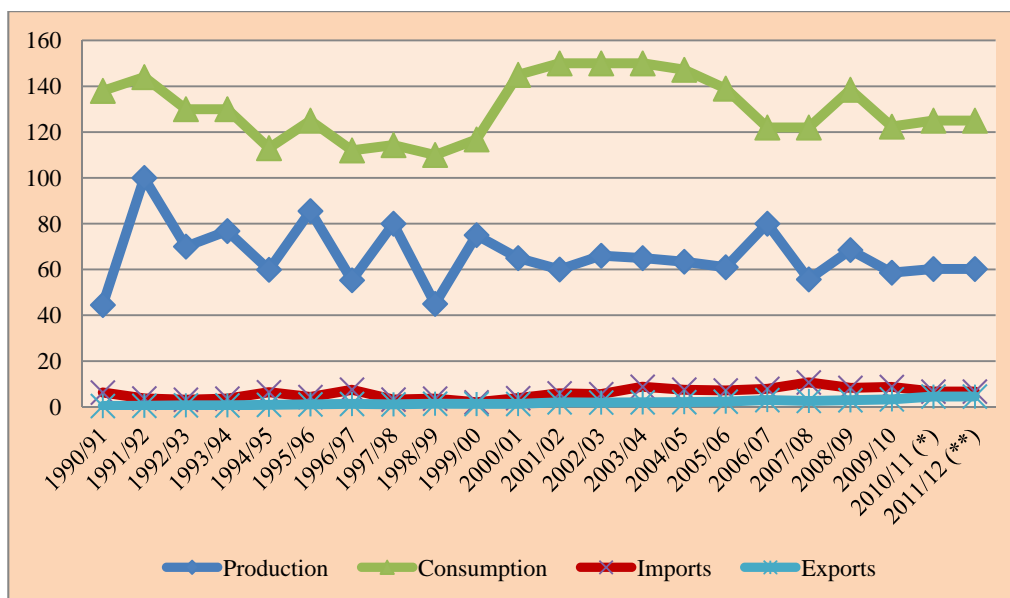
\*\* Forecasts (Source: IOC)

**Table 1.** Olive oils (1 000 tonnes) (Source: <http://www.internationaloliveoil.org/estaticos/view/131-world-olive-oil-figures>)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<b>Production</b>	509	656	634	685	879	635	490	510	540	430
<b>Consumption</b>	729	735	770	785	840	848	730	705	710	675
<b>Imports*</b>	110	40	74	180	144	135	149	116	79	56
<b>Exports*</b>	173	182	176	171	191	181	185	180	176	195

\* without intra-Community trade.

## 2.2. Table olives



**Figure 3.** Table olive production, consumption, imports and exports 1990–2012 (1 000 tonnes)

\* Estimates

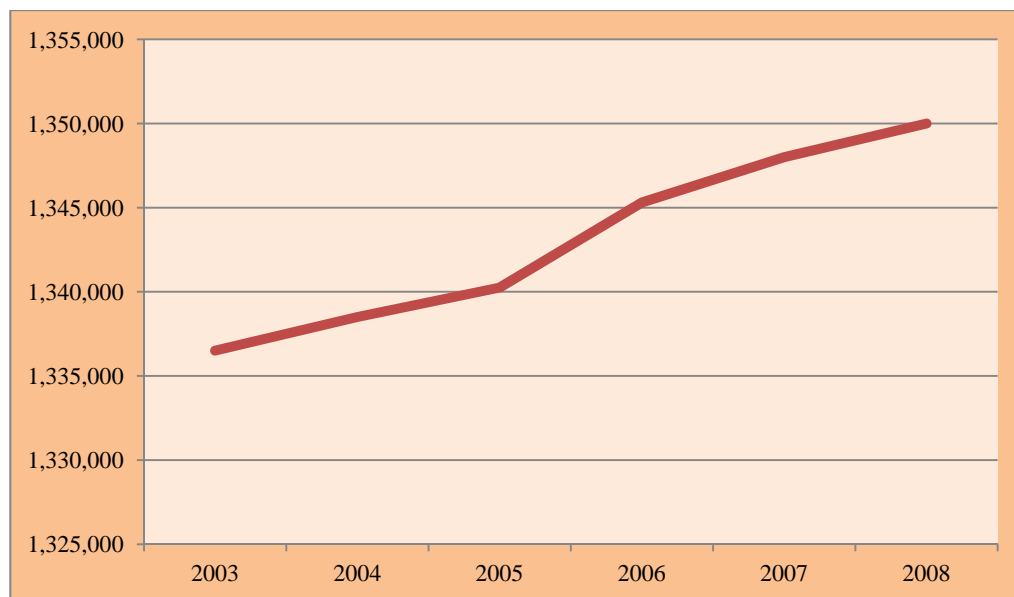
\*\* Forecasts (Source: IOC)

**Table 2.** Table olives (1 000 tonnes) (Source: <http://www.internationaloliveoil.org/estaticos/view/132-world-table-olive-figures>)

	2000/01	2001/02	2002/03	2003/04	2004/05	2005/06	2006/07	2007/08	2008/09	2009/10
<b>Production</b>	65.0	60.0	66.0	65.0	63.0	61.0	80.0	55.0	68.0	58.0
<b>Consumption</b>	145.0	150.0	150.0	150.0	147.0	139.0	122.0	122.0	138.0	122.0
<b>Imports*</b>	3.8	5.9	5.6	8.8	7.5	7.2	7.9	10.7	8.3	8.7
<b>Exports*</b>	1.3	2.0	1.9	2.0	2.1	2.3	3.0	2.6	2.9	3.3

\* without intra-Community trade.

### 2.3. Total area planted



**Figure 4.** Changes in area planted with olive trees (ha) (Source: IOC)

### 3. OLIVE INDUSTRY IN ITALY

#### 3.1. *Historical background*

In Italy, olive oil usage is believed to have spread from Magna Graecia in the South to the rest of the peninsula.

Little information is available on the importance of olive cultivation during the Middle Ages, although three growing areas can be distinguished: the North, where there were small olive groves; the Centre, where the great families of Florence and Lucca grew olives for their own consumption; and the South, with the important olive oil trading port of Gaeta, and Sicily where there were large extensions of olive groves. Olive cultivation remained marginal until the fourteenth and fifteenth centuries, when it started to expand and shape the landscape until it acquired its present-day form. However, it is not altogether clear what techniques were used and researchers differ in opinion as regards crop production.

In the Early Modern era, olive growing expanded significantly throughout the Mediterranean region, driven by the commercial development of the coastal States and increased domestic and foreign demand (from the American colonies).

In the seventeenth century, olive cultivation in Southern Italy entered a period of decline whereas other areas in the Centre and North started to grow olives and sell olive oil. Some authors believe the early eighteenth century marked the transition from old-fashioned to modern olive growing and traced what was to become the current agricultural map of the northern Mediterranean.

#### 3.2. *Orchard resources and location*

According to data released by the Italian Ministry of Agriculture (MIPAAF, 2010), 179 334 841 olive trees are grown in Italy on 1 350 000 ha of land, which gives a mean orchard density of 165 trees/ha.

Olive holdings are generally very small, averaging less than one hectare at national level. Approximately 70% of all the olive farms in the country have less than 2 ha of land.

Crop production averages around 3 000 kg /ha and 16 kg/ tree.

Olive trees have grown for thousands of years across virtually the whole of Italy and are found in 18 of the country's 20 regions. However, according to the mean data for 2009/10, crop production is concentrated in the southern regions, led by Apulia (32.25%), followed by Calabria (30.31%) and Sicily (9.42%).

(Source: AGEA)

#### 3.3. *Varieties*

Cultivated on 90 000 ha in Apulia, equivalent to 8% of total olive crop area, 'Coratina' is the most widespread variety in Italy. Next are two very popular varieties, also from Apulia – 'Ogliarola Salentina' and 'Cellina di Nardò' – , which are grown on 220 000 ha accounting for 19.5% of total crop area, and three other very common varieties, namely 'Carolea', 'Frantoio' and 'Leccino', which are found on 370 000 ha representing 32.7% of the total olive growing area.

The ten most widespread varieties (the ones named above plus 'Ogliarola Barese', 'Moraiolo', 'Bosana' and 'Cima di Mola') account for 475 000 ha or 42% of total olive growing area.

Lastly, the top 24 varieties (all those named previously plus 'Dolce di Rossano', 'Ogliarola Messina', 'Ottobratica', 'Sinopolese', 'Nocellara Belice', 'Canino', 'Carboncella', 'Itrana', 'Moresca', 'Rotondella', 'Taggiasca', 'Tondina', 'Grossa di Gerace' and 'Nocellara Etnea') grow on 655 000 ha, representing a 58% share of total olive acreage. (Source: UNAPROL)

#### Coratina

This variety adapts easily to different olive growing environments and starts bearing very early. Its rooting ability is high.

The flowers have a low pistil abortion rate. The inflorescences are often leafy. In its area of origin the 'Cellina di Nardò' is used as a polliniser. Its productivity is high and constant. The fruit ripens late and varies a lot in size. Some years it is also suitable for green olives in brine. Oil yield is high and the oil has a very high polyphenol content.

It is particularly tolerant of cold and susceptible to sooty mould and wood rot.

#### Cellina di Nardò

This vigorous, hardy variety has rather slow vegetative growth and an intermediate start of bearing.

It flowers early and the flowers have a high pistil abortion rate. Partially self compatible, it is also used as a polliniser. Its productivity is high and constant. Fruit ripening is phased and the olives have a high removal force. It has a low oil content and the oil is hard to extract when the fruit is not fully mature.

It is particularly resistant to olive knot, olive fly, sooty mould and olive leaf spot as well as to cold.

#### Carolea

This variety adapts easily and can be cultivated up to an altitude of 800 m.

It has a high rooting ability. It is self-incompatible and therefore needs suitable pollinisers such as 'Nocellara messinese', 'Cassanese', 'Pidicuddara', 'Picholine' and 'Itrana'. It flowers early and the pollen has a high germination ability.

Its productivity is high and constant and fruit ripening is phased. The clingstone fruit has a medium oil content and a flesh-to-stone ratio of 4.5. It is used for green or black pickling or for oil production.

It is particularly resistant to low temperatures whereas it is sensitive to olive leaf spot and olive fly and very susceptible to *Cercospora cladosporioides*.

Some clones of this variety have been identified.

#### Frantoio

This variety has a high, constant productivity and is also prized for its adaptability. There are numerous ecotypes similar to it.

It has a high rooting ability and an early start of bearing. Its time of flowering is intermediate and the flowers have a low pistil abortion rate. It is self-compatible but its productivity rises when suitable pollinisers are present.

Fruit ripening is late and phased. It has a medium oil content. In Tuscany it is rated highly for the production of particularly fruity oils that are stable over time.

It is susceptible to olive leaf spot, olive knot and olive fly and it is sensitive to cold.

#### Leccino

This vigorous variety adapts easily to various olive growing environments and it has a high rooting ability.

It comes into bearing early. The flowers have a low pistil abortion rate and it is self-incompatible; reported pollinisers are 'Moraiolo', 'Pendolino', 'Maurino', 'Morchiaio', 'Gremignolo di Bolgheri', 'Piangente', 'Razzo', 'Trillo' and 'Frantoio'.

Its productivity is high and constant. The fruit ripens early and simultaneously and has a low removal force.

It has a low oil content and freestone.

It is particularly tolerant of cold, olive leaf spot, wood rot and olive knot whereas it shows marked sensitivity to sooty mould.

Recently, some clones have been identified that are tolerant of low temperatures or also suitable for table olive production.

#### Ogliarola Barese

This hardy, fast-growing variety has an intermediate start of bearing.

It is self-incompatible. The flowers have a low pistil abortion rate. It is often used as a polliniser. Its productivity is medium and alternate.

Ripening is late and the fruit has a high removal force. The oil yield at the mill is high. The oil is rated very highly and is characteristic of the producing area of Bitonto.

It is sensitive to freezing, sea winds and olive knot but tolerant of olive leaf spot. It is very susceptible to attacks from olive fly.

#### Moraiolo

This variety is characterised by its great hardiness and it adapts best to hill country. It has difficulty in healing pruning scars.

It has a high rooting ability and it comes into bearing early. It is self-incompatible; pollinisers are 'Maurino', 'Pendolino', 'Morchiaio', 'Lazzero', 'Razzaio', 'Maremmano', 'Americano', 'Rosino' and 'Mignolo'. The scientific literature reports some phenomena of inter-compatibility during fertilisation. Its time of flowering is intermediate. The pistil abortion rate does not exceed 20% and the flowers produce a lot of pollen.

Ripening is phased and the fruit is often arranged in clusters. Its productivity is high and constant. The oil content is high and the oil is rated highly for its characteristic "fruity" taste and for its squalene and polyphenol content.

It is susceptible to olive leaf spot, olive knot, sooty mould and wood rot whereas it tolerates low-moisture soils and sea winds.

Numerous ecotypes of this variety have been identified.

#### Bosana

This variety is productive and adapts easily. Its rooting ability is very low.

It comes into bearing late. Its time of flowering is intermediate and the flowers are inserted directly on the main rachis. Partially self-compatible, its crop production is enhanced by the presence of suitable pollinisers such as 'Pizz'e carroga', 'Olia niedda', 'Cariasina di Dorgali' and 'Tondo di Cagliari'.

Its productivity is high and alternate. Colour change occurs from the base of the fruit to the apex. Ripening is late and phased. In some years crops may also be used for black table olives. Oil yield is high.

Some clones are reported in the scientific literature.

#### Ottobratica

This very hardy variety grows to a considerable size. It has a medium rooting ability and an intermediate start of bearing.

It is self-incompatible. It flowers early and the flowers have a high pistil abortion rate. Productivity is high and alternate. The fruit ripens early and it has a low removal force and a high oil yield. It is clingstone.

It tolerates olive knot, olive leaf spot and cold. Several phenotypes have been reported.

### Canino

This hardy cultivar adapts readily and has the ability to send out numerous shoots. It has a good rooting ability and intermediate start of bearing.

The flowers have a low pistil abortion rate. A self-incompatible variety, it needs suitable pollinisers such as 'Razzo', 'Frantoio', 'Crognolo', 'Fosco', 'Grossolana', 'Olivone', 'Palmarino', 'Leccino', 'Raja', 'Maurino' and 'Moraiole'.

Ripening is late and phased. The fruit has a very high removal force and a medium oil content. Productivity is high and alternate.

It is resistant to olive fly, olive knot and cold but it is sensitive to olive leaf spot.

Some clones of this variety have been identified.

### Itrana

This hardy variety is characterised by its rapid growth. It has a high rooting ability.

It has an intermediate start to bearing. The flowers have a medium pistil abortion rate and it is self-incompatible; reported pollinisers are 'Leccino', 'Pendolino' and 'Olivastro'.

Its productivity is high and alternate. Ripening is phased and late and the fruit has a high removal force.

The crop is suitable for black pickling (freestone) or oil production (medium oil content).

It is particularly tolerant of cold and of the chief fungal diseases but it is sensitive to attacks from olive fly.

### Taggiasca

This variety grows to a large size and accounts for the whole of olive growing in the province of Imperia. It adapts well both on the coast and in hilly country. Its rooting ability is rather low.

It comes into bearing early. Its time of flowering is intermediate. It is partially self-compatible and the flowers have a low pistil abortion rate. Fruit set is high and productivity is high and constant. Fruit ripening is late and the fruit gives a high yield of oil. The oil obtained from this variety is characteristic of the production of Liguria.

It is sensitive to spring cold and water shortage and susceptible to olive knot and olive fly.

### Nocellara Etnea

This vigorous, hardy variety shows rapid vegetative growth. The scientific literature reports that its cuttings are particularly difficult to root.

It comes into bearing early. It flowers abundantly, and it produces large amounts of pollen, which germinates with great ease. It is self-incompatible; pollinisers are 'Zaituna', 'Biancolilla' and 'Moresca'. Phenomena of incompatibility have been noted with the 'Ogliarola messinese' and 'Tonda Iblea' cultivars.

It has a high, alternate productivity. Ripening is late and the fruit has quite a high removal force. The oil yield is low. The very uniform size and firm flesh of the fruit, which is resistant to handling, means that it is considered an excellent variety for green pickling. It has a flesh-to-stone ratio of 6.

It is particularly resistant to olive knot, olive fly and sooty mould. In contrast, it is susceptible to olive leaf spot. (Source: World Catalogue of Olive Varieties, IOC)



### 3.4. Olive oil: production and yield

Over the last decade (2000/01–2009/10) production has averaged 596 920 t, recording an increase of 19.64% on the preceding ten-year period.

Apulia and Calabria stand out with their respective 35.6% and 34% shares of national production, followed at a distance by other olive growing regions, such as Sicily (8%), Campania (5.8%) and Lazio (3.8%). Overall, the South accounts for more than 90% of Italian production. (SOURCE: ISMEA on ISTAT data)

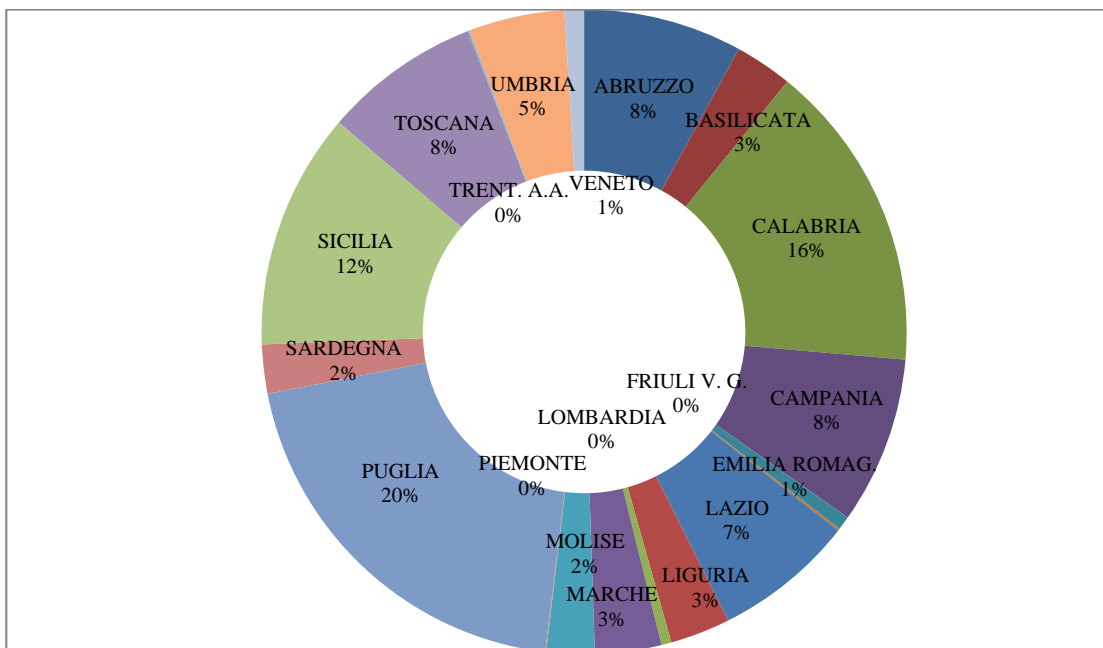
The 2009/10 season, used as the benchmark in the IOC questionnaire, was characterised by a low incidence of olive pests and diseases, chiefly due to seasonal patterns but also to effective monitoring.

In recent years producers have in fact been paying closer attention in this respect in order to lower production costs and improve quality. The increase in production is particularly notable in the central regions, which were affected the most by the unfavourable climatic conditions.

Overall analysis of the data for Italian olive oil production over the last decade reveals fairly stable averages lying at around 500 000 t/crop year, although there have been sharp peaks in 2004/05 (879 000t) and 2003/04 (685 000 t).

### 3.5. Olive oil: processing sector

In all, there were 4 809 olive oil mills in Italy in 2010/11. The majority of the mills are concentrated in Apulia (962 mills = 20%), Calabria (746 = 16%) and Sicily (598 = 12%), as can be seen from Figure 5 below.



**Figure 5.** Number of mills in Italy in 2010/11. (Source: IOC)

### 3.6. Olive oil: marketing, domestic consumption and foreign trade

In 2010/11, Italian producers fetched a price of €331/100 kg for extra virgin olive oil, well above the prices paid to their counterparts in Greece (€202.67/100 kg) or Spain (€196.50/100 kg). (Source: IOC database).

Domestic consumption of olive oil accounts for 70% of total vegetable oil consumption in volume terms and 86% in value terms. Over the last ten years, home olive oil consumption has averaged 752 770 t, representing 13.66% growth on the previous decade (Table 4). However, more recently in the last five crop years, the trend has been downwards (-1.3% on average) in step with domestic consumption of seed oils, although the value share has risen by 2%.

Looking at Italy's trade balance for the olive sector, the figures for 2008 (the most recent figures available) were better, although still negative in both volume and value terms. Quantitatively speaking, the combination of lower imports and slightly higher exports pushed the deficit below 200 000 t, while the deficit in value, amounting to 115 million euros, was almost half the level of the year before and the lowest since the start of the 2000s. (Source: UNAPROL, 2009)

**Table 4. OLIVE OIL** (Source: IOC)

	Average (t) 1990/91–1999/00	Average (t) 2000/01–2009/10	Change (%)
Production	498 930	596 920	19.64
Consumption	662 300	752 770	13.66
Imports*	93 030	108 730	16.87
Exports*	110 950	182 470	64.46

\*Disregarding intra-EU trade.

As can be seen from Table 4, olive oil imports averaged 108 730 t/year through 2000/01– 2009/10. In general, imports depend on domestic production. In the last decade, they have ranged between a high of 180 000 t in 2003/04 and a low of 40 000 t in 2001/02, but outside these seasons they have always exceeded 50 000 t.

Spain is Italy's leading source of olive oil, supplying an average of 422 768 t in the 2010 calendar year. Next in line lies Greece with an average of 76 592 t and Tunisia with 52 125 t (Source: EUROSTAT).

While Spain is the world's largest exporter of olive oil and the predominant figure in intra-EU trade, Italy is the number one in olive oil exports to third countries.

Italian exports of olive oils have risen significantly (64.46%) between the two decades reported in Table 4, going up from 110 950 t in 1990/91–1999/00 to 182 470 t in 2000/01–2009/10. The rate of growth has been almost constant in the latest decade (2000/01–2009/10), except for two seasons (173 000 t in 2000/01 and 171 000 t in 2003/04), which coincided with notable decreases in domestic production.

Between January and December 2009, the main EU recipients of Italian exports were Germany (41 854 t), France (32 400 t), the United Kingdom (21 544 t) and Spain (18 489 t) (Source: EUROSTAT).

In the 2010 calendar year, exports to non-EU markets were mainly to the United States (109 226 t), Canada (24 314 t) and Japan (18 595 t). (Source: EUROSTAT).

### 3.7. Table olives

According to the ISTAT survey conducted in 2008/ 09, Italy produced 68 453 t of table olives. This is far below the average for the EU producer countries and shows that, despite being a major consumer, the table olive sector is somewhat of a sideline for Italy. Even so, it is the third largest producer in the EU, after Spain and Greece.

Around 35% of production comes from table cultivars; the rest comes from dual-purpose cultivars, which vary widely depending on market demand and seasonal patterns. Sicily accounts for a 43% share of national production and Apulia for around 25%.

Analysis of the producer prices paid for premium table olives in 2009 points to a decrease from season-before levels. The drop is particularly significant in the case of black ‘Gaeta’ olives (-31%) and ‘Bella di Cerignola’ (-23%).

The picture that emerges is one where there is considerable room for improvement, amongst other things in pricing policies, which should aim to reward the excellence of Italian products. In 2009/10, the international table olive market did not deviate much from the Italian market, being characterised by fairly widespread decline. Here too, the lack of dynamic demand, and above all the downward pressure on prices exerted by buyers, has had a negative impact.

**Table 5.** TABLE OLIVES (Source: IOC)

	Average (t) 1990/91–1999/00	Average (t) 2000/01–2009/10	Change (%)
Production	69 200	64 320	-7.05
Consumption	123 310	138 610	12.40
Imports*	4 370	7 440	70.25
Exports*	940	2 340	148.93

\*Disregarding intra-EU trade.

As can be seen from Table 4, total domestic consumption of table olives averaged 138 610 t/year in 2000/01–2009/10. Per capita consumption worked out at around 2.3 kg/year. Around 57% of the table olives consumed in Italy were semi-processed or fully processed imports, while the remaining 43% were home produced.

On the foreign trade scene (Table 4), Italy imported an average of 7 440 t in the last decade, mainly from Spain and Greece, while exports came to 2 340 t.

### 3.8. Measures

The olive oil sector has reached an important stage in its development. Structural changes are affecting the entire supply chain, driving it towards greater rationalisation, the introduction of product innovations and greater focus on quality.

At international level, the sector is growing as production rises, pulled by demand mainly from new, non-traditional consumer countries. The olive industry is responding to these challenges through programmes to improve quality and traceability and to create greater consumer awareness of olives and olive oil.

The structural peculiarities of the sector highlight the needs of the Italian olive sector. Basically, synergistic action is called for by all the stakeholders in the industry to showcase the premium quality and distinctive features of Italian olive oil. Quality and product innovation, along with promotion and communication activities, continue to be important strategic levers which companies should use to reach today's increasingly quality-conscious consumers.

For Italy, the pathway to the development of the olive sector is mainly to capitalise on its strengths, i.e. its know-how in creating blends that are recognised and appreciated on foreign markets and its enormous varietal potential, which makes it possible to produce oils that are very different in taste, flavour and colour and which offer a versatility of combinations in dishes and regional cuisines.

The priorities for action along the supply chain are summarised below:

- Restructuring to improve competitiveness
- Restructuring and rationalisation of processing plants, particularly to increase storage capacity
- Management strategies aimed at sustainability, multi-functionality, innovation and production enhancement
- Integration and coordination of action
- Proposal of strategies for product segmentation according to region and organoleptic profile
- Development of technical assistance (for traceability, environmental impact management, certification) and services (organoleptic and chemical testing, labelling, etc.)
- Action to educate and inform consumers about the characteristics of extra virgin olive oil, with a focus on protected designations of origin (PDOs) and organic product.

#### 4. SOURCES

##### **IOC database**

<http://www.internationaloliveoil.org/estaticos/view/130-survey-and-assessment-division>

##### **United Nations**

<http://data.un.org/Default.aspx>

##### **World Bank**

<http://data.worldbank.org/country>

##### **FAOSTAT**

<http://faostat.fao.org/site/342/default.aspx>

##### **EUROSTAT**

[http://epp.eurostat.ec.europa.eu/portal/page/portal/international\\_trade/data/database](http://epp.eurostat.ec.europa.eu/portal/page/portal/international_trade/data/database)

##### **UNAPROL, Unione Nazionale tra le Associazioni di Produttori di Olive, Italy**

<http://www.unaprol.it/>

##### **ISMEA**

<http://www.ismea.it>