

Chapter Four

The Olive Oil Cluster, 2002

I. The Historical Development of the Olive Oil Cluster in Jordan

Though olive oil has been produced and consumed in the Mediterranean Basin for thousands of years, it has become well known in other parts of the world in the last thirty years or so. Today olive oil is one of the most widely appreciated edible oils due to its nutritional value and gastronomic properties. It is one of the basics of the so-called *Mediterranean Diet*, considered one of the most balanced nutritional models nowadays.

The cultivation of olive trees started in the Middle East some 6000 years ago. The territory that comprises the present Hashemite Kingdom of Jordan is regarded as one of the homelands of cultivated olives and cradles for olive oil.

There are two main olive producing regions in Jordan; the western mountain ranges that cross the country from north to south, and the north eastern desert region. The former is rain-fed and covers an area of approximately 81,000 hectares with an average density of 140 trees per hectare. It produces 70% of the total olive oil output in Jordan. While the latter is irrigated, covers approximately 26,000 hectares with an average density of 200 trees per hectare, and produces the remaining 30%.

Each producing region pursues a very different olive cultivation pattern. In the rain-fed mountainous area, farms tend to be small. Olive growing is carried out in a very traditional way with minimal use of chemical fertilizers and pesticides. As a result, production costs as well as productivity are relatively low, and pests, especially the olive fly, are rather common. In the irrigated eastern area, farms are larger. Production costs and productivity are higher since fertilizers are widely used and other agricultural practices like plowing, weeding and trimming are more common.

Nevertheless, quality wise both crops seem rather similar. According to estimations made by NCARTT, the production of the best quality oil, extra virgin, as a percentage of total production is alike in both producing areas.

The olive trees planted in Jordan belong to the dual-purpose type, this means that their fruits are used to make oil as well as table olives. The predominant olive varieties are Nabali and Rasie, both indigenous, which seem to have been cultivated in the area for centuries. Another local variety called Souri, cultivated in the provinces of Ajloun and Jerash, has very good and differentiated organoleptic characteristics according to local experts. Many other varieties, most of them of Italian origin, are also grown in Jordan.

Olive farming in Jordan has important environmental and social implications. Olive trees reduce soil erosion during the rainy season by providing cover to parched soils, thereby lessening the impact of rain on fragile soils. Hence, olive trees are one of the leading agents against desertification; helping to maintain the inherited, traditional landscape. Furthermore, olive groves are highly valued recreational areas in a country where

forests are almost non-existent. Additionally, olive farming makes a significant contribution to employment, particularly the employment of the rural population. Many of the poorest farmers in the mountainous regions produce olives, since in this rocky, sandy soil, no other crops grow or rather; no other agricultural activities can be pursued.

According to the Olive Oil Encyclopedia, published by the International Olive Oil Council (IOOC) in 1996, *"in 1990, Jordan had olive oil orchards on 54,742 hectares with 5.4 million trees of which 26% were not yet productive. Average production between 1986-87 and 1991-92 was approximately 8,000 tons. Jordan had to import about 3,000 tons of olive oil per year in addition to about 30,000 tons of other vegetable oils."*

However, the last decade witnessed the steady development of the Jordanian olive oil sector. According to the MoA, today the total surface area devoted to olive tree cultivation is approximately 110,000 hectares. The number of olive trees at present is estimated at around 15 million, and every year, approximately one million new olive trees are planted, half of which come from governmental nurseries and the rest from the private sector.

If today's pace of new plantations is maintained, average production in forthcoming years could be as high as 25 thousand tons or higher. As production increases we may reasonably expect a decrease in olive oil prices that will probably boost domestic oil consumption up to an average of 20 or 21 thousand tons, especially if public action is taken to promote its positive health related and gastronomic properties.

II. The Jordanian Olive Oil Cluster

A. Domestic Market; Current Status:

1. Market Size and Growth Rate: (See table 4.1)

Year	Carry over starting (000's)	Production (000's)	Imports (000's)	Available supplies (000's)	Consumption (000's)	Domestic Prices (JD/Kg)	Exports (000's)	Carry over ending (000's)
1995	4	14	0.5	18	16	(3)	0.5	2
1996	2	23	0.5	25	22	(2.625)	0.5	3
1997	3	14	2	19	19	(2.625)	0	-
1998	-	21.5	-	2.5	19	(2.5)	1	1.5
1999	1.5	6.5	1.5	9	9	(2.5)	0.5	-
2000	-	27	0.5	27.5	20	(2.25)	0.5	7
2001	7	15	-	27	18	(2.15)	0.5	3.5
2002*	3.5	(30)	-	(33.5)	(23)	(1.65)	(1.5)	(9)

* Very optimistic scenario
Source: IOOC statistics.

The size of the Jordanian olive oil market is estimated as average. Local production fluctuates strongly every year due to the extreme alternative-bearing pattern of the planted olive trees while consumption seems to adapt to the available supplies. Imports and exports represent a very small percentage of the market. To be specific, imports have not been recorded in the past two years, while exports, always in bulk, have been insignificant and sporadic.

Average production between 1995-2001 was 17,208 tons, whereas average consumption was slightly higher, 17,571 tons. Nevertheless, the average 1995-2001 per capita consumption of olive oil was 3.3 kg, with an average ending carry-over of approximately 2,500 tons. Even in years like 1999 when the local olive oil output dropped by 60% relative to the average production during 1995-2001, according to the Jordanian Department of Statistics (DOS), imports only amounted to 173.5 tons. IOOC statistics recorded a higher imports figure for that year. In fact, the reported imports figure for that year was 1,500 tons.

Oil production in 2002 is expected to be as high as 30 or 35 thousand tons, with an estimated price of JD 1.6 per kg, which is almost 50% lower than in 1995. A great increase in consumption is also expected. In accordance with the estimate of some producers, in the forthcoming years domestic consumption could experience a dramatic growth and reach 25,000 tons. This would confirm the past years flexibility of olive oil demand observed in producing and importing countries alike.

However, in the near future, the country is expected to face the problem of dealing with an increasing olive oil surplus. Hence, action must be taken swiftly to adopt an export driven policy supported by the government.

2. Market Segments:

Segmentation by types of product in the olive oil market in Jordan almost does not exist. There is only one olive oil type, which is sold in the market at a single price.

The Classifications and Definitions of Jordanian Olive Oils can be summarized in one sole category; *Virgin Olive Oil*, which includes the entire range of products that the International Standards differentiate as *Extra Virgin*, *Virgin Fine* and *Ordinary Virgin*. In other words, in Jordan, that one category includes all the virgin oils that are suitable for human consumption (virgin oils with less than 2% acidity with very good or good standards of aroma and taste), plus ordinary virgin, which according to the International Standards cannot be sold directly to consumers. (Note that the distinction between virgin fine and ordinary virgin is only applied in the wholesale market). (See Box 4.1)

Box 4.1: Jordanian Classification vs. International Classification:

Jordanian Classification:

Virgin olive oil: The oil obtained from the fruit of the olive tree by mechanical or other physical means under conditions, particularly thermal, which do not lead to the alteration of the oil properties. Acidity should not exceed 3.3%. Virgin olive oil is suitable for consumption in its natural state. The oils must be clear, of yellow to green color, with a specific

odor and taste. Oils free from odors and taste indicate alteration or pollution of oil.

International Classification:

Virgin olive oil: The oil obtained from the fruit of the olive tree solely by mechanical or other physical means under conditions, particularly thermal conditions, that do not lead to alteration in the oil, and which has not undergone any treatment other than washing, decantation, centrifugation and filtration.

a. Virgin olive oil fit for consumption as it is, includes:

- i) **Extra virgin olive oil:** Virgin olive oil which has a free acidity expressed as oleic acid, of not more than 1 gram per 100 grams, and the organoleptic characteristics which correspond to those fixed for this category in this standard.
- ii) **Fine virgin olive oil:** Virgin olive oil which has a free acidity expressed as oleic acid, of not more than 2 grams per 100 grams and the organoleptic characteristics which correspond to those fixed for this category in this standard.
- iii) **Ordinary virgin olive oil:** Virgin olive oil, which has a free acidity, expressed in oleic acid, of not more than 3.3 grams per 100 grams and the organoleptic characteristics which correspond to those fixed for this category in this standard.

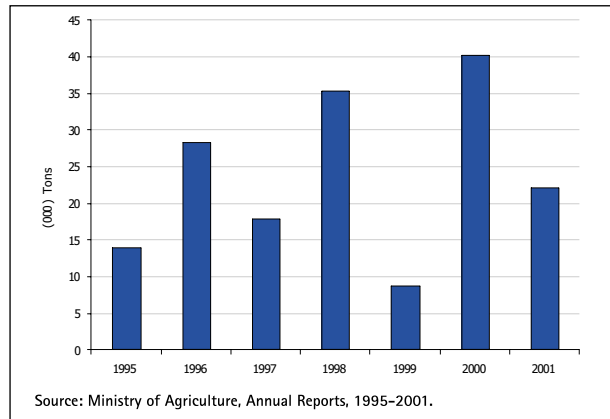
b. Virgin olive oil not fit for human consumption as it is, known as *Lampante virgin olive oil*, is virgin olive oil which has a free acidity expressed as oleic acid, of more than 3.3 grams per 100 grams and/or the organoleptic characteristics which correspond to those fixed for this category in this standard. It is intended for refining or for industrial purposes.

While taking the above into consideration, Lampante oils, virgin olive oils with acidity level over 3.3% and/or very clear organoleptic defects, which are not fit for direct consumption, are not addressed by the Jordanian regulations. Furthermore, no chemical or organoleptic analysis of the olive oils produced in Jordan is carried out on a regular basis by any private or public body. Some producers and millers get their oils analyzed but only the acidity level is measured.

Some producers and specialists estimate that some 30% of the production would fall within the extra virgin category, another 30% would be virgin fine and the rest would be ordinary virgin or Lampante virgin. Lampante virgin oils, if produced, are not refined and are probably commercialized as virgin olive oil.

Pomace is the solid residue (skin, stone and pulp) that remains once the mechanical oil extraction operation has been completed to obtain oil from the olive. It still contains a certain quantity of oil and vegetable water, on average 5% to 8% of residual oil and 25%-55% of vegetable water. The residual oil can be recovered after drying the pomace, by applying chemical solvents, usually hexane. Hence, some olive oil can still be extracted using chemical solvents.

Jordan produced some 22,000 tons of pomace from the 2001–2002 year crop. (See figure 4.1) There are two plants in the country dealing with pomace oil extraction, with a processing capacity of 30,000 and 15,000 tons per year respectively. However, the end product is not refined nor is it used for human consumption. Crude pomace oil is used for soap manufacturing. Exhausted or dry pomace is pelletized and used as a fuel. Its calorific value is 3,500 Kcal/kg.



It is not clear how much pomace is processed in these plants annually. Millers do not check oil content in pomace before it is sold to the extraction plants. Average price is around JD 3 per ton. Some millers just give farmers pomace free as animal feeder or fuel.

Conversely, vegetable water is severely contaminating superficial and subterranean water. Until recently the wastewater used to simply be discharged, polluting the environment. Yet environmental regulations now restrict such practices. In Jordan, wastewater is generally stored in concrete pools or ponds at mill sites. Eventually, it is transferred in tanks to designated areas and dumped.

3. Consumption Habits and Tendencies:

In general terms, as production increased, olive oil consumption increased during the last 6 or 7 years. Nevertheless, prices tended to decrease from JD 3 per kg in 1995 down to JD 2 or less at the end of 2001.

Consumers' attitude vis-à-vis olive oil is very positive in Jordan despite poor or almost non-existent promotion or advertising, and price, which is three fold higher compared to other vegetable oils. The high price is to be credited to its high quality image. Olive oil is perceived as a traditional and healthy food item that has been locally produced and consumed for thousands of years, being part and parcel of the local cuisine.

Olive oil is still traded as a commodity in a large gamut of rural markets. It is something that people acquire from trustworthy producing neighbors, producers selling to friends or through distribution among family members and friends.

As for usage, olive oil is generally employed raw as salad dressing and seasoning in many types of dishes, yet not usually utilized for cooking, frying or deep-frying. These cooking techniques require large quantities of oil. Consequently, cheaper vegetable oils are commonly preferred. Additionally, some consumers have the misperception that olive oil is not suitable for frying.

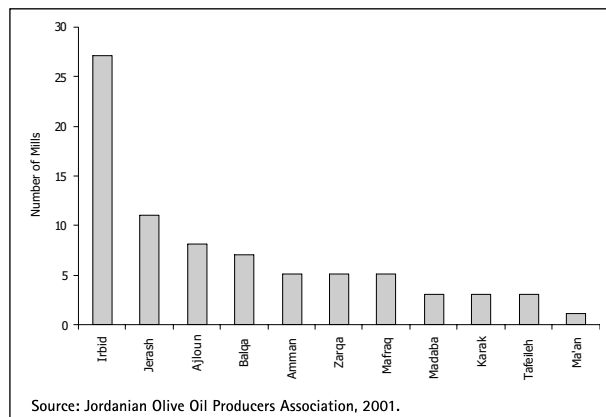
In spite of its higher price, olive oil consumption is so deeply rooted among Jordanians, especially in rural areas, that those with a lower income who cannot afford buying 16 kg tins at one time, have started acquiring smaller quantities, some times as small as half a liter. Accordingly producers have started selling small quantities of olive oil in refilled plastic bottles of soft drinks.

B. Mills:

1. Physical Structure, Systems and Processing Capacity:

Since the early eighties, the traditional oil producing systems and presses, are being substituted with continuous flow centrifuge systems. In fact, traditional presses have totally disappeared from the Jordanian market. Instead, 78 modern mills have been installed and distributed all over the Kingdom. (See figure 4.2) Most of them are using the three-phase system.

Figure 4.2: The Geographical Distribution of Mills in Jordan by Governorates



Nevertheless, some mills are also using the more modern two-phase system, introduced in the market in 1992. Under this system, water is not normally added to the paste unless the olives are very dry. The decanter has only two nozzles, one for the oil and the other for the pomace and the vegetable water from the olive. There is no liquid waste phase to cause contamination of superficial

and subterranean water. As a result this system is also known as the ecological system.

The great majority of mills were established and installed by reputable manufacturing firms from Italy. The equipment used meets all hygiene and food processing requirements and enables the production of high quality olive oil.

The quality of maintenance in mills is also acceptable. Most spare parts are available in the local market while special ones are supplied directly by manufacturers. However, the fact that the premises of olive oil mills are built in general by civil engineers, who are unaware of the international standards required for food processing plants, causes the inconvenience of inadequate storage facilities. Accordingly, most mills lack appropriate facilities for olive oil storage and oil is usually stored in the same 16 kg tin cans that are eventually sold with oil.

When good quality olive oil is stored in tin containers for a long time, certain organoleptic defects called "metallic" and "cucumber" may appear. The former faulty flavor, "metallic" is reminiscent of metals. It is characteristic of oil, which has been in prolonged contact with metallic surfaces during crushing, mixing, pressing or storage. "Cucumber" flavor is produced when oil is hermetically packed for too long in tin containers. It is attributed to the formation of 2-6 nona-di-enal.

Another finding concerns the operation of mills. Most mills operate below their potential capacity as illustrated in figure (4.3) due to faulty olive procurement practices that will be commented on later. The total olive processing capacity installed in the Kingdom even seems to be enough to cope with the larger oil production of 30 to 35 thousand tons expected in the 2002-2003 year crop.

To elaborate on these figures, we have estimated 20 working hours per day during a 40-day season. This assumption is very conservative; it is still far from the best practice in major producing countries, which is a 24 hours per day operation during most of the season. Besides, olives used for pickling, around 13% of total, have been taken into account as well.

Finally, managerial skills in general are poor in terms of cost control, cost accounting, product quality control, and good manufacturing practices.

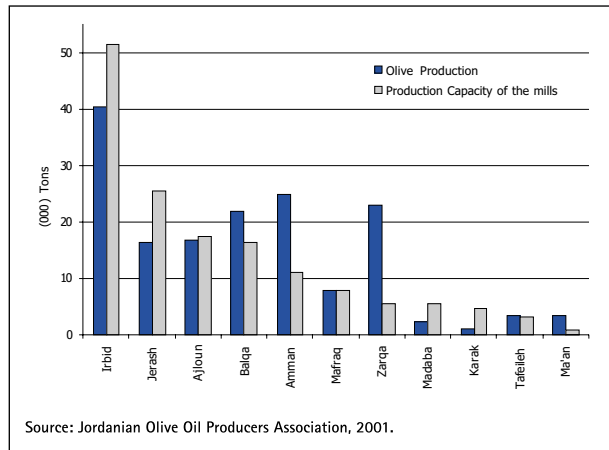


Figure 4.3: Tons Per Season Processing Capacity by Governments 2000-2001 Olive Productions

2. Main Practices and Functions:

a) Olive Procurement:

Olive harvesting and olive processing activities are badly coordinated causing mill inefficiency, and therefore higher oil cost. To be precise, most olives are not harvested at the best time; they tend to be picked when either too green or too ripe. Additionally, some farmers do not separate the fresh, healthy olives on the trees from those that have already fallen to the ground and have started to ferment.

After picking, the olives are then taken to the mills in small batches; usually in plastic bags, which do not let olives breathe leading to fermentation, which causes the quality of the oil finally produced, to deteriorate. Upon arrival to the mills, olives are not graded or separated before processing nor are they weighed or sampled to evaluate oil yield, thereby hampering the production of higher quality oil.

However, even when bringing in very small batches of olives, sometimes as small as 1/4 of the average mill capacity, farmers insist on their olives being processed separately. They totally refuse to mix their olives with those from other growers on the assumption that their oil is the best, consequently diminishing mill efficiency and oil quality.

Finally, millers do not buy olives from growers. They just process the olives brought in by growers and retain a percentage of the oil obtained as payment.

b) Oil Packaging:

In Jordan olive oil is mostly sold in tin cans or Polyethylene Terephthalate (PET) bottles. Both types of container are made in the country according to basic international standards. Nevertheless in the main producing countries, these sorts of containers are mostly used for lower grades such as *olive pomace oil*, *olive oil* and *virgin olive oil*. Extra virgin olive oil, on the other hand, typically known as the highest grade,

is usually packed in glass bottles with less than a 1-liter capacity. Glass bottles are not manufactured in Jordan and therefore have to be imported. At present, for export purposes, some glass bottles are being imported from Turkey and Italy.

There are 6 or 7 semi-automatic bottling lines in Jordan none of which meet international sanitary standards, and hence entail air blowing before filling. Given the small size of the retail olive oil market in Jordan, not one of these bottling lines seems to be working at full capacity.

3. Quality Control:

Few food products in the world are subjected to more quality controls than olive oil. According to the International Trade Standards approximately 40 parameters have to be measured when analyzing olive oil.

In Jordan, olive oil is not analyzed on a regular basis by any public or private body. Acidity level is the only chemical parameter analyzed upon producers' request, usually for export purposes only.

Four entities in Jordan are equipped with laboratories able, to some extent, to conduct olive oil quality controls. Nevertheless, none seem to be fully specialized in fats analysis. These entities are:

- The Royal Scientific Society (RSS)
- The Jordan Institute for Standards and Metrology (JISM)
- The Ministry of Health (MoH)
- The Municipality of Greater Amman (MoGA)

Finally, not one single IOOC recognized tasting panel exists in Jordan to perform sensory analysis of olive oil.

4. Cost Structure:

As previously mentioned, there are no reliable figures or studies regarding olive and olive oil production costs in Jordan. Cost estimations made by different producers are very contradictory.

Nevertheless, it is taken for granted that olive production in irrigated areas can be almost four times larger than rain-fed ones. On a yearly average, olive production per tree in an irrigated grove, could get as high as 60 kg versus 15 kg in a rain-fed mountainous grove. However, oil yield would be practically the same in both regions, at around 20%.

Cost per kg of oil from olive trees grown in irrigated areas could double that of rain-fed ones, though again estimates vary widely among different producers. Oil production cost is also difficult to establish since no single mill seems to have developed a cost calculation system.

C. Distribution Channels and Conditions:

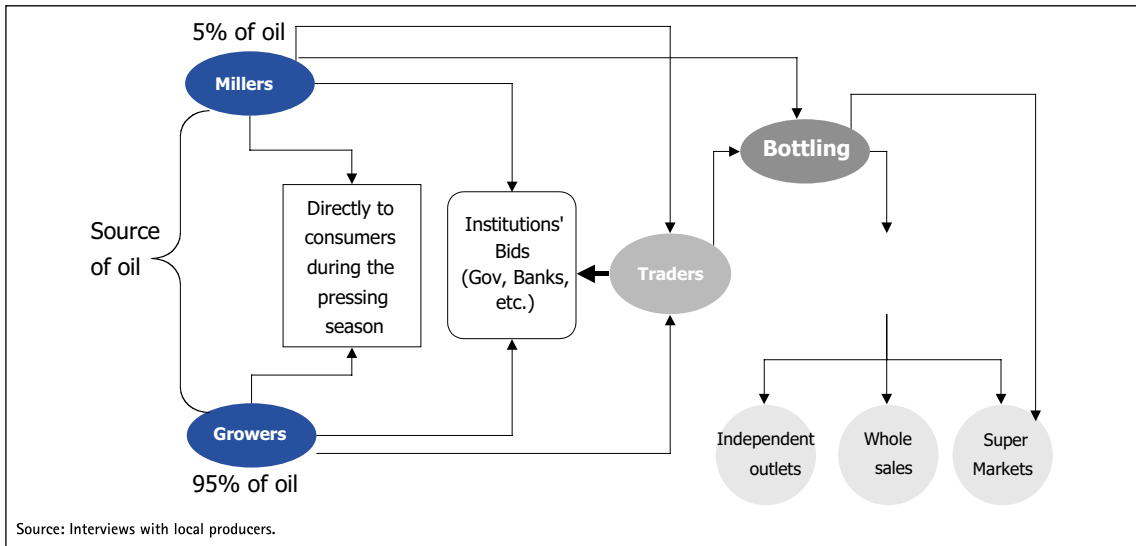


Figure 4.4: Olive Oil Distribution Channels

Most Jordanian virgin olive oil production, around 70% (at least), is sold by the growers and millers directly to consumers or to institutions (government, banks etc) in bulk in 16 kg tins. Of course, no quality or purity analysis is carried out. This figure is just an estimation made by some producers since sales are not invoiced and no taxes are paid. These sales are usually made during the production season, from October to December; it is usual for consumers to buy, at this time, as much olive oil as considered necessary to satisfy their needs for a period of two years.

The remaining 30% is sold through traders to packing and bottling companies. Packed olive oil is then sold through wholesalers or directly to independent outlets or supermarket chains. At the retail level, Jordanian virgin olive oils are sold branded in 700 ml. PET bottles and tins of 2000, 2700, 3000 and 4000 ml.

Labeling is not uniform. Some labels clearly state the type *Virgin Olive Oil* with no further information, while others mention the acidity level in addition. Some state that the product is *cholesterol free*.

Surprisingly, a brand labeled 100% *Extra Virgin Olive Oil* has been found in a prominent supermarket chain, in PET bottles of 900 ml and glass bottles of 3000 ml, showing clearly the acidity level of less than 1% and also the production and expiry date. Nevertheless, this extra virgin olive oil is sold at the same price as the other virgin olive oils. There is no consumer awareness in terms of the difference between the two types.

In brief, the olive oil domestic market in Jordan is very primitive, as it has been isolated from international olive oil trends. Generally producers market olive oil production in bulk; the retail olive oil market represents only 30% of the total. Market oriented companies in the sector are few, relatively small, and ill prepared to individually face the challenge of developing foreign markets for Jordanian olive oil.

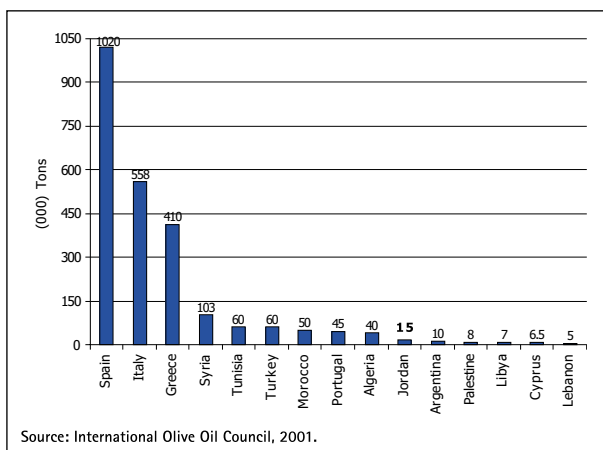
III. The International Olive Oil Markets

According to OLIVAE; the official magazine of the IOOC, November 2001 issue, *the latest report on the situation of the world olive oil market, presented at the ordinary autumn session of the IOOC, confirmed the major trends outlined at previous sessions:*

- A world market in continuous growth where production and consumption are balanced.
- A world market significantly influenced by price fluctuations.

A. Evolution of Olive Oil Production in the World:

Figure 4.5: Olive Oil Production by Countries



According to the IOOC statistics, the average olive oil production between 1996-97 and 2001-2002 was 2,458,900 tons. The highest production was obtained in the 2000-2001 campaign, at 2,579,000 tons, and the lowest in the previous one, at 2,347,000 tons. The difference between the best and the worst year in that period amounted to 232,000 tons. However, higher crops in other producing countries cushion the impact of lower crops.

The main producing region in the world, according to figure (4.5), is the EU with a 75% share of the world total. Spain is the largest producer, followed

by Italy, Greece and Portugal. Outside the EU, the main producers are Tunisia, Turkey and Syria, whereby their combined production represents approximately 20% of the world total.

Other significant producers around the Mediterranean Basin are Morocco, Jordan and Palestine. Outside the Mediterranean region the only country that has a production of some importance, is Argentina. Other small producers are Mexico, the US and Australia.

The provisional figure for olive oil production in 2001-2002 amounts to 2,424,500 tons; down by 6% in absolute terms from 2000-2001. The starting and ending carry-over in the past two years stand some 30% above the quantity required (480,000 tons) to satisfy bridging needs between seasons. This balance between production and consumption helped keep prices stable, which in turn contributed to the sustained growth of world markets.

B. Evolution of Olive Oil Consumption in the World:

World olive oil consumption increased by 50% between 1990 and 2000. However, the figures for world production and consumption have been fairly balanced over the last few years. The growth in world production was accompanied by a growth in world consumption (see figure 4.6) especially in non-traditional markets. The average world consumption between 1996-1997 and 2001-2002 was 2,371,000 tons, corresponding to

the highest world consumption in the 2000-2001 campaign, 2,565,500 tons respectively.

World consumption is still heavily concentrated in traditional markets (see figure 4.7), but the growth in countries where olive oil was hardly used or almost unknown some 15 or even 10 years back is extraordinary. This would be the case in France, Germany and the UK in Europe, the US in North America, and Japan and Taiwan in the Far East.

The health benefits of olive oil, examined and confirmed in the USA some thirty years ago, have triggered this remarkable increase of olive oil consumption in non-traditional markets, especially in highly developed countries. Its gastronomic qualities have won it the recognition of consumers and cooking professionals worldwide. Olive oil, especially virgin olive oil, is the only oil available in the market in great quantities that is made from fresh fruit (keeping the aroma and flavor of the olives, the basic component of olive oil).

Hence, the growing awareness of the different types of olive oil and therefore of the superior quality of virgin olive oil, explains why consumption of extra virgin olive oil is growing faster than that of olive oil in past years despite its higher price. This strong trend applies to both traditional and non-traditional markets.

Today, extra virgin olive oil represents 100% of the olive oil market in France, 60% in Italy, around 50% in the UK, between 30-40% in the USA and Japan, and 30% in Spain.

C. Price:

Olive oil demand has proved to be rather flexible; the market is significantly influenced by price fluctuations. (See figure 4.8) Price trends play an important role in any product. In the olive oil sector, prices are influenced by many factors that provoke fluctuations. Price differences between producer markets have an important impact on market performance each year.

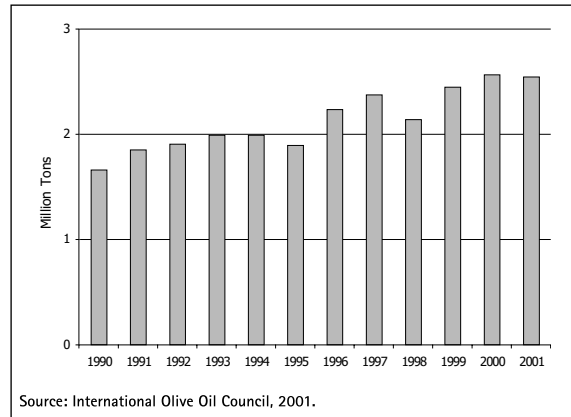


Figure 4-6: World Consumption (1990-2001)

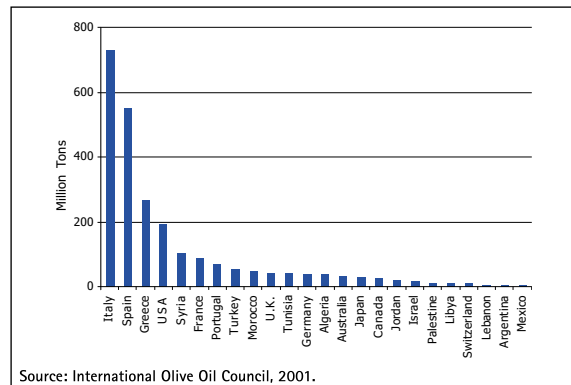


Figure 4-7: World Consumption by Countries 2001

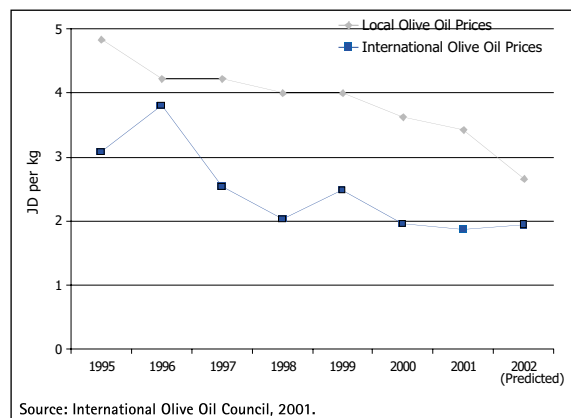


Figure 4-8: International Prices for Extra Virgin Olive Oil

In previous campaigns, consumption and international trade benefited from the downward trend in producer prices and the Euro/Dollar exchange rate, (Dollar is the currency used in the main import markets). The recent upward price trend in the main producing countries, Spain, Italy and Greece, which make up 75% of world production, and the stability of the Euro/ Dollar, indicate that the current trend in world trade may bring about some difficulties in the coming season.

IV. Olive Oils From Jordan; An Export Strategy

The final part of this study explores Jordan's export potential, and identifies available opportunities. Further, based on the findings of the study, a short-term export strategy for Jordanian olive oil is formulated and designed to boost exports in the short-run.

This part is also dedicated to the formulation of a long-term export strategy for Jordan, in an attempt to build a worldwide image of Jordanian oil to facilitate the penetration of more advanced international markets.

Jordanian Olive Oil Trade Balance Overview:

□ Exports:

Year	Average FOB Export Price (JD/kg) (JD/kg)	Domestic Price
1995	1.32	3.00
1996	1.74	2.62
1997	1.70	2.62
1998	1.18	2.50
1999	2.20	2.25
2000	1.15	2.25
2001	1.19	2.15

Table 4.2: Average FOB Export Price and the Domestic Price (JD/kg)

Source: Department of Statistics.

According to the DOS, average olive oil exports between 1995-2001 amounted to 352 tons. This represents around 2% of the average production (17,277 tons) in that period. Surprisingly, olive oil exports reached the peak (almost one thousand tons in the year 1999), when production was at its lowest level.

Exports were carried out by a very small number of companies (3 or 4), always in bulk and were not the result of any marketing strategy or activity. Jordanian export activities usually take place at the end of the year when olive oil prices are lower and there is a need to dispose of the olive oil surplus before the new harvest campaign begins.

The main destinations of Jordanian exports are Israel, and the Gulf Cooperation Council (GCC) countries (Kuwait, Bahrain, Qatar and Oman).

In 2001, Jordanian exports amounted to 350 tons, with a Free On Board (FOB) value of JD 419,598. The main destinations were Saudi Arabia and Kuwait. However, it is worth noting that for the first time, Jordan exported olive oil to the US market. It exported 32.7 tons with a FOB value of JD 64,457 (€ 40,609). These figures are based on data provided by the Jordanian DOS. According to other sources (olive oil producers and exporters), olive oil exports could be higher, as high as 2,000 tons, 900 of which would be exported to Israel.

Since September last year, some companies have started selling packed olive oil to Saudi Arabia. One company claims to have sold some 200 tons of virgin olive oil in 500 ml glass bottles, and 2,000 and 4,000 ml tins ever since.

□ Imports:

According to the DOS, in the period 1995–2000 Jordan imported approximately 5,900 tons of olive oil. However, only in 1997 and 1998 were the import figures significant, 2,199 and 3,438 tons respectively, with Tunisia and Turkey being the main suppliers. No imports were recorded in 1995 and 2000.

There were no imports recorded in 2001 either. According to some sources, the forecasted olive oil production for the 2002 campaign (October/December) will be well over 30 thousand tons, so no imports of olive oil should be expected.

It is worth mentioning that olive oil imports; commodity 1509 of the Harmonized Commodity and Coding System (HS-Code) are subject to a 30% import duty.

The Export Potential of Jordan:

Since international olive oil trade standards are not fully applied in Jordan, only one type of undifferentiated virgin olive oil is produced and marketed at one single price. In assessing the export potential of Jordan, it is essential to examine two types of market segments first:

□ Bulk Olive Oil Market:

Jordanian bulk virgin olive oil price this season 2001–2002 has been 3.37 Euro/kg, which is 2.125 JD/kg higher than prices in the two main producing countries Spain (Jaen, 17 March, extra virgin 1.92/1.95 Euro/kg) and Italy (Bari, March, extra virgin 2.82/3.29 Euro/kg). Spain and Italy have a dominant position in the international olive oil scene. Spain is the main exporter of bulk olive oil and Italy the main importer. Hence, it is clear that Jordan lacks competitiveness in this segment of the international market.

□ Packed Olive Oil Market:

Jordanian packed virgin olive oil, mostly in tins or PET bottles, similarly has little chance of success in the highly competitive mass markets of the largest importing countries like US, France, Germany, UK or Japan.

In brief, high price, low quality and inadequate packaging, poor marketing skills, and the international market's unawareness of Jordan as a producer, represent insurmountable barriers that block any access of Jordanian olive oil to international markets.

However, as Mr. Paul Gasparini United Nations Industrial Development Organization/ Investment Promotion Unit (UNIDO/IPU) stated in his study *Extra Virgin Olive Oil Production in Jordan*; *aside from this market there is a parallel one for high quality extra virgin olive oil where the quality factor gives added value to the product allowing the producers to gain much more than the above mentioned prices. This market is based upon strict implementation of the laws and regulations concerning the classification and certification of the product in each country, the trust between the consumer and the producer and a strong marketing strategy.*

Thus, Jordan's opportunity undoubtedly lies in the production of high quality extra virgin olive oil. This is already produced in Jordan but it has to be clearly identified, enhanced, expanded, and certified. Furthermore, it is vital to mobilize the necessary financial resources to create a worldwide image for Jordan as a reliable supplier of high quality olive oil. Moreover, Jordanian companies need to be provided with the necessary information, motivation, and capabilities to develop quality products and to market them efficiently through adequate positioning and segmentation.

In addition to the factors described above, there remains another factor influencing the export potential of Jordan. This factor relates to international price trends. Export companies should monitor the evolution of international virgin olive oil prices in the main markets to identify opportunities for bulk exports that may arise in the future. In 2002, expected world consumption is 122 thousand tons higher than expected production. However, available surplus can more than compensate for this imbalance, and is in fact generating an upward trend in prices that may help reduce the gap between local and international prices since the former is expected to decrease.

A. Jordan's Short-Term Strategy:

An Opportunity for Jordan; GCC Markets:

Gulf countries have been the traditional destination of Jordanian bulk exports. In 2000, Gulf countries imported around 12 to 14 thousand tons of olive oil and olive pomace oil, 60% of which was imported by Saudi Arabia; the biggest market in the region. Spain satisfied 75% to 80% of the needs of the region. Spain has, for many years, been the main exporter to the region and the indisputable reference for quality olive oil in the market.

Some 60% of Spanish exports were olive pomace oil, the cheapest and lowest grade of olive oil types. In June 2001, the Spanish MoH withdrew olive pomace oil temporarily from the domestic market due to a detected contamination with Polycyclic Aromatic Hydrocarbons (PAH) and exports were suspended.

Though the problem was rapidly resolved and the suspension lifted, the consequences were enormous. All GCC countries have banned imports of olive pomace oil and the image of Spanish olive oil has been greatly

damaged due to the lack of consumer awareness of the different types of olive oil. The pomace oil issue has deeply altered the market since this type was the most widely consumed. For the moment, GCC countries are only importing extra virgin olive oil. The market has shrunk, and consumers are still reluctant to purchase Spanish olive oil.

This crisis signaled a great opportunity for other producers like Syria and Turkey that are already taking advantage of the situation. In 2001, Saudi Arabia imported 4 thousand tons of extra virgin olive oil, of which only 1.3 thousand tons were from Spain and the rest from other producers such as Syria and Turkey.

Jordan may benefit as well if an urgent strategy and action plan are designed and implemented. In fact, a Jordanian company has already exported some 200 tons of packed virgin olive oil since September 2001.

In light of the above-identified opportunity, the following short-term strategy has been formulated to penetrate Saudi Arabia and other GCC markets:

1. Overall Marketing Objectives:

- a) To create awareness of Jordan as a supplier of high quality oil.
- b) To penetrate the target market(s) ideally gaining access to the main supermarket chains.

2. Tracks:

Our short-term strategy should focus on two major tracks: the establishment of a Jordan Olive Oil Export Group (JOOEG), and taste.

a) Jordan Olive Oil Export Group:

Jordanian exporters should immediately set up a formal association, hereon referred to as JOOEG. Joint efforts will help exporters overcome the risks and common weaknesses of their companies and make the most of the opportunities and strengths outlined below:

□ Risks And Common Weaknesses:

- Lack of image of Jordan as a high quality olive oil exporter.
- Lack of a sustainable information system.
- Very limited export experience in olive oil.
- Inadequate packing and labeling.
- Lack of company/product image and brand awareness in the Gulf.
- Relatively high price.

□ Opportunities and Common Strengths:

- Geographical proximity.

- Similar culture/ same language.
- Rising demand for extra virgin olive oil.
- Quality Jordanian product that suits regional taste.
- Organic oriented olive cultivation.

JOOEG will take upon its shoulders the key mission of building the image of Jordan as a producer and supplier of high quality olive oil.

Olive oil is already well known in many countries. It is one of the healthiest edible oils and the basis of one of the best nutritional models today, the *Mediterranean Diet*. Linking olive oil to Jordan will enhance the country's image as a whole and olive oil from Jordan can become the flagship of the Jordanian agro-food industry. However, to carry out this important mandate the government should support JOOEG.

The pomace issue proves that consumers in Saudi Arabia and the Gulf have little awareness of the different types of olive oil as well as of its gastronomic and health related properties. JOOEG should tackle this important issue since educating consumers is something that no other supplier or even IOOC has ever done in this part of the globe before.

b) Taste:

We should make the mild, differentiated taste of Jordanian extra virgin olive oil -that is the result of the olive varieties employed (Nabali and Rasie), growing conditions and processing methods- the cornerstone of the communication strategy.

Taste is therefore a key element in our strategy. It should be strongly emphasized since it represents one of Jordan's major strengths. Unlike most extra virgin oils sold in the region, which tend to have a strong taste, with different degrees of bitterness, the oils in Jordan are usually extremely sweet and smooth. These organoleptic characteristics of Jordanian olive oil fit the taste of the Gulf consumer, who has been accustomed for many years to the very mild taste of olive pomace oil.

B. Jordan's Long-Term Strategy:

An Opportunity for Jordan; High Quality:

It is assumed that, in essence, the export potential of Jordan lies in good quality extra virgin olive oil. This means an extra virgin olive oil that meets international trade analytical parameters, while also having very good standards of aroma and taste.

Factors that constrain Jordan's overall potential capacity to export olive oil include:

- High price.
- Lack of product differentiation.
- Total lack of Jordanian image as an olive oil producer.

- Lack of marketing skills.
- Low quality and inadequate package.

Others, that further reduce the possibility of exporting Jordanian olive oil outside the region, could be added:

- Inadequate laboratory capacity to analyze virgin olive oils according to international trade standards requirements.
- Non-existence of a panel test for sensory analysis of virgin oils.
- Lack of modern storage capacity in stainless steel tanks.
- Lack of a modern bottling line.

If the latter factors were overcome in the medium-term, and high quality certified extra virgin oil was produced on a consistent basis, the former factors would still represent insurmountable barriers. The Jordanian exports of olive oil would still fall short of being able to penetrate the sophisticated and highly competitive markets of developed countries, like the USA, Canada, Switzerland, Australia, Singapore, and Hong Kong, which are the main importers of extra virgin olive oil.

The main non-traditional markets in the EU are UK, France and Germany. These countries do not import olive oil for the moment, since they are supplied by Italy, Spain and Greece. Italy is the main importer of olive oil, though it imports only in bulk.

Bulk high quality extra virgin olive oil exports:

Still, there are some chances for selling oil to Italy, the main importer in the EU, in bulk or to the USA after being repackaged. Both markets are huge and volume is an essential factor for success. Therefore it would be necessary for Jordanian producers to form partnerships to be able to meet market demands.

Import duties for olive oil in the EU are high (1,25 Euro per kg), though it is possible for importers to get exemptions under certain conditions if the oil is to be re-exported. Under the Jordan/USA Free Trade Agreement (FTA) olive oil imports are exempted from the regular import duties of five cents per kg.

Packaged Olive Oil:

Two alternatives could be considered:

1. Sell the oil to a local distributor already established in the market to be marketed under his own brand name:

This alternative may be feasible if such a distributor is identified and the Jordanian producer manages to meet his requirements. However, the market would belong to the distributor and not the Jordanian supplier. Furthermore the Jordanian producer could eventually be replaced.

2. Develop a Jordanian National Brand Name:

This alternative would pose a great challenge. It is undoubtedly very difficult yet achievable.

a) Overall Marketing Objectives:

The overall marketing objectives should be to:

(1) Build an image for Jordan:

In other words, create awareness of Jordan as a supplier of high quality extra virgin olive oil in the potential target markets: US, Canada, Australia, Japan, Singapore, and Hong Kong.

The main elements, previously mentioned, Jordan must capitalize on to succeed are; 6000 years worth of tradition, Jordan's IOOC membership, indigenous high quality olive varieties, manual olive picking, modern infrastructure, eastern Mediterranean local cooking style.

(2) Attain market penetration:

Make Jordanian extra virgin olive oil available to consumers.

b) Tracks:

We should focus on two tracks to achieve the above stated objectives:

(1) The creation of a Consortium:

This is an association of companies aiming to penetrate foreign markets through a unified sales force and marketing strategy. This model has been widely experimented in the past years in countries like Spain and Italy. It is highly recommended for small or medium size companies with little to no export experience that are willing to penetrate foreign markets.

Operating in the framework of a Consortium, export companies can achieve economies of scale while minimizing risks and gaining export experience in a shorter time than needed if they were to work independently.

(2) Taste:

As in our short-term strategy, the mild differentiated taste of Jordan's high quality extra virgin olive oil should be the cornerstone of our positioning and communication strategy.

Conclusion and Key Recommendations

A. Summary:

The olive oil sector in Jordan has the potential to produce high quality extra virgin olive oils suited for all palates. The major strengths of the Jordanian Olive Oil Cluster are: good indigenous olive varieties with

differentiated characteristics, some good agricultural practices like manual olive picking, and an acceptable modern oil producing infrastructure, based on the three-phase continuous flow system.

Though it is still low for an olive oil producing country, olive oil consumption is deeply rooted among Jordanians who highly appreciate the product. If the price of olive oil decreases and awareness of the health, nutritional and gastronomic properties of olive oil increases, there is a great potential for growth in domestic consumption.

Inadequate olive procurement critically constrains the development of the olive oil sector in Jordan. This factor seriously hampers mill efficiency and olive oil quality. Mill inefficiency boosts production costs, and subsequently raises oil prices. Low oil quality diminishes export opportunities.

Jordan has been rather isolated from the international olive oil community. International olive oil grades and standards are not applied in the country. Lack of awareness of the different types and qualities of olive oil at all levels is another important impediment for the sector's development and improvement. Only one type of undifferentiated olive oil is available in the Jordanian market.

Low awareness of the best agricultural and oil manufacturing practices, poor quality controls, poor managerial and marketing skills, and little export experience are other major bottlenecks that have to be overcome to make the olive oil sector in Jordan competitive at international levels.

B. Recommendations:

The overall recommendation for the olive oil cluster in Jordan should be quality attainment. Other main recommendations are:

1. Adopt best harvesting practices:

Harvesting is one of the most important olive-growing operations. The correct choice of when to harvest affects the quality and quantity of the annual crop. The fruit should contain the maximum amount of oil and the oil obtained should be the best possible quality. The Critical Harvest Time (CHT) is reached when the green olives are turning color and start falling from the tree. Olives on the tree and olives fallen on the ground should never be mixed.

The harvest should be delivered to the mill daily. Lack of aeration, and any delay from piling, may lead to hydrolytic, lipolytic or oxidation processes that are damaging the oil quality.

It is always better to stack the olives in boxes or in small, even piles rather than putting them in sacks or piling them up high. The olives should be placed in strong, washable, plastic boxes for transportation from the orchard to the mill.

At the mill olives should be graded prior to processing. They should be separated according to variety or degree of maturity. Pest-damaged or diseased olives as well as jostled and badly bruised ones should be separated from healthy olives.

2. Encourage cooperative development:

Bringing growers together to organize olive harvest would facilitate the collection of the majority of olives at CHT guaranteeing best possible quality oil.

Growers should be encouraged to accept mixing their olives with those from other farmers to ensue mill efficiency.

3. Adopt best manufacturing and managerial practices:

Direct Support extended by Euro Jordanian Action for the Development of Enterprise (EJADA) to the Small and Medium Enterprises (SMEs) Component would address these issues.

4. Adopt and implement International Trade Standards:

The JISM should adopt international olive oil trade standards. The government should enforce compliance with these standards.

A national quality control system should be established by the Ministry of Industry and Trade (MoIT).

5. Develop modern olive oil storage capacity:

The best storage tanks to keep temperatures relatively constant are made of material that is inert to oil and protect the oil from air and light as much as possible. Covered underground tanks lined internally with vitrified tile are the most highly recommended. When kept indoors, good results are obtained with covered stainless steel tanks or steel-plated tanks lined with epoxy or similar resins that are safe for food use.

If the tanks are stored outdoors, they should be coated with an external lining to prevent extreme changes in temperature, which could harm the oil quality. In any case, the tanks should have slanted or conical bottoms that allow for drainage of accumulated impurities.

6. Upgrade laboratories to obtain international recognition:

Any laboratory applying for IOOC recognition must have the necessary installations and equipment to perform the chemical tests laid down in the trade standard. In addition, it must have properly trained staff with sufficient experience to perform the tests specified in the trade standard that laboratories are required to perform in the annual check tests organized by the Executive Secretariat.

The minimum equipment required to set up an olive oil testing laboratory is a capillary column gas chromatograph, a liquid-phase chromatograph, a spectrophotometer, glassware and necessary reagents. In general, fats and oils laboratories have such equipment, which varies in price depending on the make. For guidance, the costs could accumulate to € 66,000.

7. Set up an olive oil tasting panel:

When creating an olive oil tasting panel, the IOOC standards for selecting tasters, training the panel and setting up the testing room, have to be applied. These standards are attached to the method for the organoleptic assessment of virgin olive oil. How long it takes to set up a panel that has sufficient training to take part in the annual check tests, organized by the IOOC Executive Secretariat for recognition purposes, depends on the urgency of the expressed interest, on the sensory analysis grounding of the panel supervisor and his or her skill in training the panel. As a rule, about two years are necessary.

8. Launch a *National Olive Oil Benefits Awareness Campaign*:

In order to boost domestic olive oil consumption, a national campaign about the health, nutritional and gastronomic benefits of olive oil should be organized by the Jordanian authorities.

9. Create a high quality national olive oil brand:

As previously mentioned, olive oil is one of the healthiest edible oils in the global market and the basis of one of the best nutritional models today; the *Mediterranean Diet*. Linking olive oil to Jordan will enhance the image of the country as a whole and olive oil from Jordan can become the flagship of the Jordanian food industry. The Jordanian tourism industry would benefit as well from this linkage. Identifying the Jordanian gastronomy as *Mediterranean* will definitely add to Jordan's appeal as a travel destination.

Box 4.2: Olive Oil Cluster Analysis Impact:

The analysis was conducted with the aim of assessing and diagnosing the current situation, identifying existing shortcomings and deficiencies that hamper the performance of the cluster, and formulating an olive oil export strategy. Although a wide-ranging positive response was received from most parties involved, an export strategy cannot be effective and successful unless the problems facing the cluster are addressed.

With regards to the issue of standards and measures, the government effectively responded by changing the current Jordanian olive oil standards and adopted the international standards issued by the IOOC. Furthermore, EJADA intends to support and assist the MoA in establishing an Olive Oil Panel Test to accredit Jordanian olive oil. Similarly, the JISM intends to establish an accredited laboratory that conducts required chemical tests to certify the quality of Jordanian olive oil.

As a next step, an export strategy is set to capitalize on the above-stated amendments and enhance Jordanian olive oil exports. The strategy – formerly known as the National Export Strategy for Olive Oil – has been adopted by JEDCO. It entails the establishment of a consortium of Jordanian olive oil exporters, for which EJADA will be providing the necessary funding.