INTERNATIONAL OLIVE OIL PRODUCTION COSTS STUDY

INTERNATIONAL OLIVE OIL PRODUCTION COSTS STUDY: RESULTS, CONCLUSIONS AND RECOMMENDATIONS

International Olive Council, 2015

This study was commissioned by the IOC Council of Members. It has been conducted under the supervision of IOC Executive Director Jean-Louis Barjol and Deputy Director Ammar Assabah and the coordination of the Head of the IOC Statistics Department María Isabel Gómez, with the support of José María Penco (agronomist and project manager, Spanish Association of Olive Growing Municipalities (AEMO), Spain) and Juan Vilar (President, GEA Westfalia Separator Ibérica and lecturer at the University of Jaen, Spain). The study also benefited from the active collaboration of the experts designated by the IOC member countries.

1. INTRODUCTION

More than 11 million hectares of olives are grown in the world, spread across the five continents, two hemispheres and 47 countries where olive oil is currently produced. Olives grown for olive oil production are harvested from October to April in the northern hemisphere and from April to July in the southern hemisphere although 98 per cent of the world's olives are harvested in the Mediterranean region. There are approximately 12 000 olive oil mills in the world, more than 80 per cent of which use centrifugal systems. At present, olive oil is consumed in over 160 countries.

Taking the data for 2012 as a yardstick, olive oil production amounts to 3.1 million tonnes; this represents a 1.7 per cent share of total output of edible vegetable and animal fats (184 million tonnes).

These figures highlight the strategic economic importance of the olive oil sector and its influential position in the international arena in terms of production and consumption.

The objective of this study goes beyond merely determining the cost of producing one kilogram of olive oil in the IOC member countries. Its core aim is to help olive growers to identify the stages of crop management where they are less competitive than others and to encourage them to apply strategies to improve their competitiveness, for instance through technical assistance schemes. The study is therefore divided into five different sections. The first deals with the study methodology and addresses the different cultivation systems identified, how the survey was prepared (key questions for each stage of crop management), the analysis of the results and other aspects. A description is then given of olive oil production in the participant IOC member countries in the study. The study closes with a set of conclusions based on the analysis and interpretation of the contents and a number of final recommendations.

2. METHODOLOGY

The first step was to classify world olive growing into seven different cultivation systems, listed below, according to orchard density, slope and type of water use (rainfall or irrigation):

S1: Traditional rainfed on steep slopes

Rainfed orchards with a gradient > 20% and < 180 trees/ha

S2: Traditional irrigated on steep slopes

Irrigated orchards with a gradient > 20% and < 180 trees /ha

S3: Traditional rainfed on moderate slopes

Rainfed orchards with a gradient < 20% and < 180 trees/ha

S4: Traditional irrigated on moderate slopes

Irrigated orchards with a gradient < 20% and < 180 trees/ha

S5: Intensive rainfed

Rainfed orchards with 180–800 trees/ha

S6: Intensive irrigated

Irrigated orchards with 180–800 trees/ha

S7: Superintensive irrigated

Irrigated orchards with > 800 trees/ha

The IOC member countries that supplied data for the study account for 9,954,169 ha of world olive area, i.e. 89 per cent. This percentage ratifies the validity of the study sample for the purposes of simple random sampling.

After prior review of the existing literature, a data collection questionnaire was designed with the assistance of the study leaders who have extensive experience in similar preliminary surveys and diagnoses. Such questionnaires are a very reliable tool available to researchers for the description and analysis of populations that are so large as to make direct observation impossible.

To prevent bias and potential errors a pre-test was conducted; data were analysed, results were ratified and where necessary data were re-extracted, compared and analysed before being considered definitive.

The questionnaire covered the 2009/10, 2010/11, 2011/12 and 2012/13 crop years and was completed by the experts[1] designated by the member countries.

To arrive at the cost of producing one kilogram of olives, respondents were asked to detail the costs of *Fertilisation, Plant health protection, Soil management, Pruning, Harvesting* and *Irrigation* for each system (S1 to S7). When aggregated, the costs of each of these cultural practices represented direct costs.

Indirect costs were then added to direct costs (of which they were calculated as a percentage) to arrive at aggregate farm costs.

The next step was to add amortisation costs to farm costs, i.e. the opportunity cost of using the land or, put differently, of renting the land. In the case of the high-density systems (S6 and S7) amortisation costs included orchard establishment costs.

Farm costs were next aggregated with amortisation costs to give the total field cost of obtaining one kilogram of olives, itemised by cultivation system and country.

In another questionnaire, countries were requested to report oil yields in addition to olive transportation and oil processing costs.

Lastly, the cost of obtaining one kilogram of olives was converted into the cost of obtaining one kilogram of olive oil simply by taking into account olive transport and olive oil processing costs divided by processing oil yields in each system.

The outcome of the study is therefore the **cost of obtaining one kilogram of olive oil** in each cultivation system and country.

When all the data questionnaires had been completed and returned, they were processed and analysed and the diagnoses reported in the next section were compiled for each cultivation system and participant country.

3. DIAGNOSIS OF COSTS OF PRODUCTION BY COUNTRY

The outcome of the analysis and review of the data supplied in the questionnaires is now presented for each cultivation system and country.

[1] See list of experts attached in Annex 4

Data supplied by 15 IOC member countries accounting for 9,954,169 ha of world olive crop area have been taken into account. The respondents were specifically Albania, Algeria, Argentina, Greece, Italy, Iran, Israel, Jordan, Lebanon, Morocco, Portugal, Spain, Tunisia, Turkey, Spain and Uruguay. The remaining member countries – Egypt, Iraq, Libya, Montenegro and Syria plus Cyprus, Croatia, Malta and Slovenia inside the European Union – did not provide data. France did provide data but they were disregarded because they were incomplete and outliers.

Olive area broken down by country is reported in Table 1, attached in Annex 1.

According to the questionnaire data supplied by each country for the surface area under each cultivation system, the aggregate percentage share of each of the seven systems is as follows:

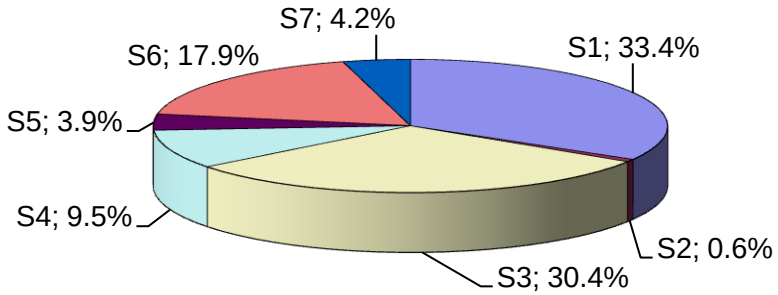

Figure 1: Distribution of total olive area by cultivation system

3.1.1. System S1: traditional rainfed on steep slopes

The S1 system is practised in 11 of the 15 countries covered in the study.

It concerns 3,326,736 ha of the total area under olives in the 11 countries, i.e. 33.4 per cent of their olive orchards. It is the leading cultivation system in terms of surface area although obviously not in terms of crop production.

Harvesting (46 per cent) is the chief direct cost, with fertilisation and soil management coming next.

The highest costs are reported for Algeria and Lebanon while the lowest costs are reported for Morocco (Figure 2).

Processing oil yields average 19.25 per cent.

The average all-country cost of producing one kilogram of olive oil under the S1 systems works out at EUR 3.44/kg.

Table 2 (Annex 1) provides a cost breakdown of cultural practices, in addition to processing oil yields, transport costs and processing costs.

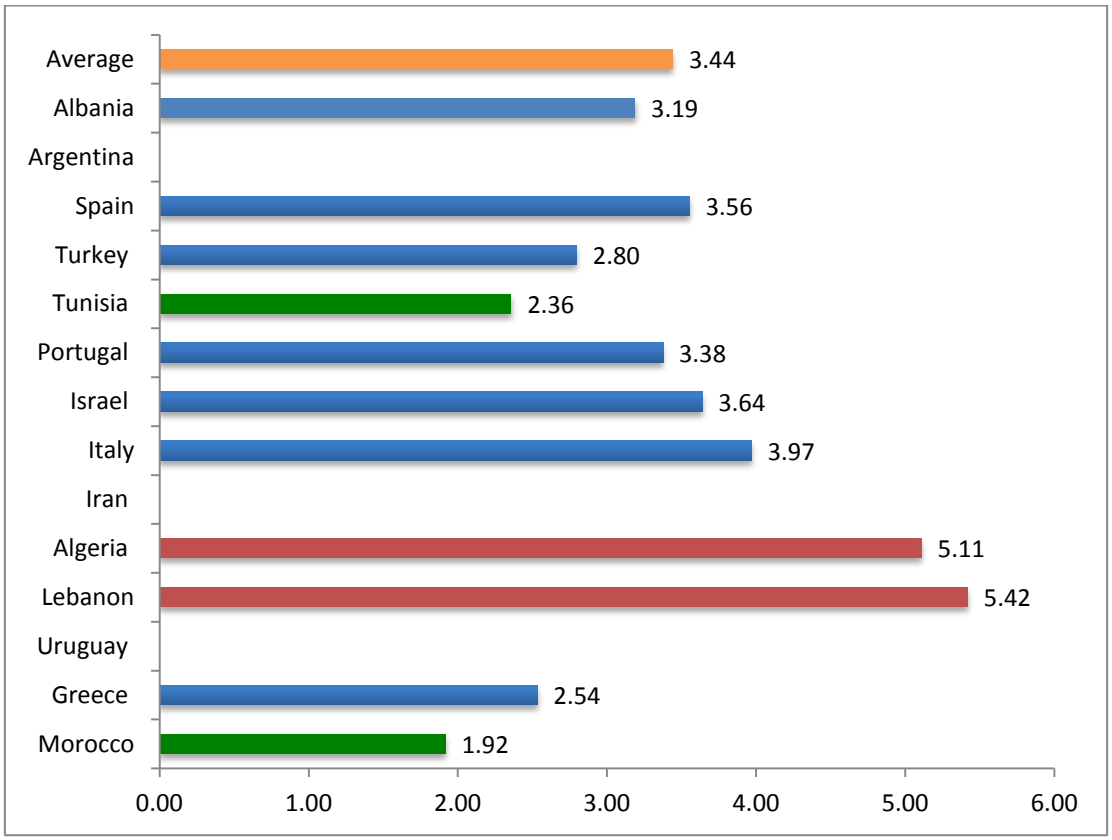

Figure 2: Cost of obtaining one kilogram of olive oil under the S1 system

3.1.2. System S2: traditional irrigated on steep slopes

The S2 system is practised in six of the 15 countries covered in the study where it accounts for no more than 64,498 ha equivalent to 0.6 per cent of their olive area.

Harvesting is the main direct cost (28 per cent), followed by fertilisation (21 per cent) and irrigation (19 per cent).

Iran and Morocco stand out in that costs are much higher than the average in the former and much lower in the latter (Figure 3).

Processing oil yields average 17.32 per cent, two points less than under the S1 system owing to the use of irrigation.

The cost of producing one kilogram of olive oil under the S2 system averages EUR 4.45/kg in these six countries.

Table 3 (Annex 1) itemises costs by cultural practice as well as oil yields, transport costs and processing costs.

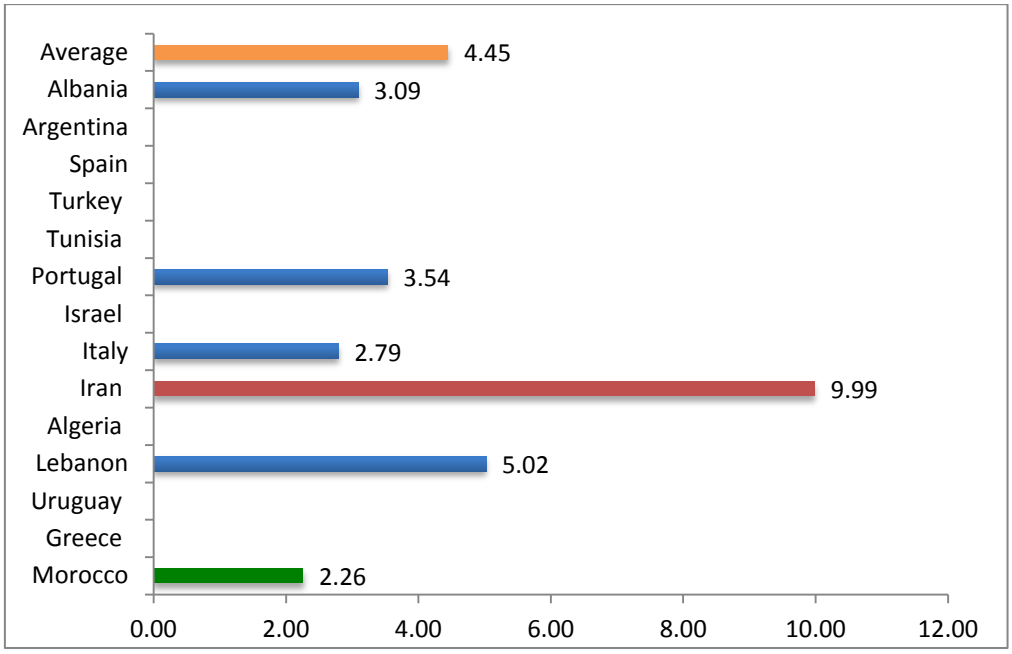

Figure 3: Cost of obtaining one kilogram of olive oil under the S2 cultivation system

3.1.3. S3 system: traditional rainfed on moderate slopes

The S3 system is practised in 12 of the 15 participant countries in the study where it is found on 3,023,340 ha or 30.4 per cent of their total olive area, which positions it as the second most frequent type of cultivation system.

The chief direct costs, in descending order, are harvesting (38 per cent), fertilisation (18 per cent) and pruning (14 per cent).

Compared with the average, costs in Lebanon are again high while they are low in Turkey and Morocco (Figure 4).

Processing oil yields average out at 20.28 per cent, the highest of all the cultivation systems reported.

Average all-country costs of producing one kilogram of olive oil work out at EUR 2.86/kg.

The cost breakdown of cultural practices is given in Table 4 (Annex 1) along with oil yields, transport costs and processing costs.

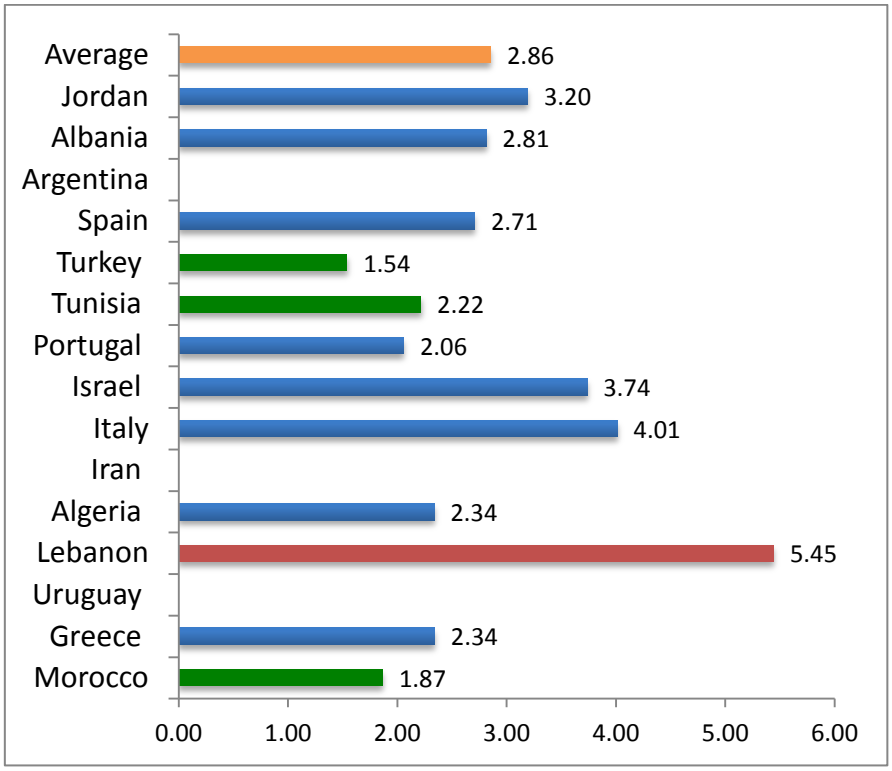

Figure 4: Cost of obtaining one kilogram of olive oil under the S3 cultivation system

3.1.4. System S4: traditional irrigated on moderate slopes

The S4 cultivation system is practised in 10 of the 15 participant countries and accounts for 943,762 ha or 9.5 per cent of their total olive area.

Direct costs are headed by harvesting costs (35 per cent), followed by irrigation (17 per cent) and fertilisation (16 per cent).

Costs are again very much above the average in Iran and Lebanon but below average in Turkey and Morocco (Figure 5).

Processing oil yields average 17.42 per cent and the all-country cost of producing one kilogram of olive oil comes to EUR 3.44/kg.

Table 5 (Annex 1) gives the costs itemised by cultural practice for this system, in addition to the oil yields and transport and processing costs.

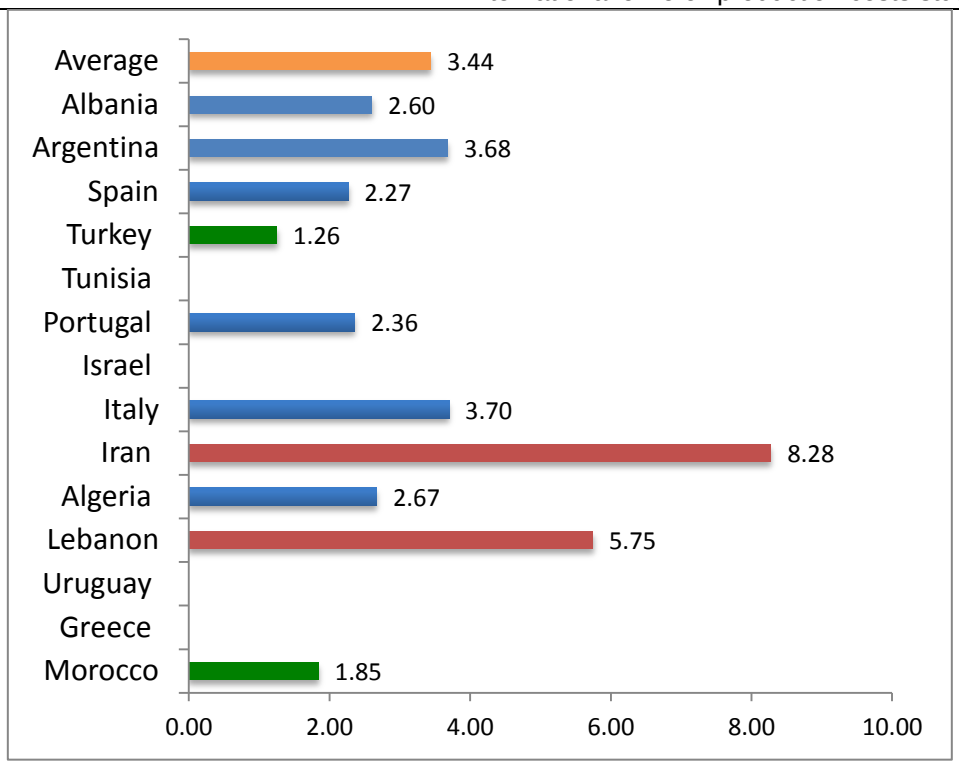

Figure 5: Cost of obtaining one kilogram of olive oil under the S4 system

3.1.5. System S5: intensive rainfed system

The S5 system is practised in eight of the 15 countries considered in the study. Strikingly, it appears to be the only system practised in Uruguay.

It is to be found on 388,240 ha of the olive area of the eight countries, i.e. on only 3.9 per cent of their total acreage.

Harvesting (38 per cent) is the top direct cost, with fertilisation (23 per cent) and pruning (15 per cent) coming behind.

The costs reported for Iran and Lebanon are notably higher than average while they are below average for Portugal. Although Turkey, Tunisia and Morocco have always recorded the lowest costs for the other cultivation systems this is not the case here because they did not report the S5 cultivation system for their countries (Figure 6).

Processing oil yields average 18.56 per cent.

The all-country average cost of obtaining one kilogram of olive oil under this system works out at EUR 3.50/kg.

Table 6 (Annex 1) provides the cost breakdown of cultural practices in addition to oil yields and transport and processing costs.

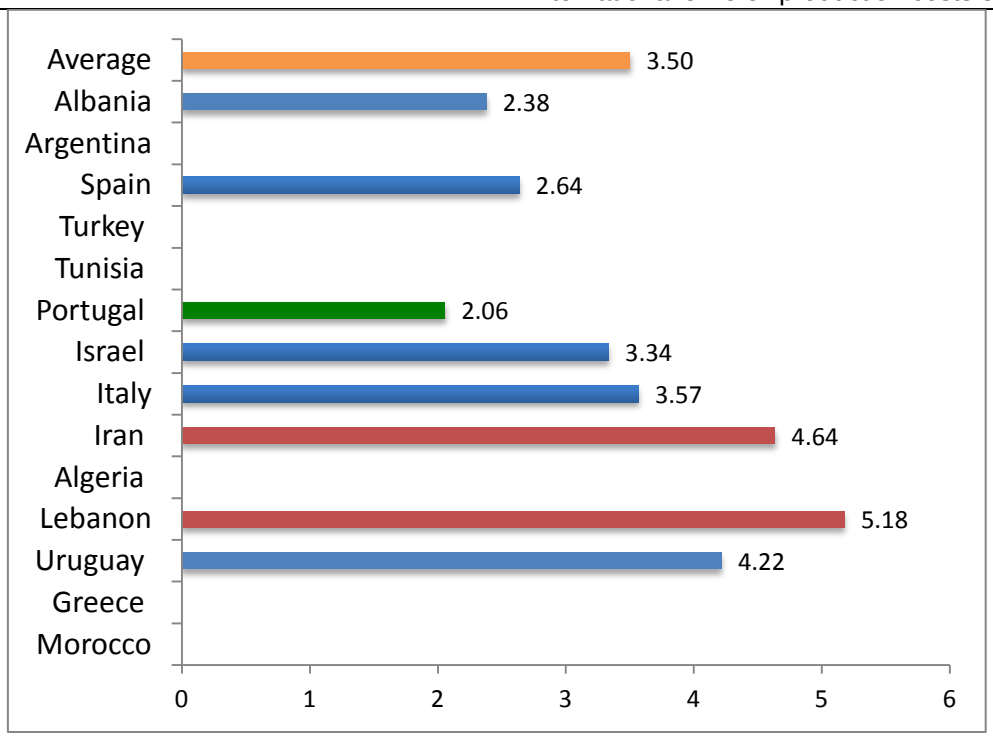

Figure 6: Cost of obtaining one kilogram of olive oil under the S5 system

3.1.6. System S6: intensive irrigated

Fourteen of the 15 participant countries provided data for this system, making it the most extensively practised of all the systems.

It accounts for 1,785,836 ha of the total olive area of the 14 countries concerned and represents a 17.9 per cent share of their total acreage, thus putting it in lead position among the high-density systems.

Harvesting is the chief direct cost (30 per cent), followed by irrigation (18 per cent). Fertilisation and pruning tie for third place (15 per cent each).

Once again, Iran and Lebanon are noteworthy on account of their higher-than-average costs while Tunisia and Portugal stand out because of their low costs (Figure 7).

Processing oil yields average 18.27 per cent.

The average all-country cost of obtaining one kilogram of olive oil under the S6 system comes to EUR 2.91/kg.

The cost breakdown of cultural practices is given in Table 7 (Annex 1) along with oil yields and transport and processing costs.

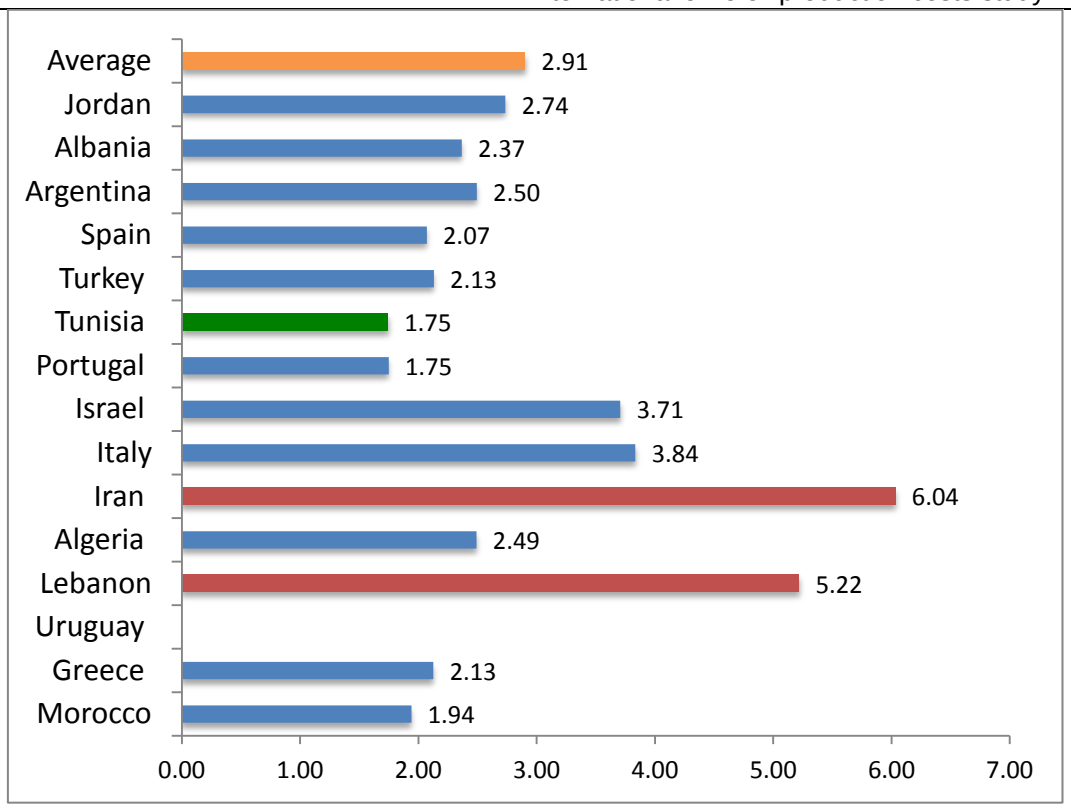

Figure 7: Cost of obtaining one kilogram of olive oil under the S6 system

3.1.7. System S7: superintensive irrigated

Data were supplied on this system by seven of the 15 participant countries.

It is practiced on 421,758 ha representing no more than 4.2 per cent of their total orchard area.

For the first time, although still in first place (22.5 per cent), harvesting costs are not so prominent, followed very closely by pruning (22.4 per cent) and irrigation (22.2 per cent). Soil management costs are strikingly low, accounting for no more than 6.2 per cent of total direct costs.

Amortisation costs are much higher than in the rest of the systems owing to the heavy cost of orchard establishment and orchard useful life.

Israel is noteworthy in terms of its high costs and Argentina because of its low costs (Figure 8).

Processing oil yields are the lowest of all the systems, averaging 17 per cent while the mean all-country cost of obtaining one kilogram of olive oil is EUR 2.09/kg.

Table 8 (Annex 1) gives the itemised cost of cultural practices together with oil yields and transport and processing costs.

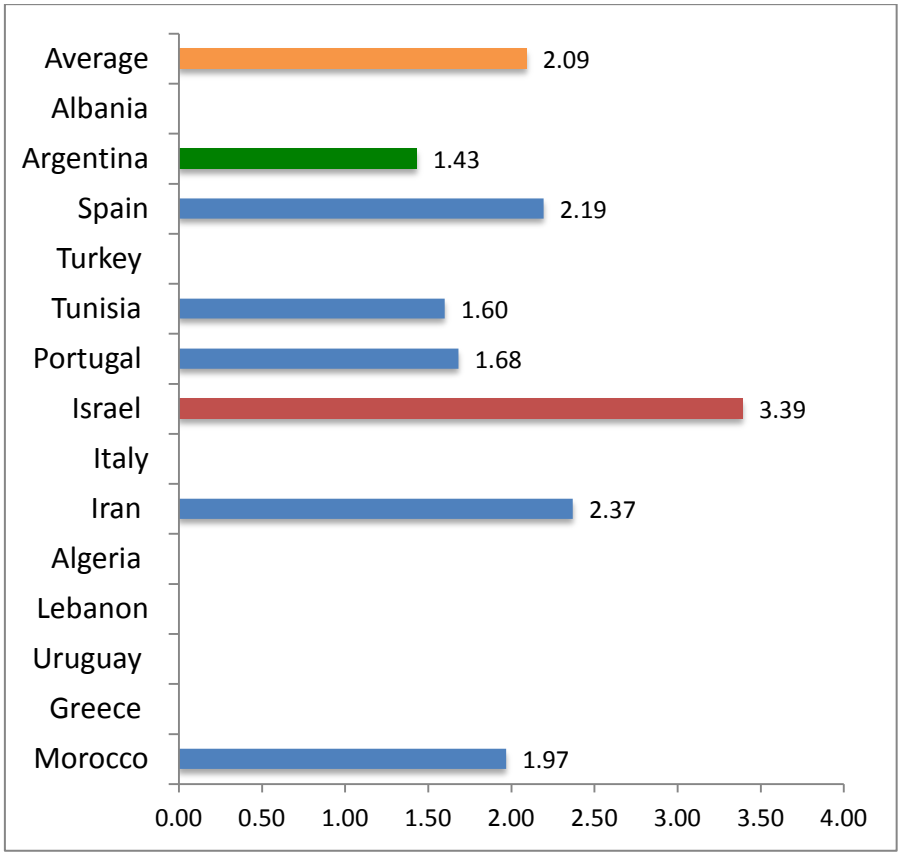

Figure 8: Cost of obtaining one kilogram of olive oil under the S7 system

3.1.8. Weighted results

For the final data analysis, the first step was to eliminate the two countries (Lebanon and Iran) whose data could be considered outliers or far removed from the average. This was intended to permit comparison, summarised by country and cultivation system.

Secondly, the area under each cultivation system in each country was taken into account to arrive at the average cost of producing one kilogram of olive oil per country. The end result is the real weighted cost for each IOC Member, as shown in the next graph:

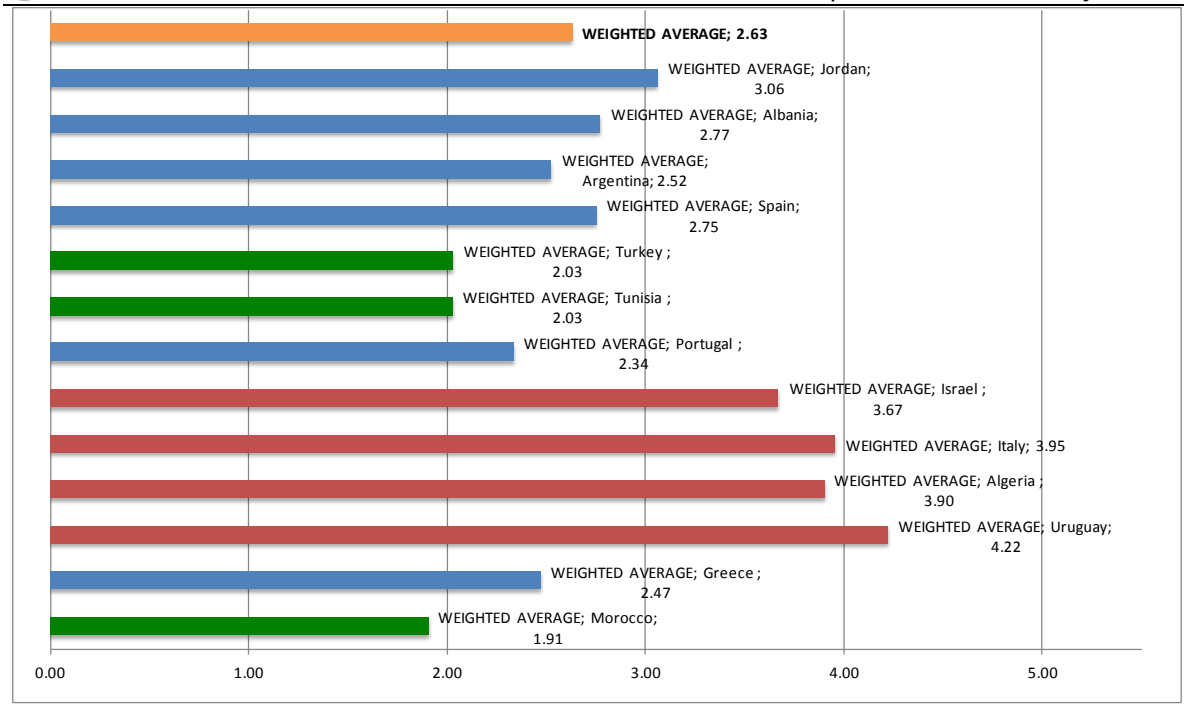

Figure 9: Cost of obtaining one kilogram of olive oil, weighted by country

For the purposes of calculating the total mean, the weighting of the olive area of each country relative to total orchard area was taken into account in such a way that the relative weight of Spain, for instance, was much higher than that of Israel. The end result of this exercise is an average olive oil production cost of EUR 2.63/kg.

The picture that emerges clearly shows three countries where costs are below-average, i.e. Tunisia, Morocco and Turkey, and four countries – Algeria, Uruguay, Italy and Israel – where costs of production are above-average, in addition to Lebanon and Iran which were eliminated from this last analysis because their costs were excessively high (Figure 9).

Average weighted costs after eliminating these last two countries are plotted by cultivation system in the next graph:

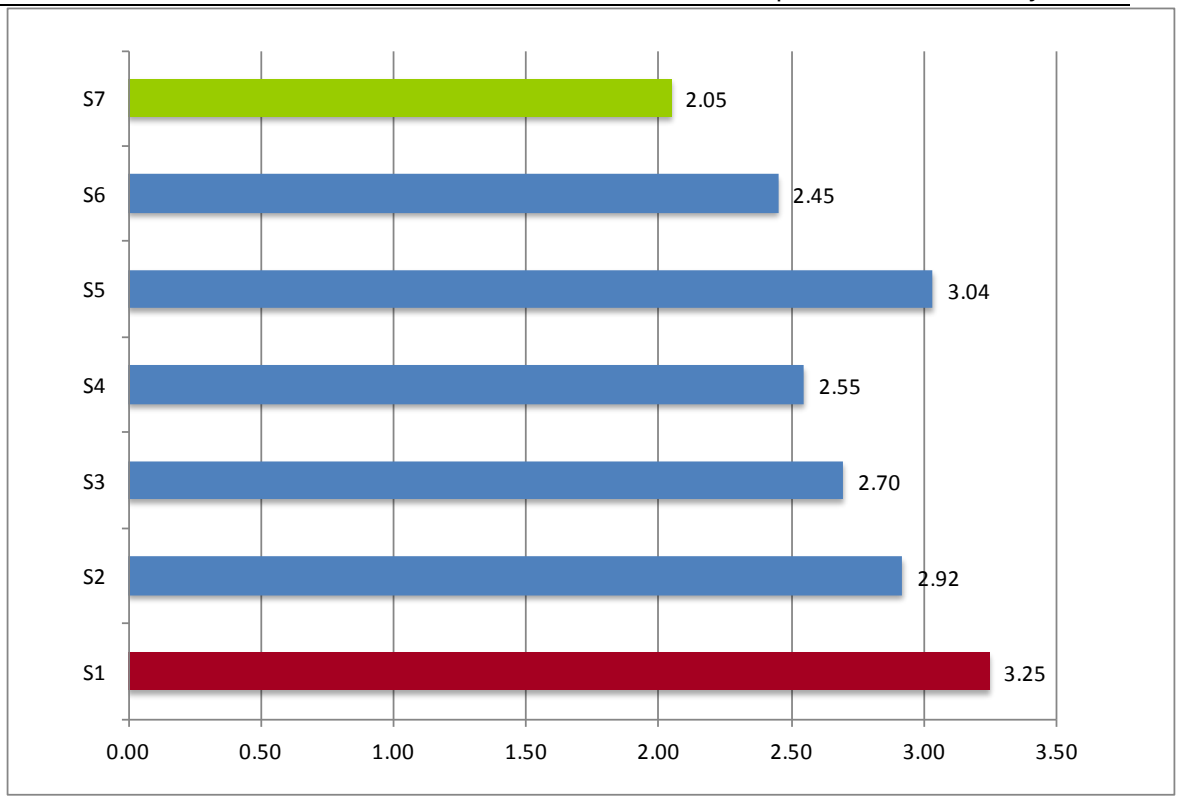

Figure 10: Cost of obtaining one kilogram of olive oil, weighted by cultivation system

As can be seen, weighted production costs in the S1 system (traditional rainfed on steep slopes) are noticeably higher whereas the opposite is the case of S7 (superintensive) where they are considerably lower.

4. CONCLUSIONS

General data

- ✓ Data have been analysed for 15 member countries of the IOC: Albania, Algeria, Argentina, Greece, Iran, Israel, Italy, Jordan, Lebanon, Morocco, Portugal, Spain, Tunisia, Turkey and Uruguay.
- ✓ Although France provided data, they have not been analysed because they were outliers and incomplete.
- ✓ The study defines seven cultivation systems into which all world olive orchards can be classified. Four of the systems are traditional (S1 to S4) and three are intensive (S5 to S7).
- ✓ Two categories of olive processing system are defined: modern centrifugation and traditional pressing.

Farm characteristics

- ✓ In the countries analysed 74 per cent of the olive orchards are cultivated under traditional systems and 26 per cent under intensive systems.
- ✓ The most frequent cultivation system in all the countries is the traditional rainfed system on steep slopes (S1: 33 per cent)), followed by the traditional rainfed system on moderate slopes (S3: 30 per cent) and the intensive irrigated system (S6: 18 per cent). The least frequent systems are the traditional irrigated system on steep slopes (S2: 0.6 per cent) and the superintensive system (S7: 4 per cent).
- ✓ Some countries have reported few cultivation systems such as Uruguay (1), Jordan (2), Greece and Argentina (3) while others have reported up to six (Albania, Italy, Lebanon, Morocco and Spain). Only Portugal has reported data for all seven systems although systems S2 and S4 are not representative in this country.
- ✓ Comparison of traditional and intensive systems shows that farms differ greatly in size and are larger in the second case.
- ✓ Drip irrigation is the predominant irrigation system. Water consumption is higher in the southern Mediterranean countries than in the northern Mediterranean European countries.
- ✓ Cultivation is less mechanised in the southern Mediterranean countries, except Israel.
- ✓ Local and autochthonous varieties predominate in the traditional cultivation systems whereas new varieties are preponderant in the intensive systems.

Production

- ✓ Oil yield is greater in the traditional olive growing countries in the southern Mediterranean region and much lower in the South American countries.
- ✓ Olive crop production under rainfed conditions is considerably higher in the eastern Mediterranean countries – the cradle of olive growing – than in the western Mediterranean countries.
- ✓ Oil production/ha increases with crop intensification and irrigation, showing a linear increase from S1 (370 kg/ha) to S7 (1,579 kg/ha).
- ✓ Average production, all systems and countries combined, works out at 816 kg oil/ha. The countries with the highest unit production are Israel, Albania and Algeria and those with the lowest are Italy, Iran, Morocco and Tunisia.

Costs of production

- ✓ Cultivation costs differ sharply between both the producing countries and the cultivation systems.
- ✓ The intensive and irrigated cultivation systems (S6 and S7) have the highest production costs/ha but also the highest production; as a result, unit costs are lower. Conversely, the more traditional and rainfed systems have higher unit production costs/kg olives, i.e. they are less profitable.
- ✓ On-farm olive production costs account for 84 per cent of the total cost of producing one kilogram of oil; olive transportation and processing account for the remaining 16 per cent. Attention therefore needs to focus on optimising agricultural production where is there is more room for improvement.
- ✓ At processing level, costs differ greatly between countries, ranging from EUR 0.16/kg crushed olives in Uruguay to EUR 0.03/kg in Spain, and are chiefly determined by average mill size.
- ✓ The average total cost of production of one kilogram of oil, itemised by cultivation system, ranges from EUR 3.45/kg in the traditional rainfed system on steep slopes (S1) to EUR 2.05/kg in the superintensive system (S7). Costs vary linearly between these two figures as crop intensification increases.
- ✓ The mean arithmetic cost of producing one kilogram of oil (all countries) works out at EUR 2.78/kg.
- ✓ Of this figure, EUR 2.33/kg are on-farm costs and EUR 0.45/kg are transport and oil processing costs.
- ✓ Taking into account the significance of the participant countries in terms of olive crop area, the mean world weighted cost of producing one kilogram of oil comes to EUR 2.63/kg.

- ✓ The countries where the average weighted costs are considerably above the mean are, in descending order, Iran, Lebanon, Algeria, Uruguay, Italy and Israel.
- ✓ The countries where average weighted costs are very far below the mean are clearly Morocco, Tunisia and Turkey.
- ✓ There are very wide cost differences between countries. The highest mean price is recorded in Iran (EUR 6.26/kg) and the lowest in Turkey (EUR 1.93/kg).
- ✓ Costs in Jordan, Albania, Argentina, Spain, Greece and Portugal lie around the world average.
- ✓ Generally, the countries where the cost of producing one kilogram of olive oil is the most advantageous are located in the southern and eastern Mediterranean region (specifically Morocco and Tunisia in North Africa, and Turkey). Olive cultivation can therefore be expected to expand in these countries in the future, either with domestic or foreign capital.
- ✓ Costs are inevitably higher in some producing countries for clear, concrete reasons, for instance because of higher water costs in Israel and low oil yields in Uruguay.
- ✓ There are major between-country differences in costs, even within the same cultivation systems. Apart from features specific to each country, this is due to differences in olive crop management practices. Hence, there is ample room for lowering costs in the countries where they are the highest through the transfer of technology and expertise and permanent training.

5. RECOMMENDATIONS

In the light of these conclusions, especially the last one, it is crucial to design strategies and create measures to enhance the competitiveness of the olive farms that are at the greatest disadvantage in the world, for instance through the following action:

- ✓ Converting S1, S2, S3 and S4 olive orchards to more intensive, mechanisable systems when the terrain, water availability and size so permit;

- ✓ Encouraging olive farms and olive oil mills to become more competitive through cooperative strategies such as integration or concentration

- ✓ Making better use of by-products and seeking new uses through research, development and technological evolution

- ✓ Enhancing the quality and distinctive characteristics of oils, especially oils obtained in systems S1, S2, S3 and S4

- ✓ Encouraging promotion as one of the most influential strategic tools for boosting the current trend of consumption and securing higher sales prices for olive oil on the basis of the resultant higher demand

- ✓ Viewing training and knowledge transfer as cost optimisation tools in countries with poor cost data where, according to this study, cultural practices do not appear to be the most adequate for generating returns

ANNEX 1

Tables reporting olive area and cost calculations by cultivation system

Table 1: Olive area in IOC member countries

Country	Olive area (ha)
Spain	2,584,564
Tunisia	1,839,600
Italy	1,350,000
Greece	1,160,000
Morocco	1,020,000
Turkey	798,493
Portugal	358,513
Algeria	330,000
Iran	136,619
Jordan	132,582
Argentina	100,000
Lebanon	53,646
Albania	47,152
Israel	33,000
Uruguay	10,000
Total	**9,954,169**

Table 2: Cost breakdown by country under the S1 traditional rainfed system of cultivation on steep slopes

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Average
Fertilisation	18	50		738	69		244	52	74	10	0	43		589	**172**
Plant protection	0	15		0	0		96	83	121	8	0	129		204	**60**
Soil management	14	10		614	96		53	167	80	30	0	244		107	**129**
Pruning	18	85		231	153		212	125	59	51	166	158		143	**127**
Harvesting	100	210		1,008	962		307	998	240	57	538	362		286	**461**
Irrigation	0	0		0	0		0	0	0	0	0	0		0	**0**
Direct costs	150	370		2,591	1,280		911	1,425	574	155	704	937		1,329	**948**
Indirect costs	12	2		65	192		0	47	57	39	0	94		150	**60**
Total costs	162	372		2,656	1,472		911	1,472	631	194	704	1,031		1,479	**1,008**
Amortisation costs	91	40		769	8		0	313	0	142	0	29		36	**130**
Total costs/ha	253	412		3425	1480		911	1785	631	336	704	1059		1514	**1137**
Production	900	1100		4000	1425		1721	2500	1000	730	3000	1437		3200	**1910**
Total costs kg olives	**0.28**	**0.37**		**0.86**	**1.04**		**0.53**	**0.71**	**0.63**	**0.46**	**0.23**	**0.74**		**0.47**	**0.58**
Yield (%)	17.50%	18.00%		20.00%	21.00%		16.10%	24.00%	20.00%	22%	11.10%	22.00%		19.00%	**19.15%**
Transport costs	0.015	0.017		0.100	0.010		0.010	0.035	0.004	0.022	0.016	0.015		0.050	**0.027**
Processing costs	0.040	0.065		0.128	0.025		0.100	0.125	0.040	0.036	0.060	0.030		0.083	**0.067**
Total costs kg oil	**1.92**	**2.54**		**5.42**	**5.11**		**3.97**	**3.64**	**3.38**	**2.36**	**2.80**	**3.56**		**3.19**	**3.44**

Table 3: Cost breakdown by country under the S2 traditional irrigated system on steep slopes

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Average
Fertilisation	29			546		344	347		74					589	**322**
Plant protection	0			0		172	91		155					204	**104**
Soil management	58			400		171	137		80					107	**159**
Pruning	55			215		400	375		59					143	**208**
Harvesting	140			1,282		326	229		240					314	**422**
Irrigation	214			446		208	550		178					114	**285**
Direct costs	495			2,889		1,620	1,729		786					1,471	**1,499**
Indirect costs	7			3		4	0		10					129	**25**
Total costs	502			2,892		1,625	1,729		796					1,600	**1,524**
Amortisation costs	91					0	0		0					36	**25**
Total costs/ha	593			2892		1625	1729		796					1636	**1545**
Production	1800			5500		1000	4962		1200					3600	**3010**
Total costs kg olives	**0.33**			**0.53**		**1.62**	**0.35**		**0.66**					**0.45**	**0.66**
Yield (%)	17.00%			15.00%		16.50%	16.41%		20.00%					19.00%	**17.32%**
Transport costs	0.015			0.100		0.014	0.010		0.004					0.050	**0.032**
Processing costs	0.040			0.128		0.010	0.100		0.040					0.083	**0.067**
Total costs kg oil	**2.26**			**5.02**		**9.99**	**2.79**		**3.54**					**3.09**	**4.45**

Table 4: Cost breakdown by country under the S3 traditional rainfed system on moderate slopes

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Jordan	Average
Fertilisation	23	255		738	188		252	167	70	18	0	29		589	300	**219**
Plant protection	0	260		162	624		88	217	86	17	0	63		525	100	**178**
Soil management	32	180		631	150		66	162	60	49	113	187		321	200	**179**
Pruning	14	180		238	123		262	625	46	38	116	115		143	120	**168**
Harvesting	105	470		925	615		271	1,377	240	63	348	288		336	400	**453**
Irrigation	0	0		0	0		0	0	0	0	0	0		0	0	**0**
Direct costs	173	1,345		2,694	1,700		938	2,547	502	184	577	682		1,914	1,120	**1,198**
Indirect costs	12	11		67	264		0	90	50	55	0	68		157	34	**67**
Total costs	185	1,356		2,761	1,965		938	2,636	552	239	577	750		2,071	1,154	**1,265**
Amortszation costs	132	200		769	18		0	313 -		103	0	43		36	0	**147**
Total costs/ha	317	1556		3530	1983		938	2949	552	342	577	793		2107	1154	**1400**
Production	1250	3240		4100	4350		1829	4000	1500	796.67	4000	1438		4600	1750	**2738**
Total costs kg olives	**0.25**	**0.48**		**0.86**	**0.46**		**0.51**	**0.74**	**0.37**	**0.43**	**0.14**	**0.55**		**0.46**	**0.66**	**0.49**
Yield (%)	16.50%	24.00%		20.00%	21.00%		15.52%	24.00%	20.00%	22.00%	14.28%	22.00%		21.00%	22.00%	**20.19%**
Transport costs	0.015	0.017		0.100	0.010		0.010	0.035	0.004	0.022	0.016	0.015		0.050	0.01	**0.025**
Processing costs	0.040	0.065		0.128	0.025		0.100	0.125	0.040	0.036	0.060	0.030		0.083	0.03	**0.064**
Total costs kg oil	**1.87**	**2.34**		**5.45**	**2.34**		**4.01**	**3.74**	**2.06**	**2.22**	**1.54**	**2.71**		**2.81**	**3.20**	**2.86**

Table 5: Cost breakdown by country under the S4 traditional irrigated system on moderate slopes

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Average
Fertilisation	25			396	356	323	261		86		90	64	453	589	264
Plant protection	5			162	536	164	83		86		36	128	130	525	185
Soil management	32			250	112	145	73		60		113	160	70	321	134
Pruning	77			227	184	360	334		46		116	200	251	143	194
Harvesting	238			1,388	676	359	262		240		348	584	1,107	350	555
Irrigation	264			538	244	183	486		183		137	240	327	114	272
Direct costs	641			2,961	2,109	1,534	1,498		701		840	1,376	2,338	2,043	1,604
Indirect costs	38			74	264	77	0		70		0	138	0	157	82
Total costs	680			3,035	2,373	1,611	1,498		771		840	1,514	2,338	2,200	1,686
Amortisation costs	227			769	28		0				0	120	0	36	147
Total costs/ha	907			3804	2401	1611	1498		771		840	1634	2338	2236	1804
Production	3500			6000	5380	1200	2942		1800		4800	4000	8000	5400	4302.2
Total costs kg olives	**0.26**			**0.63**	**0.45**	**1.34**	**0.51**		**0.43**		**0.18**	**0.41**	**0.29**	**0.41**	**0.49**
Yield (%)	17.00%			15.00%	18.00%	0.17	16.73%		20.00%		20.00%	20.00%	0.10	21.00%	17.42%
Transport costs	0.015			0.100	0.010	0.01	0.010		0.004		0.016	0.015	0.02	0.050	0.03
Processing costs	0.040			0.128	0.025	0.01	0.100		0.040		0.060	0.030	0.06	0.083	0.06
Total Cost kg Oil	**1.85**			**5.75**	**2.67**	**8.28**	**3.70**		**2.36**		**1.26**	**2.27**	**3.68**	**2.60**	**3.44**

Table 6: Cost breakdown by country under the S5 intensive rainfed system

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Average
Fertilisation			664	815		323	392	167	385			60		589	**424**
Plant protection			156	0		164	127	217	80			132		525	**175**
Soil management			308	627		145	93	162	105			324		321	**261**
Pruning			164	269		360	309	625	96			210		143	**272**
Harvesting			801	1,162		359	389	1,922	240			510		350	**717**
Irrigation			0	0		0	0	0	0			0		0	**0**
Direct costs			**2,093**	**2,873**		**1,351**	**1,309**	**3,092**	**906**			**1,236**		1,929	**1,849**
Indirect costs			105	72		67	0	68	91			124		164	**86**
Total costs			**2,198**	**2,945**		**1,419**	**1,309**	**3,159**	**997**			**1,360**		2,093	**1,935**
Amortisation costs			123	692		0	0	521	0			90		36	**183**
Total costs/ha			**2320**	**3637**		**1419**	**1309**	**3680**	**997**			**1450**		2129	**2118**
Production			10000	4500		1750	2849	6000	2500			3000		6200	**4600**
Total costs kg olives			**0.23**	**0.81**		**0.81**	**0.46**	**0.61**	**0.40**			**0.48**		**0.34**	**0.52**
Yield (%)			10.00%	20.00%		18.00%	15.95%	23.00%	21.50%			20.00%		20.00%	**18.56%**
Transport costs			0.030	0.100		0.014	0.010	0.035	0.004			0.015		0.050	**0.032**
Processing costs			0.160	0.128		0.010	0.100	0.120	0.040			0.030		0.083	**0.084**
Total costs kg Oil			**4.22**	**5.18**		**4.64**	**3.57**	**3.34**	**2.06**			**2.64**		**2.38**	**3.50**

Table 7: Cost breakdown by country under the S6 intensive irrigated system

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Jordan	Average
Fertilisation	110	390		677	464	453	523	292	182	175	123	102	254	589	600	**352**
Plant protection	141	370		0	1,032	229	101	425	601	45	279	272	130	525	200	**311**
Soil management	68	200		442	374	203	129	135	131	20	120	204	73	321	300	**194**
Pruning	145	255		385	275	505	425	1,250	63	112	265	408	251	143	250	**338**
Harvesting	429	680		1,195	1,159	502	328	1,000	688	202	796	765	780	357	700	**684**
Irrigation	372	375		885	167	256	360	1,260	307	85	268	476	204	114	600	**409**
Direct costs	**1,265**	**2,270**		**3,584**	**3,470**	**2,147**	**1,866**	**4,362**	**1,972**	**640**	**1,851**	**2,227**	**1,692**	2,050	2,650	**2,289**
Indirect costs	88	23		90	587	107	0	189	197	128	0	223	184	164	80	**147**
Total costs	**1,353**	**2,293**		**3,674**	**4,056**	**2,255**	**1,866**	**4,551**	**2,169**	**768**	**1,851**	**2,450**	**1,876**	2,214	2,730	**2,436**
Amortisation costs	386	300		769	76	0	0	521	0	209	0	340	0	36	0	**188**
Total costs/ha	**1739**	**2593**		**4443**	**4132**	**2255**	**1866**	**5072**	**2169**	**977**	**1851**	**2790**	**1876**	2250	2730	**2624**
Production	6550	5500		8000	12187	2250	3611	10000	8000	3000	5280	8500	5800	6600	6000	**6520**
Total costs kg olives	**0.27**	**0.47**		**0.56**	**0.34**	**1.00**	**0.52**	**0.51**	**0.27**	**0.33**	**0.35**	**0.33**	**0.32**	**0.34**	**0.45**	**0.43**
Yield (%)	16.50%	26.00%		15.00%	15.00%	17.00%	16.34%	17.00%	18.00%	22.00%	20.00%	18.00%	16.00%	20.00%	0.18	**18.20%**
Transport costs	0.015	0.017		0.100	0.010	0.014	0.010	0.035	0.004	0.022	0.016	0.015	0.016	0.050	0.01	**0.024**
Processing costs	0.040	0.065		0.128	0.025	0.010	0.100	0.088	0.040	0.036	0.060	0.030	0.060	0.083	0.03	**0.057**
Total costs kg oil	**1.94**	**2.13**		**5.22**	**2.49**	**6.04**	**3.84**	**3.71**	**1.75**	**1.75**	**2.13**	**2.07**	**2.50**	**2.37**	**2.74**	**2.91**

Table 8: Cost breakdown by country under the S7 superintensive irrigated system

	Morocco	Greece	Uruguay	Lebanon	Algeria	Iran	Italy	Israel	Portugal	Tunisia	Turkey	Spain	Argentina	Albania	Average
Fertilisation	159					647		292	582	359		114	254		**344**
Plant protection	295					327		425	441	45		304	130		**281**
Soil management	150					290		135	75	36		228	73		**141**
Pruning	51					721		1,458	624	123		456	104		**505**
Harvesting	264					718		923	260	287		570	537		**508**
Irrigation	682					366		1,052	373	148		532	204		**479**
Direct costs	**1,601**					**3,068**		**4,286**	**2,355**	**999**		**2,204**	**1,302**		**2,259**
Indirect costs	240					153		182	236	300		220	184		**216**
Total costs	**1,841**					**3,221**		**4,468**	**2,591**	**1,299**		**2,424**	**1,486**		**2,476**
Amortisation costs	500					0		521 -		479		380	0		**313**
Total costs/ha	**2341**					**3221**		**4989**	**2591**	**1778**		**2804**	**1486**		**2744**
Production	9000					8000		11000	10000	8000		9500	9700		**9314**
Total costs kg olives	**0.26**					**0.40**		**0.45**	**0.26**	**0.22**		**0.30**	**0.15**		**0.29**
Yield (%)	16.00%					18.00%		17.00%	18.00%	17.50%		15.50%	16.00%		**16.86%**
Transport costs	0.015					0.014		0.035	0.004	0.022		0.015	0.016		**0.017**
Processing costs	0.040					0.010		0.088	0.040	0.036		0.030	0.060		**0.043**
Total costs kg oil	**1.97**					**2.37**		**3.39**	**1.68**	**1.60**		**2.19**	**1.43**		**2.09**

ANNEX 2

Methodological notes

Annex 2

Methodological notes and comments of the participant IOC member countries in the study

Methodological notes for the production costs study:

1. *Stage I: Field Costs*. Countries were instructed to provide data for at least 10 olive farms for each cultivation system. Farms had to be representative of different areas in the country and data had to be the averages of at least three crop years.

2. *Stage II: Transport and Oil Processing Costs*. Countries were instructed to supply representative data for each type of mill (traditional, continuous and mixed), which could be obtained from mill organisations or via direct surveying of mills, in order to obtain a representative sample of the different areas in the country.

Methodological notes or comments of each country:

ALBANIA:

- Predominant varieties: White Olive (S1, S2), Kalinjot (S3, S4), Leccino (S5) and Frantoio (S6).
- All harvesting is considered to be by hand.

ALGERIA:

- Oil-olive crop yields provided on the basis of the five crop years from 2007/08 to 2011/12.
- Oil processing costs are calculated as the average market price charged by private olive oil mills.
- By-products are used by olive growers but are not sold.

ARGENTINA:

- Predominant varieties: Arauco (S4) and Arbequina (S6 and S7).

SPAIN:

- Field costs are the average of the three crop years from 2009/10 to 2011/12.
- Varieties: Arbequina, Koroneiki, Arbosana and Xiquitita (S7).
- Farms across the whole country are taken into account.
- Transport and oil processing costs are the averages of costs in different areas of Spain because they vary considerably according to average mill size.
- Oil processing costs are calculated for a standard mill with a crushing capacity of 10 million kg of olives.

GREECE:

- Varieties: numerous local varieties (S2) and Koroneiki (S3 and S6).
- No price can be given for by-products because they are not sold.

IRAN:

- Varieties: Zard (traditional systems) and Koroneiki and Roghani (high-density orchards).
- All harvesting is considered to be by hand.

ITALY:

- Mill cost data are for the 2013/14 crop year.
- Average oil processing costs vary according to area (higher in northern Italy).
- The costs of two-phase pomace vary depending on whether or not the stones have been removed.

LEBANON:

- Predominant varieties: Baladi, Abou chwkeh, Balah and Kalbe el tair.
- Harvesting is considered to be by hand in all the cultivation systems.
- Geographical information systems have been used to identify the surface area under each cultivation system.

MOROCCO:

- Data are the averages of eight farm surveys per cultivation system.
- Data for the 2011, 2012, 2013 and 2014 crop years are taken into account.
- Regions covered in the study: Marrakech, Meknes, Taounate, Khenifra, Azuilal, Taourirte, Essaouira, Beni Mellal, Missour and Berkane.
- All harvesting is considered to be by hand, except in S7.
- Predominant varieties: Picholine marocaine (S1, S2, S3, S4 and S6), Haouzia, Menara and Picholine de Languedoc (S3, S4, S5 and S6), and Arbequina, Arbosana and Koroneiki (S7).
- S7 is the only system in which harvesting is fully mechanised; in all the other cultivation systems it is manual.

PORTUGAL:

- Varieties: Galega, Cordovil and Verdeal (traditional systems) and Picual, Verdeal, Cobrancosa, Arbequina and Arbosana (high-density systems).
- No prices for by-products.
- Farms across the whole country are taken into account.
- Field costs are the average of the three crop years from 2009/10 to 2011/12.

TUNISIA[2]:

- Data for the 2012/13 and 2013/14 crop years are taken into account.
- Varieties: Chetoui and Chelibi (S1), Chemlali Sfax, Chemlali Sahli and Zalmati (S3), Chemlali (S6) and Arbequina (S7).
- In Stage II, no information is provided on olive stones as a by-product because the stones are only separated from the flesh when required for export shipments.

TURKEY:

- Predominant varieties: Gemlik, Memecik, Domat and Ayvalık.
- It is estimated that 75% of olive production goes for olive oil and 25% for table olive processing.
- As a rule, olives for oil production are grown in the southern regions while table olives are produced in the northern regions.
- Transport and oil processing costs are the averages of costs in different areas of Turkey.

URUGUAY[3]

- Owing to the incipient nature of olive development in Uruguay, the cost data provided are not official statistics but preliminary data indicative of trends.
- Field cost data refer to the theoretical costs of a standard 35-ha olive farm established on a 7x5 layout growing the Arbequina variety under the S5 system (the only system considered). The trees are eight years old; hence, harvesting is not fully mechanised.
- Transport and oil processing costs have been supplied by the Uruguay Olive Producers Association (ASOLUR); they are not statistics.
- Processing facilities are dual-purpose and are not dedicated solely to olive oil production.

[2] See attached supplementary methodological notes, pages 28-29, (to be translated for final publication of the study)

[3] See attached supplementary methodological notes, pages 30-33, (to be translated for final publication of the study)

AMPLIFIED METHODOLOGICAL NOTES – TUNISIA (French original)

I. Considérations générales

Le secteur oléicole tunisien présente une structure particulière caractérisée par le nombre élevé d'intermédiaires et la dominance des structures de production de petite taille et non organisées en coopératives. Les agriculteurs peuvent ainsi, vendre soit des olives à huile à des intermédiaires ou directement aux huileries comme ils ont la possibilité de faire la trituration de leur propre production et vendre par la suite l'huile d'olive obtenue. Ces stratégies adoptées par les agriculteurs dépendent essentiellement des prix de l'huile d'olive. En effet, pendant les campagnes où les prix sont élevés, la plupart des agriculteurs optent par vendre des olives à huile au lieu de faire la trituration. Par contre au cours les années de faible prix, les agriculteurs font recours à la trituration, comme ça ils augmentent leurs chances d'avoir plus de bénéfice.

En Tunisie, les oléiculteurs suivent régulièrement les prix des olives à huile essentiellement ceux du « Souk Gremda » qui est un marché de vente des olives à huile situé à Sfax. Ce marché des olives à huile est reconnu en Tunisie en tant qu'un véritable baromètre des cours des prix pour les producteurs du secteur oléicole.

Actuellement, on ne dispose pas de données exactes sur la répartition des oléiculteurs qui optent pour la vente des olives à huile aux intermédiaires ou aux huileries et ceux qui optent pour la trituration de leur production. En principe cette proportion est très variable d'une campagne à une autre. Nonobstant **le ministère de l'agriculture affirment que la proportion des agriculteurs qui optent pour la vente des olives à huile au lieu de l'huile d'olive peut atteindre 70% les années correspondantes à des prix élevés.** Cette pratique contribue à l'enchérissement du coût de production de l'huile d'olive.

Ces particularités du secteur oléicole tunisien nous ramènent à prendre en considération à deux types de coût de production :

1. Le coût de l'huile d'olive à la production (sans intermédiaires : coûts des olives à huile à l'exploitation + frais de trituration)
2. Le coût de l'huile d'olive à la sortie des huileries ((Coût de la matière première (Prix moyen des olives) + coût de trituration)

Les rectifications par rapport au travail envoyé auparavant au COI ont concerné :

1. Le coût de l'huile d'olive à la production : on a élargie l'échantillon et on a travaillé avec des exploitations du centre (Sousse) avec la variété Sahli et du sud Tunisien (Médenine) avec la variété Zalmati.
2. Le coût de l'huile d'olive à la sortie des huileries : on a considéré les prix des olives du marché de Gremda pendant les deux campagnes de l'étude : 2012/2013 et 2013/2014.

II. Note conceptuelle

1. Méthode et hypothèses de travail

La méthodologie adoptée pour l'étude des coûts de production des olives à huile a été basée sur deux approches : la première d'ordre descriptive et repose sur la réalisation des enquêtes et la deuxième d'ordre normative et elle repose sur les bonnes pratiques que l'agriculteur doit adopter. La deuxième approche a servi comme outil de correction de la première phase du travail. Il est à signaler également que le travail a concerné uniquement l'oliveraie productive (olivier en pleine production).

Vu la spécificité du secteur oléicole notamment le manque d'intégration au niveau de la chaîne de valeur: deux types de coût de production ont été calculé: le coût de l'huile d'olive à la production et le coût de l'huile d'olive à la sortie des huileries.

L'étude a pris en considération les deux campagnes oléicoles : 2012/2013 et 2013/2014

1.1 Les systèmes de production étudiés et leurs caractéristiques

1. **Système S_1 :** Exploitations traditionnelles pluviales en forte pente (Nord de la Tunisie) ; Olivier en pleine production, variété Chetoui et Cheiibi. Zone Siliana.
2. **Système S_3 :** Exploitations traditionnelles pluviales en pente modérée (Sfax, Sahel et Sud de la Tunisie) ; Olivier en pleine production, variétés : Chemlali Sfax, Chemlali Sahli et Zalmati. Zone : Sfax, Sousse et Médenine.
3. **Système S_6** : Exploitations de type intensif irrigué ; Olivier en pleine production, variété chemlali, 204 pieds/ha (Sfax)
4. **Système S_7** : Exploitations de type hyper-intensif irrigué ; Olivier variété arbequina. Zone de Zaghouan et Gafsa.

1.2. Enquêtes réalisées et zones étudiées

83 enquêtes ont été réalisées dans 6 zones différentes. Les zones sont : Siliana, Sousse, Sfax, Zaghouan, Gafsa et Médenine.

1.3. Prix des olives à huile

Les prix des olives à huile qui ont été pris en considération sont les prix des olives de « Souk Gremda » pour les campagnes d'étude (2012/2013 et 2013/2014).

Tableau 1. Prix des olives à huile en DT (2012/2013 et 2013/2014)

	2012/2013	2013/2014
Prix min	**0,5**	**0,6**
Prix Max	**1,45**	**1,25**
Prix moyen	**0.962**	

III. Récapitulation des résultats

1. Cas des agriculteurs-oléiculteurs (chaîne de valeur intégrée)

Tableau 2. Coût de production olive à huile par système de production

Système de production	Coût olive à huile (DT)			
	Moyen	Sfax (Variété Chemlali)	Sahel (Variété Sahli)	Sud (Variété Zalmati)
Système S1	1.026			
Système S3	0.935*	0.815	0.969	1.107
Système S6	0.725			
Système S7	0.495			

*Moyenne considérant la contribution de chaque zone à la production totale

2. Cas des huileries (chaîne de valeur non intégrée)[4]

Tableau 3. Coût huile d'olive au niveau des huileries (moyen 2012/2013 et 2013/2014)

	Dt/kg d'olive	Dt/Kg huile d'olive
Coût matière première (olive à huile)	0,962	4,372
Coût trituration et transport	0,14	0,636
Coût total par kg d'huile d'olive	***	**5,009**

[4] Selon le Ministère de l'Agriculture, la proportion des huiles provenant de ce genre de pratique peut atteindre 70% de la production totale

AMPLIFIED METHODOLOGICAL NOTES – URUGUAY (SPANISH ORIGINAL)

Notas metodológicas a las estadísticas de Costos de Producción presentadas por Uruguay en el Grupo de Trabajo Costes de Producción del COI Montevideo. Octubre 2014

Lic. Ec. María Eugenia Silva Carrazzone; Lic. Ec. Felipe Bertamini; Ing. Agr. Humberto Tommasino

Introducción

El 19 de mayo y 20 de octubre de 2014 se desarrollaron en la sede del Consejo Oleícola Internacional (COI), en Madrid, la segunda y tercera reunión del Grupo de Expertos sobre Costes de Producción. En la primera de ellas se trataron las estadísticas por país de costes de aceituna para aceite de oliva (a pie de parcela) y en la segunda, costes de transporte y procesamiento en almazara (denominadas Fase I y Fase II respectivamente).
Uruguay comenzó a participar de este grupo de trabajo en la instancia del 19 de mayo. En ambas instancias Uruguay presentó datos de costos de producción referidos a cada una de las fases antes mencionadas.
En vistas de la presentación de la información procesada en el Grupo de Trabajo a las autoridades del COI, el presente documento tiene por objetivo dejar constancia de las cuestiones metodológicas que subyacen a la información presentada, a los efectos de su consideración al momento de analizar, comparar e interpretar los datos.

Aspectos metodológicos generales

En virtud del incipiente grado de desarrollo del sector olivícola en Uruguay, las estadísticas presentadas en el Grupo de Trabajo de Costes de Producción son preliminares e indicativas de tendencias.
La información puede no ser exacta en cuanto se confecciona con información aportada en forma voluntaria por el sector privado y/o estimaciones. **Es fundamental hacer constar que no se trata de estadísticas oficiales.**
Se considera que en Uruguay solamente se desarrolla la producción en el sistema 5, de tipo intensivo de secano.
Actualmente se encuentran en desarrollo un estudio de caracterización y aproximación a los costos de producción de aceitunas para aceite, realizado por la Facultad de Agronomía de la Universidad de la República Oriental del Uruguay. Adicionalmente se están procesando los datos del Censo General Agropecuario realizado por la División de Estadísticas Agropecuarias del Ministerio de Ganadería, Agricultura y Pesca (DIEA MGAP). Esta información, conjuntamente con encuestas específicas, permitiría disponer de estadísticas rigurosas para próximas campañas de producción.

Aspectos metodológicos referidos a costes de producción de aceitunas a pie de parcela (Fase I)

La información presentada correspondiente a esta fase refiere a **costos teóricos** (y no a los efectivamente constatados) de un establecimiento de las siguientes características:

- Extensión media de 35 ha
- Densidad media: 300 – 350 plantas por ha
- Cuadros de 7 x 5
- Producción media anual: 10 ton/ ha
- Rendimiento graso medio industrial sobre materia húmeda: 15%
- Principal variedad: Arbequina
- Edad media del monte: 8 años

AMPLIFIED METHODOLOGICAL NOTES – URUGUAY (SPANISH ORIGINAL)

Se consideran los costos correspondientes a las siguientes **tareas culturales**:

- 3 cortes de pasto – malezas por año
- 3 aplicaciones de herbicida por año
- 4 a 5 aplicaciones foliares por año, dependiendo de las condiciones de lluvias
- 3 abonos de suelo por año
- 2 podas por año
    - o 1 en verano para desvaretar
    - o 1 en invierno, de formación, fructificación, renovación, etc.
- Cosecha

Para estimar el **costo de oportunidad** se sigue el criterio convenido en la reunión de Mayo 2014: Valor de la renta de la tierra. Se combinan dos enfoques:

i. Valor de la tierra en los **departamentos** en los que se concentra la producción olivícola (Colonia, Rocha, Maldonado, Treinta y Tres, Salto y Lavalleja). En este valor influyen aspectos como localización cercana a centros turísticos, que distorsionan el valor de la tierra para fines agropecuarios. Dicho valor medio se sitúa en US$ 140 / ha / año en 2013.

ii. Valor de la tierra para **usos alternativos al olivo**. Se considera valor para uso agrícola / ganadera, en función de la aptitud media del suelo en esos departamentos, que se ubica en US$ 170 /ha /año en 2013 **(1).**

El costo imputado corresponde al promedio simple de ambos valores de referencia, siendo de US$ 155 /ha /año para 2013.

A continuación se presenta el cuadro de síntesis con los costos correspondientes a la Fase I.

Cuadro 1. Resumen de costos de producción de aceitunas a pie de parcela.

	Coste de la mano de obra/ha	Coste de compra de inputs agrarios/ha	Coste de maquinaria/ha	Coste total/ha
Fertilizantes	53.4	671.8	114	**839.2**
Tratamientos fitosanitarios	110.4	63.2	24	**197.6**
Mantenimiento suelo (cubierta, laboreo, herbicida, desbrozadora)	54.6	43.8	290.4	**388.8**
Poda, eliminación residuos y desvareto	141.5		66.4	**207.9**
Recolección	52		960	**1012.0**
Total costes directos	**411.9**	**778.8**	**1454.8**	**2645.5**
Costes indirectos (%)				**5%**
Total costes indirectos				**132.3**
Total costes de producción kg de aceitunas para aceite a pie de parcela (SIN AMORTIZACIÓN)	**411.9**	**778.8**	**1454.8**	**2645.5**
Determinación (amortización de la tierra o arrendamiento o coste de oportunidad)				**155.0**
Total costes por kg de aceitunas para aceite (CON AMORTIZACIÓN)				**2800.5**

(1) En base a información oficial de la Dirección de Estadísticas Agropecuarias del Ministerio de Ganadería, Agricultura y Pesca (DIEA MGAP) de Uruguay.

AMPLIFIED METHODOLOGICAL NOTES – URUGUAY (SPANISH ORIGINAL)

Aspectos metodológicos referidos a costes de transporte y procesamiento en almazara (Fase II)

La información presentada referente a costos de transporte y producción de aceites de oliva fue proporcionada por la asociación de productores de olivos, Asociación Olivícola de Uruguay (ASOLUR). No se trata de estadísticas oficiales.

En Uruguay existen 17 almazaras, con capacidad media de procesamiento de 8.000 / ton / día (aunque con diferencias entre almazaras).

Las almazaras están muy articuladas con la producción de aceitunas. No hay almazaras que se dediquen solo a producir aceite (sin tener plantación). Además hay pocas envasadoras que adquieren aceite a granel para su envasado.

Los modelos de integración son los siguientes:

- Almazara adquiere aceituna a cambio de dinero.
- Almazara moltura aceituna a cambio de una comisión.
- Almazara moltura aceituna a cambio de una cantidad de aceite**.(2)**

Cuadro 2. Resumen de costos de transporte y procesamiento en almazara.

1	**Indique el porcentaje aproximado sobre la producción total según los diferentes sistemas de molturación en su país:**		
	Sistema Continuo de centrifugación (%):	100	Expresado en % de producción
	Sistema tradicional de prensas (%)		Expresado en % de producción
	Sistema Mixto (%):		Expresado en % de producción
2	**Coste medio de transporte por kg de aceituna, desde campo hasta la almazara:**		
	Distancia media considerada (km):	75	
	Coste de transporte aceituna (€/kg):	0.03	
3	**Coste medio de molturación de aceituna desde patio de recepción hasta depósito sin filtrar:**		
	Sistema Continuo de centrifugación (€/kg):	0.16	
	Sistema tradicional de prensas (€/kg):		
Notas	** Este coste incluye los siguientes capítulos: recepción y acondicionamiento de la aceituna (limpieza y lavado), molienda, batido, centrifugación horizontal, centrifugación vertical, decantación y almacenamiento.*		
	*** Se recomienda asimilar este coste al precio medio que una almazara privada cobra al agricultor por kg de aceituna en cada país.*		
	**** Contestar al sistema tradicional sólo si el porcentaje de almazaras tradicionales en ese país es superior al 20%*		
4	**Precio de los subproductos a pié de almazara:**		
	Orujo de sistema tradicional (€/kg):		
	Orujo de sistema continuo de tres fases (€/kg):		
	Orujo de sistema continuo de dos fases (alperujo) (€/kg):		
	Hueso de aceituna (€/kg):		
	Ramitas y hoja de olivo (restos limpiadora) (€/kg):		
Notas	** Contestar únicamente si se dispone de datos medios y el subproducto tiene valor.*		
5	**Rendimientos medios graso industriales según sistema de cultivo (% aceite):**		
	S1:	S4:	S7:
	S2:	S5: 10%-15%	
	S3:	S6:	

Consideraciones finales

Las estadísticas presentadas en este documento son preliminares e indicativas de tendencias. **No se trata de estadísticas oficiales.**

Para la **Fase 1** se presentan **costos teóricos estimados** para un monte de edad media de 8 años, apto para la recolección mecánica y sin riego.

Ello **no refleja necesariamente la situación actual de costos de producción de aceituna** en Uruguay. La presencia incipiente de la producción olivícola hace que exista disparidad de costos según madurez del monto, ubicación, variedad, técnicas, etc.

- En promedio los montes son jóvenes (edad media de 6 años).
- Por tanto, la recolección aún no está totalmente mecanizada.
- Existen instalaciones de riego en varios predios, aunque su uso no es difundido. El costo de instalación de un sistema de riego ronda los US$ 2.500 – US$ 3.000 / ha. Los costos operativos del sistema de riego se estiman en un 35% a 40% de los costos operativos totales.

(2) Fuente: El PRC del Conglomerado Agroindustrial Olivícola de Uruguay (Parras, 2012).

AMPLIFIED METHODOLOGICAL NOTES – URUGUAY (SPANISH ORIGINAL)

Los costos aquí presentados no consideran costos de implantación del cultivo. A modo de referencia, la implantación del cultivo "llave en mano" ronda los US$ 2.500 / ha (con variaciones según tipo de suelo, variedad de olivar, etc.).

Los costos de la FASE II reflejan la situación actual de transporte y producción de aceite de oliva (a diferencia de lo planteado en Fase I).

ANNEX 3

LIST OF DOCUMENTS[5] SENT BY COUNTRIES

[5] Available upon request from the IOC Executive Secretariat

DOCUMENTATION REÇUE DES PAYS MEMBRES DU COI
DOCUMENTATION RECEIVED FROM THE IOC MEMBER COUNTRIES
DOCUMENTACIÓN RECIBIDA DE LOS PAÍSES MIEMBROS DEL COI

PAISES/PAYS/ COUNTRIES	EXPERTOS/EXPERTS	DOCUMENTOS/DOCUMENTS
ALBANIA- ALBANIE	MS FATMIRA ALLMUÇA - MINISTRY OF AGRICULTURE	- PRODUCTION COSTS - OLIVE FRESH FRUITS PRODUCTION IN LOW, MEDIUM & HIGH PRODUCTION PERIODICITY - OLIVE FRESH OLIVE FRUIT & OIL OLIVE PROCESSING
CHIPRE – CHYPRE - CYPRUS	PROF. GIORGOS PAPADAVID- AGRICULTURAL RESEARCH INSTITUTE	- DATA FOR OLIVE IN CYPRUS (OLIVE COSTS)
	MR LOUKIA ALEXANDROU - STATISTICAL SERVICE OF CYPRUS	- AGRICULTURAL STATISTICS – 2009-2010
ESPAÑA- ESPAGNE - SPAIN	SRA. Mª JOSE HERNANDEZ MENDOZA – MAGRAMA SR. ANIBAL JIMÉNEZ SÁNCHEZ - MAGRAMA	- TIPOLOGIAS DE EXPLOTACIONES DEL OLIVAR - COSTES MEDIOS OLIVAR POR TIPOLOGIA DE EXPLOTACIÓN - ESTUDIO DE LA CADENA DE VALOR Y FORMACIÓN DE PRECIOS DEL ACEITE DE OLIVA – CAMPAÑA 2009-2010 - ESTUDIO DE LA CADENA DE VALOR Y FORMACIÓN DE PRECIOS DEL ACEITE DE OLIVA – CAMPAÑA 2008-2009 - ESTUDIO DE LA CADENA DE VALOR Y FORMACIÓN DE PRECIOS DEL ACEITE DE OLIVA APROXIMACIÓN A LOS COSTES DEL CULTIVO DEL OLIVO (AEMO)
FRANCIA - FRANCE	MME NADINE GARCIA – FRANCE-AGRIMER	- RÉFÉRENTIEL DES COÛTS DE REVIENT DE LA FILIÈRE HUILE D'OLIVE DE FRANCE (AFIDOL)
	M. JEAN-MICHEL DURIEZ – AFIDOL	- LES COÛTS DE PRODUCTION DE L'HUILE D'OLIVE EN FRANCE : UNE TRÈS GRANDE HÉTÉROGÉNÉITÉ
GRECIA - GRÈCE - GREECE	PROF. GEORGIOS KOUBOURIS – INSTITUTE FOR OLIVE TREE & SUBTROPICAL PLANTS	- OLIVE PRODUCTION SYSTEMS ON SLOPING LAND: PROSPECTS AND SCENARIOS - TRADITIONAL OLIVE ORCHARDS ON SLOPING LAND: SUSTAINABILITY OR ABANDONMENT - EXPORTATION COMPETITIVENESS OF GREEK OLIVE OIL - A SUSTAINABLE FUTURE FOR OLIVE PRODUCTION ON SLOPING LAND? - ORGANIC OLIVE ORCHARDS ON SLOPING LAND: MORE THAN A SPECIALTY NICHE PRODUCTION SYSTEM? - INTENSIVE OLIVE ORCHARDS ON SLOPING LAND: GOOD WATER AND PEST MANAGEMENT ARE ESSENTIAL - OLIVE OIL MARKET IN GREECE – THESIS 2012 - OLIVE OIL STUDY – NBG – - OLIVERO: THE PROJECT ANALYSING THE FUTURE OF OLIVE PRODUCTION SYSTEMS ON SLOPING LAND IN THE MEDITERRANEAN BASIN - THE GREEK OLIVE OIL MARKET STRUCTURE - SEMI-INTENSIVE OLIVE ORCHARDS ON SLOPING LAND: REQUIRING GOOD LAND HUSBANDRY FOR FUTURE DEVELOPMENT - ZAMBOUNIS – OLIVE OIL

PAÍSES/PAYS/ COUNTRIES	EXPERTOS/EXPERTS	DOCUMENTOS/DOCUMENTS
IRAN	MR ALIREZA ESMAILI FALAK – HEAD OF DELEGATION – MINISTRY OF JIHAD-E-AGRICULTURE	- PRODUCTION COSTS OF OLIVES IN ISLAMIC REPUBLIC OF IRAN
ITALIA - ITALIE- ITALY	MS PAOLA DORIA – ISTITUTO NAZIONALE DI ECONOMIA AGRARIA – INEA	- MODELLI OLIVICOLI INNOVATIVI: UN'ANALISIS COMPARATIVA - ANALISIS TECNICO-ECONOMICHE DELL'OLIVICOLTURA MERIDIONALE - I COSTI DI PRODUZIONE DELL OLIVE DA OLIO - ANALISI DEI COSTI E DEI REDDITI DEL PROCESSO PRODUTTIVO OLIVO-OLIO IN TOSCANA (1998-2008) - IL COSTO DI PRODUZIONE E LA REDDITIVITÀ DELL'AZIENDA OLIVICOLA - CARTA DE LA COMISION EUROPEA SOLICITANDO DATOS PARA ANALISIS GENERAL SOBRE LA ESTRUCUTRA DEL SECTOR OLEICOLA DE LOS PRINCIPALES PAISES PRODUCTORES DE LA UE – 15 DE DICIEMBRE DE 2011 - CONTESTACION DEL MINISTERIO DE AGRICULTURA – 1 DE FEBRERO DE 2012 - SURVEYS AND STUDIES CONDUCTED IN ITALY ON PRODUCTION COSTS (OLIVE AND OLIVE OIL) - ANALISI ECONOMICA DELL'USO DI PANNELLI ATTRATTIVI "ATTRACT AND KILL" PER IL CONTROLLO DELLA MOSCA DELLE OLIVE (*BATROCERA OLEAE* GMELIN): IL CASO DI UN'AZIENDA OLIVICOLA BIOLOGICA IN SICILIA - MODELLI TECNICI ED ECONOMICI PER LA RIDUZIONE DEI COSTI DI PRODUZIONE NELLE REALTÀ OLIVICOLE DELLA TOSCANA - OLIVETI INTENSIVI E TRADIZIONALI: COSTI A CONFRONTO - TUTELA DEL PAESAGGIO RURALE DELLA TOSCANA: IL CASO DEGLI OLIVETI
JORDANIA - JORDANIE- JORDAN	MR OMAR ABDUL HADI – NATIONAL CENTER FOR AGRICULTURAL RESEARCH & EXTENSION	- OLIVE IN JORDAN
LIBANO – LIBAN - LEBANON	MR YOUSSEF FARES – OLIVE TRADE	LETTER WITH DATA
	MR HAMMOUD ABOU DIAB – MINISTRY OF AGRICULTURE	- IMPUT OUTPUT DATA AND PROFIT CALCULATION FOR OLIVE TREES - IMPUT OUTPUT AND PROFIT CALCULATION FOR OLIVE TREES - OLIVE AND OLIVE OIL LEBANON - PROFILE: THE OLIVE CHAIN - STRATÉGIE ET POLITIQUE AGRICOLE – ANALYSE DE FILIÈRE – L'OLIVIER CONTRAINTES ET POTENTIALITÉS - DONNÉES EXPLOITATIONS - RÉPARTITION DE LA SUPERFICIE DE L'OLIVIER PAR PROVINCE
	MR MILAD EL RIACHY – LEBANESE AGRICULTURAL RESEARCH INSTITUTE	- PROJET PILOTE D'APPUI À L'OLÉICULTURE

PAÍSES/PAYS/ COUNTRIES	EXPERTOS/EXPERTS	DOCUMENTOS/DOCUMENTS
LIBANO (cont.) - LIBAN (suite) - LEBANON (contd.)	MR ABDEL KADER EL-HAJJ - LEBANESE AGRICULTURAL RESEARCH INSTITUTE	- E-MAIL INFORMANDO MISMOS DATOS SR. MILAD EL RIACHY
	MR TAMIM EL TAKACH - LEBANESE AGRICULTURAL RESEARCH INSTITUTE	- E-MAIL INFORMANDO QUE PUEDE ENVIARNOS INFORMACION SOBRE CADENA DE VALOR
MARRUECOS - MAROC - MOROCCO	M. SIKAOUI LHASSANE – CENTRE INRA – MARRAKECH	- L'OLÉICULTURE MAROCAINE – CARACTÉRISATION ET SYSTÈMES DE CULTURE
	M. AHMED AIT HMIDA – CENTRE RÉGIONAL DE LA RECHERCHE AGRONOMIQUE DE MARRAKECH	- SYNTHÈSE DES ACQUIS DE RECHERCHE SOCIO-ÉCONOMIQUES SUR LA CULTURE DE L'OLIVIER
PORTUGAL	MS ISABEL ESCADA – MAMAOT	- CUSTOS DE PRODUÇAO NO OLIVAL EM PORTUGAL
TÚNEZ -TUNISIE - TUNISIA	MME SAIDA ELFKIH – INSTITUT DE L'OLIVIER - SFAX	- LES DIFFÉRENTES STRUCTURES DE PRODUCTION DE L'HUILE D'OLIVE BIOLOGIQUE DANS LA RÉGION DE SFAX : UNE ANALYSE COMPARATIVE - RAPPORT, COMMERCE ÉQUITABLE - HUILE BIOLOGIQUE - ÉTUDE DES COUTS DE PRODUCTION DE L'OLIVE À HUILE ET DE L'HUILE D'OLIVE BIOLOGIQUE : CAS DES AGRO-COMBINATS DE LA RÉGION DE SFAX - ÉTUDE STRATÉGIQUE DU SECTEUR OLIVE DE TABLE EN TUNISIE : APPLICATION D'UNE APPROCHE ANALYSE FILIÈRE
	M. SAI MOHAMED BECHIR - INSTITUT DE L'OLIVIER - TUNIS	- LES COÛTS DE PRODUCTION - CONTRIBUTION DE L'OLIVIER À LA CRÉATION DES EMPLOIS ET À LA FORMATION DU REVENU AGRICOLE DANS LA RÉGION DU NORD DE LA TUNISIE : CAS DE SILIANA - LE SYSTÈME HYPER INTENSIF DE L'OLIVIER À HUILE EN TUNISIE APRÈS 10 ANS: UNE ÉVALUATION TECHNICO- ÉCONOMIQUE - LE SECTEUR OLÉICOLE EN TUNISIE DE LA PROTECTIONNISME À LA LIBÉRALISATION - ÉTUDE DES SYSTÈMES DE PRODUCTION DES EXPLOITATIONS À DOMINANTE OLÉICOLES ET DE LA COMMERCIALISATION DES OLIVES À HUILE DANS LA RÉGION DU NORD
TURQUÍA - TURQUIE - TURKEY	MS MINE YALÇIN MS FATMA OZTURK AGRICULTURAL ECONOMIST OLIVE RESEARCH STATION BORNOVA/IZMIR	- 2011/12 PRODUCING COST OF OLIVE OIL (TL) ELEMENTS - OLIVE OIL PRODUCTION IN TURKEY AND REGIONS

ANNEX 4

LIST OF PARTICIPANT EXPERTS IN THE STUDY

EXPERTOS QUE HAN COLABORADO EN EL ESTUDIO INTERNACIONAL SOBRE COSTES DE PRODUCCIÓN DEL ACEITE DE OLIVA

EXPERTS AYANT PARTICIPÉ À L'ÉTUDE INTERNATIONALE SUR LES COÛTS DE PRODUCTION DE L'HUILE D'OLIVE

PARTICIPANT EXPERTS IN THE INTERNATIONAL OLIVE OIL PRODUCTION COSTS STUDY

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Expertos de los Miembros del COI - Experts des Membres du COI – IOC Member experts

- Ms Fatmira Allmuça - Ministry of Agriculture, Rural Development and Water Administration (Albania)
- Monsieur Mahmoud Mendil- Institut Technique de l'Arboriculture Fruitière et de la Vigne (Algérie)
- Ing. Lucrecia Santinoni & Ing. Eduardo Moavro - Ministerio de Agricultura, Ganadería y Pesca (Argentina)
- Ms Naghmeh Azizi - Ministry of Jihad-e-Agriculture (Iran)
- Dr Fathi Abd Elhadi – Israeli Tasting Panel (Israel)
- Mr Omar Abdul Hadi – National Center for Agricultural Research and Extension &
- Mr Barr Alhwaidy - Ministry of Agriculture (Jordan)
- Eng. Hammoud Abou Diab - Ministry of Agriculture & PhD Milad El Riachy – Lebanese
- Agricultural Research Institute (Lebanon)
- Monsieur Lhassane Sikaoui - Centre INRA Marrakech (Maroc)
- Madame Saïda Elfkih - Institut de l'Olivier (Tunisie)
- Ms Mine Yalçin - Olive Research Station (Turkey)
- Sra. María José Hernández Mendoza y Sr. Anibal Jiménez Sánchez - Ministerio de
- Agricultura, Alimentación y Medio Ambiente & Sr. Joaquín de Porras-Isla Fernández –
- Agencia de Información y Control Alimentarios - España (Unión Europea)
- Madame Nadine Rittener – FranceAgriMer – France (Union européenne)
- Mr Theodoros Vloutis - PASEGES – Greece (European Union)
- Dr.ssa Paola Doria - Istituto Nazionale di Economia Agraria – Italy (European Union)
- Ms Isabel Escada - Ministerio da Agricultura e do Mar – Portugal (European Union)
- Ing. María Eugenia Silva Carrazzone - Ministerio de Ganadería, Agricultura y Pesca
- (Uruguay)

Expertos invitados - Experts invités – Guest experts

- Sr. Juan Vilar Hernández - Gea Westfalia Separator Ibérica, S.A. - España
- Sr. José Penco - Asociación Española de Municipios del Olivo – España
- Sr. Bertrand Bouyou - Pellenc Iberica S.L. - España
- Sr. Vicente Sanz Clemente - Pieralisi España S.L. - España
- Sr. Pablo Segura Llorens - Pieralisi España S.L. - España
- Sr. Xavier Rius García - Agromillora Catalana, S.A. - España

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