



UNIVERSIDAD DE JAÉN
Centro de Estudios de Postgrado

Organic olive oil production in Tunisia: A Business Proposal

Alumno: BRAHIM BEN TANFOUS
Directora: ADORACION MOZAS MORAL
Tutor: ROBERTO GARCIA RUIZ
Dpto: UJA

14/11/2022

SUMMARY

SUMMARY	2
1. PROJECT	5
2. INTRODUCING THE ACTIVITY AND DEFINITIONS	6
3. NATIONAL SITUATION	9
3.1. Olive oil sector in Tunisia	9
3.2. Organic olive oil in Tunisia	8
3.3. Regulation and incentive framework	20
4. INTERNATIONAL SITUATION AND EXPORT PROSPECTS	30
4.1. Organic sector in the world	30
4.2. Organic olive oil sector in the world	32
4.3. International organic olive oil markets	32
4.4. Distribution channels	34
4.5. Label Organic	37
5. PROJECT AND RESSOURCES	39
5.1. Land development	39
5.2. Installation of plantation	39
5.3. Agriculture and equipment	39
5.4. Approach fees and miscellaneous	39
5.5. Study costs	40
5.6. Implementation schedule	40
5.7. Employment	41
5.8. Flow of production	42
6. INVESTMENT AND FORECAST PROFITABILITY	43
6.1. Financial analysis	43
6.2. Investment and funding schemes	43
6.3. Forecast profitability	44
6.4. Financial Analysis	44
7. APPENDICES	45
7.1. Financial Analysis	45
7.2. Technical data	45

FIGURE INDEX

1. Distribution of olive trees in Tunisia	8
2. Olive oil production, consumption and exports 1990–2012	11
3. Distribution of olive oil exported in bulk from Tunisia in 2019/2020	13
4. Variation of exports	14
5. Distribution of olive oil packaged export	14
6. Evolution of organic olive-growing areas and production in Tunisia	16
7. Evolution of the European Union organic market	17
8. Breakdown of the European Union organic market in 2019	18

TABLE INDEX

1. Investment schemes	45
2. Implementation schedule.....	45
3. Depreciation	46
4. Return on investment and sensitivity test	46
5. Cost evolution	47
6. Cash flow	47
7. Occupation of future land	48
8. Evolution of profitability	48
9. Evolution of production	49
10. Evolution of the value of production	49

RESUMEN

El olivar en Túnez se extiende desde el norte a sur del país. Por su importancia económica, social y ambiental, la producción de aceite de oliva es una de la actividad más importante en el país. El sector olivero tunecino tiene que hacer frente a la creciente competitividad internacional optimizando la productividad y la innovación en el olivar tradicional. En este sentido, el sector ha experimentado importantes cambios en las últimas décadas en cuanto a las prácticas agrícolas empleadas, pasando de las asociadas a los sistemas tradicionales de olivicultura de baja densidad a las de los nuevos sistemas innovadores de cultivo intensivo. Además, el riego y la producción orgánica están jugando un papel cada vez más importante en este sector. En este contexto, el objetivo principal de este proyecto es la presentación de la creación de una empresa que integre la producción de aceite de oliva ecológico en Túnez con un sistema de cultivo intensivo. En una primera etapa se realizó una presentación sobre la situación nacional e internacional del aceite de oliva ecológico.

En el segundo, se evaluó la polifuncionalidad y sostenibilidad de la producción olivarera, con un análisis más detallado de la olivicultura ecológica con sistema intensivo desde la fase de plantación hasta la fase de plena producción, durante un periodo de referencia del ciclo de vida de la aceituna de 20 años. También se realizó una factibilidad financiera.

Los resultados del análisis financiero mostraron que la tasa interna de retorno calculada en un período de 20 años generada por el proyecto es positiva aproximadamente de un 12%.

ABSTRACT

Olive plantation is widespread throughout Tunisia from north to south. Because of its economic, social and environmental importance, the production of olive oil is the most important activity in. The Tunisian olive sector has to cope with increasing international competitiveness by optimising productivity and innovation in the traditional olive grove. In this respect, the sector has undergone major changes in recent decades in terms of the agricultural practices used, evolving from those associated with traditional low-density olive growing systems to those of new innovative intensive farming systems. In addition, irrigation and organic production are playing an increasingly important role in this sector. In this context, the main objective of this project is the presentation of the creation of business which integrates the production of organic olive oil in Tunisia with an intensive farming system.

In the first stage, a presentation on the national and the international situation of the organic olive oil was performed.

In the second, the multi functionality and sustainability of olive production was evaluated, with a more detailed analysis of the organic olive growing with an intensive system from the planting phase to the full production phase, during a reference period of the life cycle of the olive growth of 20 years. A financial feasibility was also performed.

The results of the financial analysis showed that the internal rate of return calculated over a period of 20 years generated by the project is satisfactory of approximately 12%.

1. PROJECT

Project : Organic olive oil production and packaging unit	
Description	Growth of olive trees in 20 hectares, Production of organic olives Packaging and marketing of organic olive oil
Products	▪ Organic olive oil ▪ Sub product : Pomace
Investment	210,000 Euros
Financing	▪ Equity : 210,000 Euros
Capacity	▪ Production : 50 T organic olive oil /day ▪ Packaging : 1 200 bottles / hour (0,75 litres)
Revenues	88,000 Euros
Employees	1
Profitability	▪ IRR : 26% ▪ Return on investment : 6 years

2. INTRODUCING THE ACTIVITY AND DEFINITIONS

The project concerns the creation of business which integrates both the activities of producing and packaging organic olive oil.

In this proposal, the COI standard (COI/T.15/NC n° /Rév.8 dated February 2015), which is the current reference for the definition and classification of olive oils, has been followed. According to this standard olive oil is defined as:

'Olive oil is oil obtained solely from the fruit of the olive tree (Olea europaea L.), excluding oils obtained by solvent or by re-esterification processes and any mixture with oils from other nature '.

It is marketed according to the names and definitions below:

- *Virgin olive oils are oils obtained from the fruit of the olive tree solely by mechanical processes or other physical processes under conditions, particularly thermal ones, which do not lead to any alteration of the oil, and having undergone no treatment other than washing, decantation, centrifugation and filtration.*

Virgin olive oils fit for consumption as they are include:

- i) Extra virgin olive oil:** virgin olive oil whose free acidity expressed as oleic acid is a maximum of 0.8 grams per 100 grams and whose other characteristics correspond to those fixed for this category by the COI standard;
- ii) Virgin olive oil:** virgin olive oil whose free acidity expressed as oleic acid is a maximum of 2 grams per 100 grams and whose other characteristics correspond to those fixed for this category by the COI Standard;
- iii) Ordinary virgin olive oil:** virgin olive oil whose free acidity expressed as oleic acid is a maximum of 3.3 grams per 100 grams and whose other characteristics correspond to those fixed for this category by the COI standard;

Virgin olive oils not suitable for consumption include:

- i) **Refined olive oil:** olive oil obtained from virgin olive oils by refining techniques that do not lead to changes in the initial glyceride structure. Its free acidity expressed as oleic acid is a maximum of 0.3 grams per 100 grams and its other characteristics correspond to those fixed for this category by the COI Standard.
- ii) **Olive oil:** Oil made up of a blend of refined olive oil and virgin olive oils suitable for consumption as they are. Its free acidity expressed in oleic acid is a maximum of 1 gram per 100 grams and its other characteristics correspond to those fixed for this category by the COI Standard.
- iii) **Olive pomace oil:** Oil obtained by treatment with solvents or other physical processes of olive pomace, excluding oils obtained by re-esterification processes and any mixture with oils of other nature. It is marketed according to the names and definitions below:
 - Crude olive-pomace oil is olive-pomace oil whose characteristics correspond to those fixed for this category by this standard. It is intended for refining with a view to its use for human consumption or intended for technical uses.
 - refined olive-pomace oil is the oil obtained from crude olive-pomace oil by refining techniques that do not lead to changes in the initial glyceride structure. Its free acidity expressed in oleic acid is a maximum of 0.3 grams for, 100 grams and its other characteristics correspond to those fixed for this category by the COI Standard.
 - olive-pomace oil is the oil made up of a blend of refined olive-pomace oil and virgin olive oils suitable for consumption as they are. Its free acidity expressed in oleic acid is a maximum of 1 gram per 100 grams and its other characteristics correspond to those fixed for this category by the COI Standard. This blend cannot, under any circumstances, be called “olive oil”.

Organic olive oil is often marketed in the form of extra-virgin and/or virgin olive oil. It should therefore first meet the requirements for these categories. The organic designation is subsequently awarded on the basis of compliance with certain specific

requirements set by the national regulations in force (see legal and normative framework section). These requirements relate to the agricultural product and its processing methods.

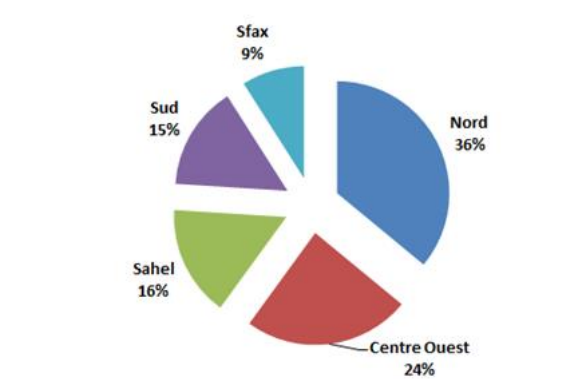
3. NATIONAL SITUATION

3.1. Olive oil sector in Tunisia

☐ Agricultural production

Olive growing in Tunisia extends over nearly 1.7 million hectares comprising nearly 82 million olive trees distributed according to the zones as follows:

Figure1: Distribution of olive trees in Tunisia



Source: ONH based on data from the General Directorate of Agricultural Production-2015

The average density is around 40 trees per hectare and it varies considerably depending on the area, from about 100 trees/ha in the North to only 20 trees/ha in the South. This level remains well below the average for other producing countries such as:

- Spain: 100 trees / ha
- Italy and Greece both with about 136 trees / ha

This difference is primarily explained by the difference in terms of annual rainfall and temperature between these European countries and Tunisia, particularly in the central and southern regions. Moreover, the traditional plantation models adopted in Tunisia increase this gap in terms of density. Experiments have shown that the patterns followed in certain areas could be improved so as to increase the density without affecting the yield of the trees. More than 95% of the areas dedicated to olive growing are dry and their yields depend greatly on local rainfall.

The main local varieties are Chemalali, Chetoui, Zalmati, Jerboui, Chemchali and Oueslati. They are characterized as follows:

- **Chemlali:** It dominates the olive groves of the centre and the south and represents 56% of the area and 69% of the areas. It contributes up to 81% of national production. It is well adapted to arid and semi-arid climates. However, the corresponding oil is congealable and flat.



- **Chetoui :** It represents 12% of the total area of olive groves and 30% of the number of trees, but only contributes 10% of national production. It populates most of the northern olive groves. The oil from this variety is non-sticky and fruity with a good level of acidity.



In addition to these two dominant ones, Tunisian olive groves include other cultivars with more or less representative varieties such as:

- Jerboui : Béja, Jendouba and le Kef
- Zalmati : Zarzis and Djerba
- Oueslati : Siliana and Nasrallah
- Chemchali : Tozeur and Gafsa

In recent years, the presence of foreign varieties is growing more and more in

Tunisia. This is mainly Arbequina imported from Spain and Korineiki imported from Greece which both are considered more suitable for intensive production models and allowing a fairly short return on investment.

❑ Transformation

Olive processing is carried out by nearly 1,750 oil mills accounting for a daily crushing capacity of 34,000 T. This capacity breaks down as follows:

- North: 18%
- Sahel (Sousse, Monastir et Mahdia) : 28%
- Sfax : 33%
- South-West (Kairouan, Kasserine, Gafsa et Sidi Bouzid) : 15%
- South East : 6%

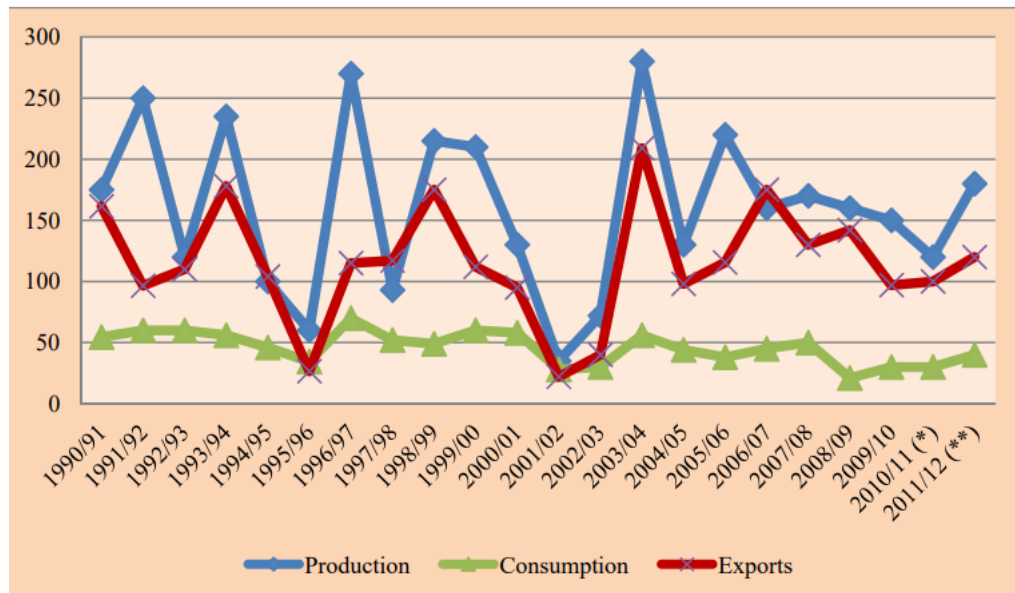
The share of oil mills equipped with continuous chains continues to increase. They currently represent more than 50% of the capacity.

The industrial fabric of the sector also includes other activities:

- Pomace oil extraction: 7 units
- Refining (mainly seed oil): 11 units
- Packaging: more than 30 units

Over the past 30 years, the Tunisian production of olive oil has evolved as shown in the following graph.

Figure2: Olive oil production, consumption and exports 1990–2012
(1 000 tonnes)



Source: COI

The graph illustrates the great fluctuation of Tunisian production from one season to another mainly due to weather conditions. Indeed, the Tunisian production remains highly dependent on rainfall with ratios that can reach from 1 to 4 as was the case between the last two campaigns.

❑ Local olive oil market

The local olive oil market is estimated according to the COI at between 30,000 and 40,000 T. A more precise estimate is difficult to establish given the multitude of practices and modes of marketing and consumption. Indeed, self-consumption and direct supplies from oil mills or through informal circuits dominate the local market.

Local consumption of olive oil has generally stagnated or even declined in recent years as a result of two factors:

- The rise in the price of olive oil, which is becoming inaccessible to a large

segment of the Tunisian population. Indeed, the average price exceeded 2.5 euros per litre.

- The development of the marketing of vegetable oils (mainly sunflower and maize) whose local refining and packaging have been encouraged since the mid-2000s to reduce state intervention in terms of support for compensated oil (Soya).

Packaged olive oil should not represent more than 5% of this market, i.e. approximately 2000T marketed mainly through supermarkets.

For most of the Tunisian operators, the local market is considered as a residual circuit which is not the subject of a targeted development policy. Indeed, the efforts of these operators are oriented towards export, which offers more interesting possibilities in terms of quantity and profitability.

The main brands of packaged olive oil present on the local market are:

- Châal
- Hikma
- El Oued (rivière d'or)
- Olives & Oliviers (groupe UTIC)

With the exception of a few, the presence of these brands on the local market is increasingly irregular. The pressure exerted by supermarkets and the deterioration of margins have prompted several of them to abandon this market and devote themselves entirely to export.

The last brand belongs to one of the main Tunisian groups which has set up a totally integrated model from the olive tree to the final distribution. In addition to its own brand, it offers a very competitive 1st price offer in its distribution chain, which has put additional pressure on other Tunisian packers.

□ Tunisian exports of olive oil

When it comes to exports, Tunisia holds a prominent position in the sector of olive oil. Like production, exports of olive oil show great fluctuations. Exports were made up of 73% in quantity by extra-virgin quality on the average of the last 5 years. This share was only 32% between 1999 and 2003. This testifies the continuous improvement in the quality of exported Tunisian olive oil.

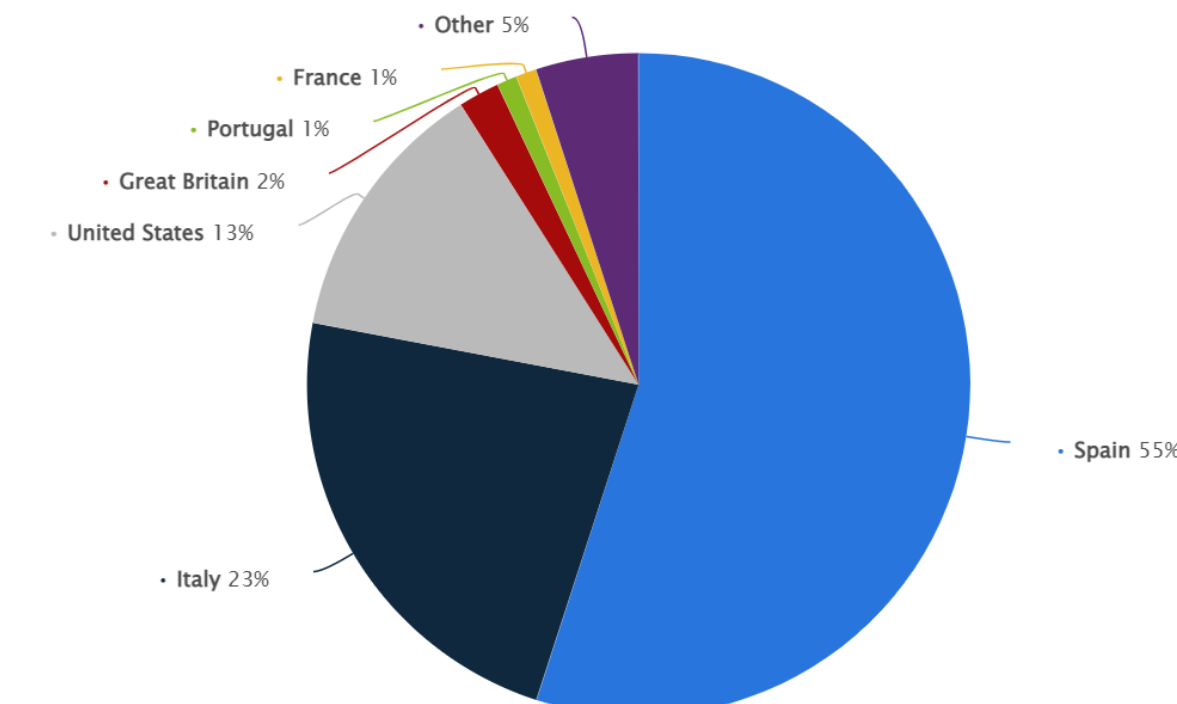
According to the latest EUROSTAT data available (for 2010), Italy was the main buyer of the Tunisian olive oils (52,125 t), followed by Spain and France (8,546 tons and 5,370 tons, respectively). On average, Tunisian exports represented 77% of

Italian imports outside the EU, 79% of Spanish imports and 91% of French imports during the five-year period from 2002 to 2008.

Apart from the European Union, Tunisian exports to the United States were equivalent to 12% of American imports of olive oil in 2009.

As shown in the graph below, 5 markets represent nearly 90% of Tunisian exports. For Italy, Spain and, to a lesser extent, the United States, exports are made in bulk and are intended for bottling on site after blending (mixing) with other European oils. Indeed, Tunisian olive oil is used in the composition of the biggest world brands in combination with other oils.

Figure3 : Distribution of olive oil exported in bulk from Tunisia in 2019/2020,
by country of destination



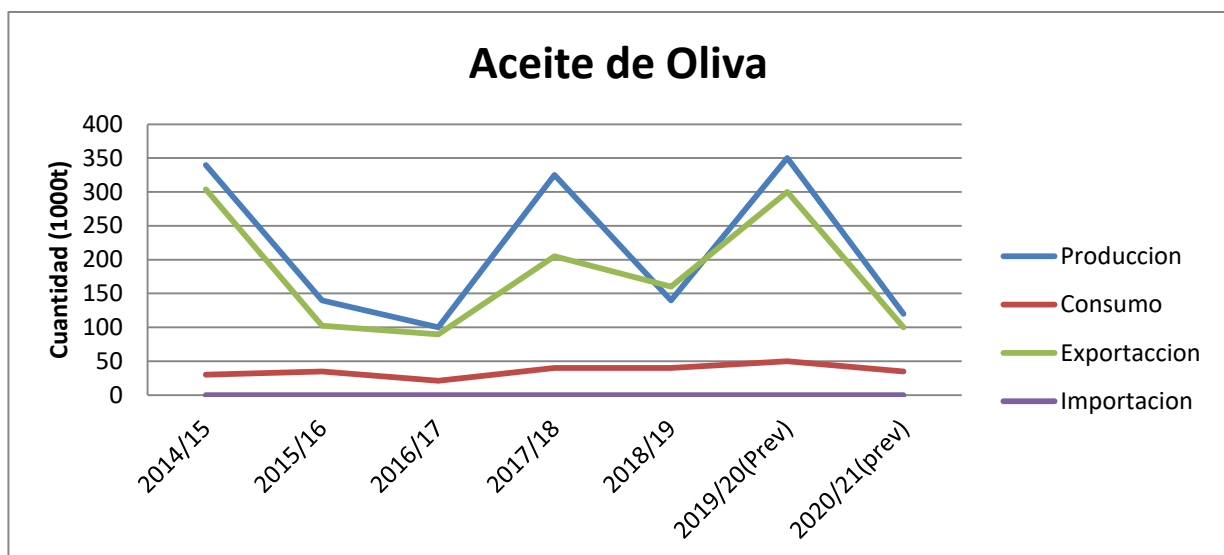
Source: Statista

For packaged olive oil exports, 2007 was a real turning point with the adoption of a strategy aimed at developing its share in global exports. Indeed, until 2005/2006, packaged olive oil accounted for less than 1% of exports. The FOPRHOC (Packaged Olive Oil Promotion Fund) was the main instrument of this strategy with the incentives granted to exporters of packaged olive oil.

Exports experience large variations from one year to another, due to various factors such as alternate productivity characteristic of certain varieties, rainfall and cultivation practices. These oscillations are evident in the table above which shows very low yields (100,000 t in 20016/17) or very high (300,000 t in 2019/20) although the export volume seems stable between the 2014/15 and 2017/18 campaigns. Total production largely covers local consumption. Consequently, the rest of the production is exported and the country does not need to import olive oil.

Figure4 : Variation of exports

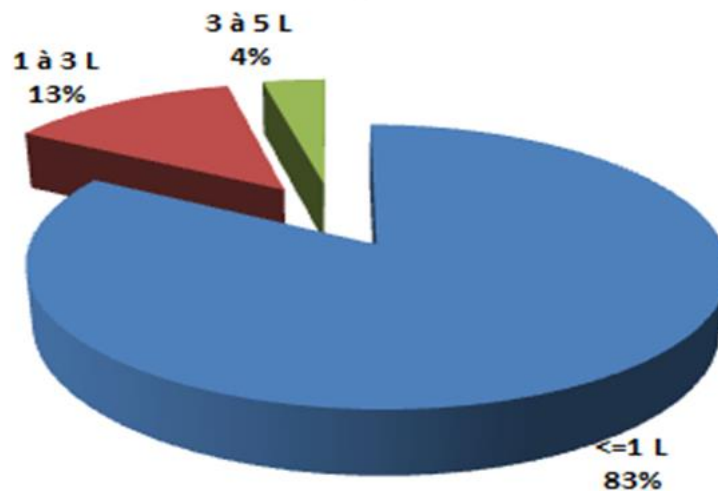
Aceite de Oliva (1000t)							
Tunez	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20(Prev)	2020/21(Prev)
Produccion	340	140	100	325	140	350	120
Consumo	30	35	21	40	40	50	35
Exportacion	304	102.5	89.5	205	160	300	100
Importacion	0	0	0	0	0	0	0



Source: COI

Nearly 90% of packaged olive oil exports are of extra-virgin quality. These exports break down by format as follows:

Figure5: Distribution of olive oil packaged export



Source: INS

These exports of packaged olive oil are ensured by about forty operators, of which less than ten who make more than 80% of sales. The main target markets are the United States, France, Saudi Arabia, Russia, the Emirates and China.

In terms of price and as shown in the graph below, packaged olive oil generates an additional margin varying between 30% and 50% of the bulk price depending on the year. The year 2014 recorded an exception so far as the average export price of packaged olive oil recorded a significant drop, particularly in the format of less than 1 litre. Probably, it could be exceptional promotional operations and/or inaccuracies in customs declarations.

3.2. Organic olive oil in Tunisia

□ General overview of organic farming in Tunisia

Tunisia is the first country in Africa to have set up a specific legal framework for organic farming, starting in 1999. With 140,000 hectares of organic agricultural area, Tunisia ranks 5th in Africa and 40th in the world global scale. The number of organic-certified operators approached 7,790 in 2018.

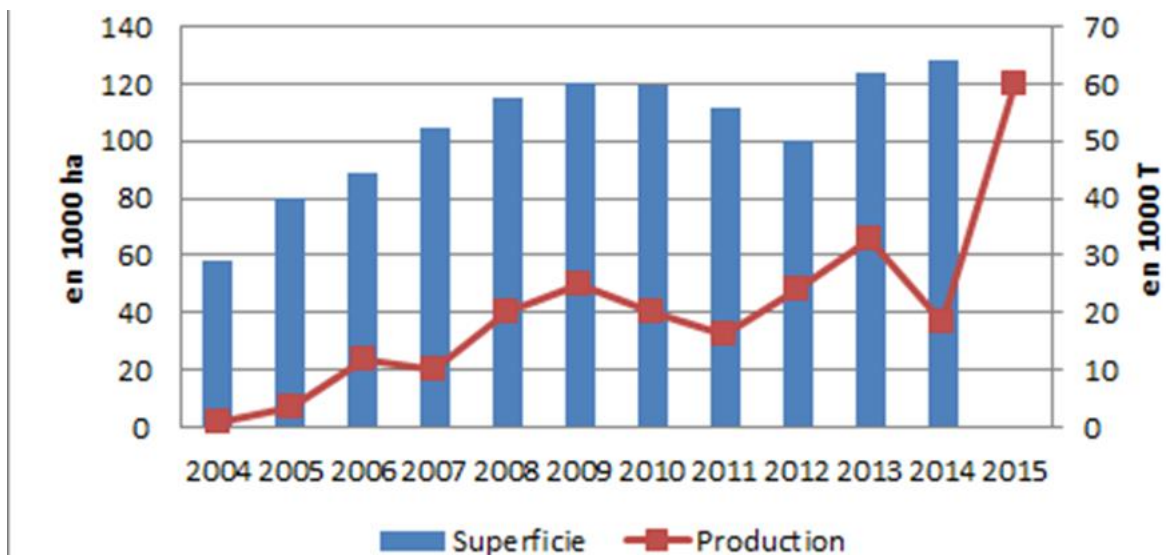
Exports of Tunisian organic products have recorded a very clear upward trend since 2004. The drop observed in 2014 is due to the very poor olive oil campaign.

According to the DGAB, there are 45 exporters in Tunisia. In 2018, Tunisia exported 48,000 tons of organic olive oil. The organic olive oil is exported to 27 countries Italy, US, Spain and France being the 4 main markets. The value of exports in dinars is evaluated at 582.5 million (or 182 million euros), knowing that the average value of the kg is at 12.19 dinars (3.7 euros).

❑ Organic olive growing in Tunisia

Olive growing represents nearly 90% of organic agricultural areas in Tunisia. Areas and organic olive oil production in Tunisia have evolved since 2004 as shown in the graph below.

Figure6: Evolution of organic olive-growing areas and production in Tunisia



Source: DGAB

❑ **Tunisian exports of organic olive oil**

Tunisian exports reached 48,000 tons in 2018 against about 31,000 tons in 2017. The value of exports was around 337 MTD (12 euros) in 2017 and exceeded 582.5 MTD (194 euros) in 2018.

Packaged olive oil represented 21% of exports in 2018. 4 markets monopolize almost all Tunisian organic exports.

For the 2017/2018 campaign, the average export prices were as follows:

- Average price of organic olive oil in bulk: 12.9 DT/kg (4.3 euros)
- Average price of non-organic olive oil: 8.5 DT/kg (2.8 euros)

3.3. Regulatory and incentive framework

➤ **Regulatory and normative framework**

Any organic product (in its natural state or transformed) obeys the general texts governing the production, marketing and release for consumption of food products such as:

- Law 92-117 of December 17, 1992 on consumer protection;
- Law 2005-95 of October 18, 2005 relating to livestock and animal products;
- Order of 22 July 1985 approving Tunisian standards relating to the presentation and labeling of prepackaged foodstuffs;

- Order of 3 September 2008 relating to the labelling and presentation of pre-packaged foodstuffs;

However, there are specific texts governing the production and processing of organic products in Tunisia, the main ones being:

- Law n°99-30 of April 5, 1999 relating to organic farming:

This law defines the general regulatory framework for organic farming in Tunisia. This text applies to organic agricultural products (natural or processed) defined, by this law, as products whose production or processing is carried out without the use of synthetic chemicals.

This law also specifies the rules to be respected in the various links of organic production such as:

- Production, preparation and marketing of products. These aspects are detailed in the specifications (see below)
- Control and certification are carried out by bodies approved by the Minister responsible for agriculture after consultation with the National Commission for Organic Agriculture.
- The conditions for the approval of certification bodies and the control and certification procedures in the field of organic production were set by decree No. 2000-409 of February 14, 2000.
- The administrative and penal sanctions provided for in the event of infringements, observed by economic control agents and agents of the competent authority in accordance with the control procedures enacted.

It should be noted that Tunisia has concluded a mutual recognition agreement with the European Union since 2009. This agreement was renewed in 2015 for an indefinite period. Under this agreement, the organic certification granted in Tunisia is recognized on the European market and Tunisian organic products are no longer required to have European certification in order to be marketed on the European market.

➤ Specifications

The production of organic olive oil in Tunisia is governed by two specifications:

- Specifications for organic plant production: decree of the Minister of Agriculture of February 28, 2001 amended by the decree of January 4, 2013
- Specifications for the preparation of agricultural products produced organically: decree of the Minister of Agriculture of December 3, 2005

The specifications for organic crop production define the production rules and give the period necessary for conversion to organic farming. This conversion period is fixed at least two years before sowing in the case of annual crops and at least three years before the first harvest of the products for other crops (this period may be reduced or extended in certain cases and under certain conditions by the inspection and certification body). The production rules (seeds and plants, fertilization, phytosanitary protection and the fight against weeds, spontaneous plants, etc.) are specified in these specifications.

The specifications relating to the preparation specify the conditions and procedures to be followed in the processing and packaging of organic products in terms of:

- Authorized inputs
- Separation of flows with conventional products and measures to be taken in this direction
- Traceability
- Authorized transformation processes
- Labelling and use of organic mention

➤ Other texts⁶

Other texts are in force and govern the management system for the organic sector, the role and prerogatives of stakeholders, the conditions for granting certain advantages, etc. Among these texts, we cite:

- Decree No. 2000-544 of March 6, 2000, fixing the list of equipment, instruments and means specific to production in accordance with the organic production method.
- Decree No. 2010-153 of February 1, 2010, supplementing Decree No. 96-1563 of September 9, 1996, setting the rules of organization, operation and modes of intervention of the competitiveness development fund in the sectors of agriculture and fishing.
- Decree n° 2010-625 of April 5, 2010, modifying and supplementing decree n° 2001-420 of February 13, 2001, on the organization of the Ministry of Agriculture.
- Decree 2011-4801 of December 10, 2011, amending and supplementing Decree No. 2010-1547 of June 21, 2010, creating a logo for Tunisian organic farming products and setting the conditions and procedures for its granting and its withdrawal.
- Decree No. 2010-2013 of August 16, 2010, supplementing the decrees on the specific organization of regional agricultural development commissions.
- Decree No. 2012-438 of May 26, 2012, setting the composition and operating procedures of the National Commission for Organic Agriculture

➤ Institutional framework

The Ministry of Agriculture, Water Resources and Fisheries is the supervisory structure for the organic sector in Tunisia. The main institutions involved in this sector come under this ministry.

The main institutional players in the organic farming sector in Tunisia are:

- The National Advisory Commission for Organic Agriculture (CNAB)

The National Consultative Commission for Organic Agriculture (CNAB) was created by Law No. 99-30 of April 5, 1999. Its objective is to monitor the organic sector and work for its development.

The missions of this commission were defined by the law of April 5, 1999 as follows:

- Give proposals to develop the organic production method and support its management;
- Study the files relating to the exercise of the organic production activity and issue its opinion;
- Issue an opinion concerning the granting or withdrawal of approvals to inspection and certification bodies.

- The General Directorate of Organic Agriculture (DGAB)

Within the Ministry of Agriculture and Hydraulic Resources, this general directorate is responsible for the organization and development of the organic sector in Tunisia. Its missions are specified as follows:

- Develop strategies and concepts for the development of organic agriculture
- Prepare organic farming development plans
- Execute development plans and develop channels and contractual relationships
- Support projects and investments made in the sector and ensure their follow-up
- Ensure the permanent secretariat of the national commission for organic farming
- Ensuring and developing international cooperation and representing the ministry to international organic farming bodies.

The DGAB comprises the following sub-structures:

- The Department of Studies, Popularization and Information
- The Control and Traceability Department

- The sub-directorate of biological monitoring
- The single window service for the orientation and facilitation of the marketing and export of organic products

The DGAB also relies on a network of organic farming divisions located in the regional agricultural development commissions.

Through these different structures, the DGAB can guide and support new promoters wishing to invest in the organic sector and facilitate the various procedures for them.

➤ Technical Center for Organic Agriculture

This center was created by order of the Ministry of Agriculture and Hydraulic Resources of October 2, 1999, within the framework of law 96-04 of January 19, 1996 relating to technical centers in the agricultural sector.

It intervenes in particular on the technical side and can offer in this area significant support to promoters in the organic sector.

➤ Regional Center for Research in Horticulture and Organic Agriculture

The center was created in 2006. It covers the governorates of Sousse, Monastir, Mahdia and Sfax. Its missions mainly concern research and experimentation relating to horticultural and organic production systems.

➤ Incentive framework

The project could benefit from several incentive mechanisms during the creation and operation phases, including:

- Specific incentives for investment in the organic sector

The main grants are:

- a 30% subsidy granted to producers, processors and manufacturers for the purchase of equipment and instruments specific to organic production under Decree 99-2027 of September 13, 1999.

The list of equipment, instruments and means specific to organic production is fixed by decree (see legal framework)

- a subsidy of 70% of the costs of control and certification capped at 5000 dinars, in the form of an annual premium for five years by virtue of decree n° 99-2361 of October 27, 1999.

- Increase in the ceiling of the annual subsidy devoted to control and certification for producers who are members of development groups, cooperatives and professional groups, from 5 thousand to 10 thousand dinars per year

- Specific incentive for the export of organic Tunisian olive oil

Decree No. 2005-2177 of August 9, 2005 allowed private operators to export without ceiling packaged olive oil and organic olive oil within the framework of the tariff quota with the European Union in the authorized quota limit.

- Incentives granted within the framework of regional development⁸
- Projects carried out in regional development zones can benefit from a premium ranging from 8% to 25% of the investment with a ceiling of up to 2 MTD in priority zones for new promoters.
- A bonus ranging from 25% to 85% is also granted for State participation in infrastructure expenditure.

- Support for the employer's contribution to the legal social security scheme (CNSS) is also granted.
 - Exemption from corporation tax (IS) and personal income tax (IRPP) for the first 10 years and 50% reduction of this income or profits for the following 10 years.
 - Total deduction of income or profits reinvested in the subscription of the initial capital or its increase, including the profits reinvested within the company itself.
 - Exemption from the contribution to FOPROLOS (Housing Promotion Fund for Employees) during the first 5 years of exercise.
- Incentives granted to new promoters and SMEs⁹

New promoters can benefit from various supports in the form of:

- Participation in the capital by Sicars and FOPRODI
- Several study and investment bonuses
- Management of the employer's contribution to the social security system

- The support granted for the promotion of exports

Profits from exports are subject to a tax rate of 10% from January 1, 2013. In addition, the expenses incurred by the company for the promotion of exports can benefit from the support provided under the:

- FOPRODEX¹⁰: which grants bonuses ranging from 30% to 50% with ceilings depending on the nature of the actions carried out and aimed at promoting exports.

- FAMEX III: the third version of the Export Market Access Fund is in the implementation phase and should be operational in early 2016. FAMEX grants bonuses covering 50% of the budget spent on export promotion. A specific bonus for commercial establishment abroad has even been included in FAMEX II.
- FOPROHOC: The Finance Act of 2006 set up a specific promotional mechanism for packaged olive oil, the intervention and operating methods of which were set by Decree No. 2006-2095. This is the Fund for the Promotion of Packaged Olive Oil (FOPROHC). Thus, companies exporting packaged organic olive oil could benefit from financial support from this fund for their promotional activities in foreign markets.

➤ The support granted as part of the upgrading¹¹

After one year of its entry into production, the project can benefit from the advantages granted within the framework of the upgrading program to diversify its product range and/or develop its export presence. These are mainly the following mechanisms:

- Upgrading program: after 2 years of its entry into production, the company can benefit from the support granted within the framework of the upgrading comprising bonuses ranging from 10% to 20% for material investments and a bonus for 70% on intangible investments.
- Priority Technological Investments (ITP): after one year of its entry into production, the company can benefit from the bonuses provided for under the ITP covering up to 50% of the cost of material investments (with a ceiling of 100 thousand DT) and 70% of the cost of intangible investments (with a ceiling of 70 thousand DT).

4. INTERNATIONAL SITUATION AND EXPORT PROSPECTS

4.1. Organic sector in the Europe

Areas cultivated organically in the EU increased by 6.3% in 2019, approaching 14.7 million hectares. Organic represented approximately 8.1% of European UAA in 2019¹. At the end of 2019, 343,605 organic farms were registered in the EU, an increase of 5.4% compared to 2018. According to initial estimates, more than 354,000 organic farms were growing more than 15.3 million hectares in the EU in 2020. In 2019, four countries, Spain, France, Italy and Germany, accounted for 56% of areas cultivated organically in the EU and also 56% of organic farms. In the same year, with 15% of the EU's organic UAA, France was in second place for this concerning agricultural land cultivated organically, behind Spain, but it was only the fourteenth place in terms of the share of its agricultural territory in organic. In 2020, France has overtaken Spain, becoming the first country for organically cultivated areas.

Overall, the areas cultivated organically in the European Union have more than tripled between 2000 and 2020¹. During the period 2012-2019, growth was particularly strong and the share of organic farming in the EU increased from 5.7% to 8.1%. In Spain, organic areas have multiplied by more than six in twenty years, exceeding 2.4 million ha in 2020. After falling in 2013, organic areas have started to grow again from 2014. This growth is due more to the development of exports than to that of the domestic market. With more than one million hectares, Andalusia represented 45% of the areas cultivated organically in Spain in 2020.

The consumption of organic products was estimated at nearly €45.2

billion for 2019, i.e. an overall increase of 10.3% compared to 2018. It more than quadrupled between 2004 and 2019. Our provisional estimate for the European Union for 2020 is over €50 billion.

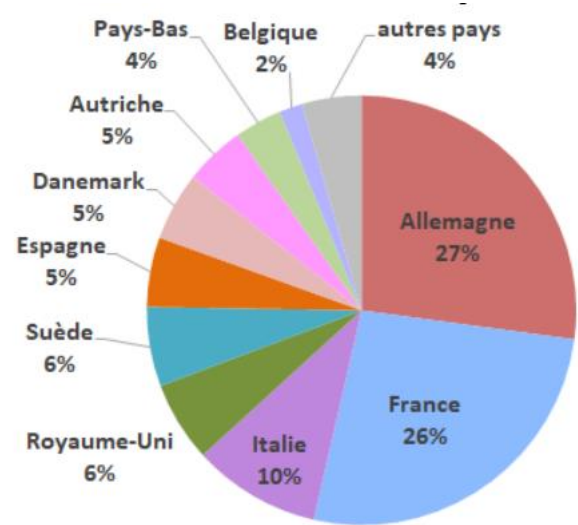
Figure7: Evolution of the European Union organic market



Source: Agence Bio

54% of organic products (in value) were consumed in two countries in 2019: Germany and France.

Figure8: Breakdown of the European Union organic market in 2019



4.2. Organic olive oil sector in the Europe

Organic olive groves represent 5.7% of the world's olive groves. They are mainly located around the Mediterranean (Spain, Italy, Tunisia and Greece).

In 2019, the main African countries exporting organic products to Italy were the Tunisia, Togo and Egypt. Almost all organic olive oil imported into Italy in 2019 came from Tunisia.

The main producers of organic olives are:

- Spain: 168,039 ha (6.7% of olive groves)
- Italy: 164,488 ha (14.4% of olive groves)
- Tunisia: 100,505 ha (5.6% of olive groves)

France is the country with the largest share of organic olive grove surfaces, i.e. 24.5%.

4.3. International organic olive oil markets

Broadly speaking, three types of markets for olive oil can be distinguished.

➤ Producing countries

Characterized by high per capita consumption and deep-rooted consumer traditions. These are relatively mature markets with well-established brands and/or bulk consumer traditions. Among the main countries in this category, we cite:

- Italy: 700,000 T
- Spain: 550,000 T

- Greece: 240,000 T
- Syria: 115,000 T
- Turkey: 110,000 T
- Tunisia: 36,000 T
- Morocco: 80,000 T
- Algeria: 42,000 T
- Portugal: 80,000 T

Consumption in these markets is fairly stable and the market is relatively closed (local brands, specific consumption traditions, customs duties on entry, etc.).

Italy, Spain, Greece and Portugal are the markets where there is a fairly significant consumption of organic oil unlike the rest where consumption is negligible.

➤ Consuming countries with little or no production

The consumption of olive oil in these markets has been introduced into consumption habits for a few years with nevertheless, consumption per inhabitant which remains relatively low. The local market is mainly supplied by imports. Among these markets, we cite:

- The USA: 263,000 T
- France: 109,000 T
- Brazil: 68,000 T
- England: 57,000 T
- Germany: 52,000 T
- Australia: 38,000 T
- Japan: 34,000 T

- Canada: 34,000 T

The levels of maturity of these markets are very different with some still recording strong growth in demand (e.g. USA) and others which

have been more or less stagnant for several years (e.g. France and Japan).

In fact, the American market remains the one with the strongest growth on an international scale (9% over the last 5 years) and which offers the most potential for development, with consumption close to 300,000 T in 2013. This demand is stimulated by a trend towards health and organic products.

With the exception of Brazil, all these markets offer interesting prospects for organic olive oil. In 2012, the market for organic olive oil amounted to \$142 million in the United States. For Germany, the current market should be around \$35 million (the latest available estimate places the market at \$31 million in 2011).

➤ Emerging Markets

These are markets where the consumption of olive oil is very recent. Per capita consumption is still very low, but imports are rising sharply. Among these markets, we cite:

- China: 40,000 T
- Russia: 24,000 T
- India: 3,000 T

These are markets offering very promising growth prospects and above all opportunities for setting up new suppliers and brands. Indeed, consumers in these markets do not yet have consumption habits and are therefore very open to new brands. In addition, the distribution channels are very dynamic with the continuous emergence of new operators looking for new suppliers. Prices and margins are generally comfortable and access costs are limited, especially in circuits other than traditional supermarkets.

Organic consumption per inhabitant remains very negligible. But,

given the size of the markets, some countries like China constitute a very attractive market which generates a few thousand tons of demand for organic olive oil per year.

The distribution channels for organic products include the traditional channels for conventional products, but also stores specializing in organic products which are highly developed, particularly in North America and Europe. Often, these different circuits are served by importers/distributors that should be targeted by Tunisian exporters.

4.4. Distribution channels

There are many stakeholders in the distribution chain of packaged olive oil in general. Two levels can be distinguished:

➤ Intermediate-level stakeholders

They are generally positioned between the exporter and the final distribution circuit. We can distinguish:

- The broker or commercial agent
- The international trading company
- The importer or importer/distributor or wholesaler
- Distribution platforms: which fulfil a purely logistical function

Going through one or more intermediary players depends on the practices on the target market and the choices of the end distributors. Thus, going through a "category captain" importer is almost an obligation in England.

From 2006, the EU adopted a regulation (N°1301/2006 of August 31, 2006) establishing common rules for the administration of import tariff quotas, including that of olive oil. This new regulation imposed certain binding rules, particularly in terms of the conditions to be met by European applicants for the quota, who should meet certain

criteria such as having a history of importing olive oil over the previous two years. This regulation has further complicated the mission of Tunisian operators to identify and prospect new customers in these markets. Many are forced to go through "nominees" which results in additional costs.

➤ Final distributors

This is the last link in the distribution circuit before the final consumer and essentially includes for packaged organic olive oil:

- Large distribution chains: supermarkets, hypermarkets, warehouse clubs (USA), discounts, etc. These circuits are dominated by the major international brands and private labels. Margins are very tight and require perfect cost control from suppliers. The access costs materialized by referencing costs and marketing budgets are very high.

- The Gourmet Stores: the size and accessibility of the chains positioned on this circuit vary greatly. Indeed, gourmet stores are looking for very specific products with differentiating elements that could interest the "gourmet" consumer. The prices and the margins are more interesting than the classic GMS but the access costs are very high, especially in the big chains.

- Stores specializing in ORGANIC: they could also be classified in the GMS or gourmet category depending on the positioning of each chain.

Indeed, organic has become in some cases a sector as competitive as conventional. However, access to an abundant and competitive organic supply could be an asset for Tunisian operators.

- Small and medium-sized chains: these are generally new

distribution operators who control a certain number of small stores. They therefore offer an outlet for new brands and new suppliers. Individual grocers are an extreme variation of this model. However, their diffuse nature makes direct targeting by Tunisian exporters difficult. Thus, it is essential to go through importers/wholesalers specialized in these circuits. They can constitute a non-negligible potential in certain markets, particularly in ethnic circuits. However, the distribution of organic products in this niche is very marginal.

The catering niche, communities, hotels and, to a lesser extent, the food industry offer prospects for conventional olive oil but very little for organic.

In addition to the identification of distribution channels, the development of own brands is the fundamental issue for exporters of organic and conventional packaged olive oil. Thus, most of the exporters are carried out under the brands of distributors and/or importers who control the end market.

For organic olive oil, the positioning of Italian and Spanish brands is not as predominant as for conventional. Indeed, organic olive oil is a relatively recent market with very strong growth. Such a market offers more positioning opportunities for new, lesser-known operators.

Thus, in the niche of organic olive oil, Tunisia has a better chance of succeeding in imposing products with Tunisian brands and positioning itself as a supplier of packaged oil and not as a producer of bulk and conditioner for account. The development of the partnership could constitute one of the means to be implemented to achieve such an objective.

4.5. Label Organic

Organic labelling is a fundamental element in the marketing of organic products. Indeed, it is a distinctive sign often attributed by independent organizations and allowing recognizing the biological product. The first labels launched were:

- The Demeter in Germany in 1928
- The SOIL Association in England in the late 1940s
- Nature and Progress in France launched in 1964

With the proliferation of private labels, States have become involved in organic labelling and several countries have set up their own labels, the main ones being:

Label / Country	label
AB in France	
BIO-Siegel in Germany	
AB in Europe	
USDA Organic in US	

BIO in Tunisia	
----------------	---



Organic olive oil packaging was identified as a partnership opportunity in the SWOT analysis considering the following factors:

- International demand is growing, particularly in Europe
- The Tunisian product benefits from advantages granted within the framework of the agreements with the European Union, in particular the tariff quota
- Tunisian production has significant development potential with competitive costs
- The region of Sicily has expertise in the packaging and marketing of organic olive oil, particularly on European markets
- The production development potential in Sicily is limited, which could make Tunisia a site of choice for expanding the range and offering complementary products.

5. THE PROJECT

This study concerns the installation of an organic olive oil orchard. It will be installed in the south of Tunisia with a total area of 20 ha and 2 ha of an old plantation.

This study proposes to detail the technical components of the proposed development project and the design of the components to be carried out. It also allows you to decide the financing plan of the project and evaluate its financial profitability.

Figure9: Satellite image of the field



5.1. Land development

➤ Soil preparation

The most suitable preparation method for these soils is cross-welding. This plow allows a complete aeration of the arable layer, eliminates soil compaction and without depositing the limestone crust on the surface, in the same way the layer rich in organic matter is preserved on the surface for a good start of the rapid root development of young trees that favor their early entry into production.

➤ **Basic manure**

According to the results of the analysis, the soil is considered rich and the orchard will be irrigated, it is not necessary to bury the basic fertilizer before planting.

5.2 Installation of plantations

➤ **Choice of variety**

The variety is chosen according to its productivity and its harvest time, which allows its production to be included in the national production avoiding periods of high production. The choice refers to the olive variety KORONEIKI.

It has an open port, very high productivity, an oil yield of 20%, excellent oil quality and great stability.

It is a variety characterized by an early entry into production; the tree has an early flowering and the fruits ripen relatively early, these olives are small (they weigh about 0.3g to 1.0g) and measure 12-15mm, oval in shape and pointed at the top, have a high oil content, is classified as a variety of sweet oil.

➤ **Planting density**

In our case, we adopt a planting spacing of 6X3, that is, 555 trees/ha and between 8 to 10 years depending on the speed of development of the orchard, we will uproot a tree on the line and replant it.

➤ **Planting season**

The establishment of olive plants delivered in plastic bags will be from September 2021 in autumn as soon as summer temperatures drop.

➤ **Planting of trees**

Immediately after planting the plants are irrigated after making the pond. This irrigation allows obtaining a good contact between the clod and the soil and thus avoiding the formation of an air pocket, which is unfavorable for recovery. Early installation of the irrigation system ensures the normal development of plants and does not delay the onset of fruiting.

➤ **Hydromineral nutrition**

During the months following the planting of olive trees, care is reduced to watering provided with a frequency that varies with the weather. The contribution of phosphorus-rich fertilizer such

as MAP and 13-40-13 are necessary for the resumption of root development, one or two applications before the onset of humic and fulvic acids.

➤ **Soil Maintenance**

For young organic plantations, the use of herbicides won't be considered. The weeding of the ground on the rows of trees is done manually during these first three years. In the line spacing, we limit ourselves to one or two superficial plows of the soil in early spring and then to pass with the grinder to cut the weeds. This greasing with spontaneous vegetation will have beneficial effects on the structure of the soil and on its biological activity and will prevent soil erosion.

➤ **Organic fertilizers**

It is strongly recommended to add organic fertilizer in the form of decomposed manure. . In the project it is planned to apply about 3-5 tons of manure per hectare before planting.

➤ **Localized irrigation**

Olive trees are water-demanding. The irrigation period generally runs from February to October, with varying doses that depend on the evapotranspiration (ETP) of the plant.

In addition, it is advisable not to suddenly stop watering at the end of the season (end of September/October), because this period is sensitive for the fruits and can lead to problems such as blackening and falling fruits.

It is advisable to adjust irrigation to the real needs of crops based on potential evapotranspiration (ETP) and crop coefficient (Kc).

➤ **Yields and production.**

The productivity of the plantations depended on several factors, including the quality of the seedlings, installation techniques and tree management.

In properly managed Koroneiki olive plantations, the average yield achieved is about 9 t/ha in the year of full development.

5.3. Agriculture Equipment

Agriculture Equipment

The list of main equipment needed to operate the orchard is as follows:

- 1 Tractor 80 hp: 30,000 Euros
- 1 sprayer of 600 l with lance: 2,135 Euros

- 1 Cistern 3000 L: 2,657 Euros
- 1 Barbed grower: 983 Euros
- 1 3T trailer: 2,866 Euros
- 1 offset: 5,636 Euros

The acquisition cost of this equipment is estimated at 44,299 Euros

Photovoltaic equipment

The acquisition cost of this equipment is estimated at 15,463 Euros

Localized irrigation equipment

It is about equipping the plantations (20 ha) by a drip network 33,793 Euros.

5.4. Approach fees and miscellaneous

These are expenses caused by price increases and contingencies related to the completion of the project. The total amount of approach and miscellaneous costs is estimated at 6,152 Euros, or nearly 3% of the cost of the physical components of the project.

5.5. Study costs

The study costs for this project amount to 1,648 Euros, or nearly 1% of the total cost of the project.

5.6. Implementation schedule

The proposed implementation program takes into account the preparation of the soil, the establishment of plantations and the purchase of agricultural machinery and equipment. This program will be executed in two years (2022-2023).

5.7. Employment

The implementation of the project and its management will be ensured by the promoter himself. In addition, the execution of daily operations will require the recruitment of a worker specialized in fruit tree cultivation and permanent. The systematic use of casual labour during peak periods (harvesting, pruning, etc.) is also planned.

5.8. Flow of productions

The marketing of the products generated by this project will be done without major difficulties. Indeed, the olives of this variety are demanded on the local market at very remunerative prices compared to other varieties.

In addition, the project area is still empty in olive growing compared to other areas. The

proximity of the Greater Tunis and Sahel project is another favourable asset for the marketing of farm products.

6. Investment and forecast profitability

6.1. Financial analysis

Basic assumptions

The financial profitability of the project was calculated taking into account a project life of 20 years. The working capital was estimated at 5000 Euros to meet the various charges of the first year. The depreciation charge was calculated on the basis of the following assumptions:

- Promotion and Construction 10 years
- Agricultural machinery 6 years
- Drip irrigation equipment 6 years
- Plantations 20 years

The income from the project comes mainly from the sale of olives.

6.2. Investment and Funding Scheme

The total cost of the selected components is estimated at 170,000 Euros, broken down by component as follows:

6.3. Forecast profitability

The project is showing positive gross results since its first year of operation.

The cash flow generated is positive from the first year of the project. These results will evolve from 9200 dinars in the first year of the project to nearly 205,510 dinars at cruising speed (13th year).

The cash flow generated is positive from the first year of the project. The latter reached in the year of cruising to nearly 186,028 dinars (13th year).

The internal rate of return

The internal rate of return calculated over a period of 20 years, the internal rate of return

generated by the project is satisfactory (12%).

Sensitivity tests for a 2% increase in expenses and investments or a 5% decrease in revenue yield the following results:

IRR (+2% charges): 12%

IRR (-5% of revenue): 11%

IRR (+5% of investments): 11%

6.4. Financial Analysis

The project's income comes mainly from the sales of the olives.

At cruising speed (13th year), the turnover would reach nearly 88,600 Euros.

The main expense headings relate to stored purchases (fertilizers, treatment products, etc.), labour costs, irrigation water costs and external services.

In the year of full development (13th year), these operating expenses would reach nearly 20,096 Euros, or 22.68% of turnover.

7. Appendices

7.1. Financial Analysis

Table1: investment schemes

	Total cost	Percentage
Layout	11000	2%
Construction	101500	16%
Plantation	202848	32%
Equipments	286251	45%
Fees	18457	3%
Working capital	15000	2%
Total	635056	100%

Table2: Implementation Schedule

	Total cost	Year 1	Year 2	Percentage
Layout	11000	11000	0	2%
Construction	101500	101500	0	16%
Plantation	202848	202848	0	32%
Equipments	286251	153354	132897	45%
Fees	18457	18457	0	3%
Working capital	15000	15000	0	2%
Total	635056	502159	132897	100%

Table3: Depreciation

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Layout	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00	550.00
Construction	1150.00	1150.00	1150.00	1150.00	1150.00	1150.00	1150.00	1150.00	1150.00	1150.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Plantation	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00	10142.00
Equipments	25599.00	47709.00	47709.00	47709.00	47709.00	47709.00	47709.00	47709.00	22150.00											
Fees	3691.00	3691.00	3691.00	3691.00	3691.00	3691.00														
Total	41132.00	63242.00	63242.00	63242.00	63242.00	63242.00	59551.00	33992.00	11842.00	11842.00	10692.00	10692.00	10692.00	10692.00	10692.00	10692.00	10692.00	10692.00	10692.00	10692.00

Table4: Return on Investment and sensitivity test

Années	Invest. & renouvel.	Situation avec projet		Cash flow de base	Test 1	Test 2	Test 3
		Charges	Recettes				
1	640000	11800	21000	-630800	-632300	-631980	-694800
2		11430	21000	9570	7470	8427	9570
3		11567	21000	9434	7334	8277	9434
4		22010	42600	20590	16330	18389	20590
5	5000	24020	64200	35180	28760	32778	34680
6		33898	78600	44702	36842	41312	44702
7		38424	107400	68976	58236	65133	68976
8	15000	42318	150600	93282	78222	89050	91782
9		48221	150600	102379	87319	97556	102379
10		52133	193800	141667	122287	136453	141667
11	30000	56136	265800	179664	153084	174050	176664
12		58208	265800	207592	181012	201771	207592
13		60290	265800	205510	178930	199481	205510
14		64244	265800	201556	174976	195132	201556
15		68209	265800	197591	171011	190770	197591
16		70789	265800	195011	168431	187932	195011
17		72920	265800	192880	166300	185589	192880
18		75063	265800	190737	164157	183230	190737
19		77221	265800	188579	161999	180857	188579
20		79394	265800	186406	159826	178466	186406
			TRI	12%	11%	12%	11%

Table5: Cost evolution

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Production	2600.00	2700.00	2800.00	12000.00	14000.00	16000.00	26000.00	28000.00	30000.00	33000.00	40000.00	42000.00	44000.00	45000.00	48000.00	50000.00	55200.00	58000.00	60000.00	62000.00
Employees	8400.00	8400.00	8400.00	8400.00	8400.00	8820.00	8820.00	8820.00	8820.00	8820.00	8820.00	8820.00	9261.00	9261.00	9261.00	9261.00	9261.00	9261.00	9724.00	9724.00
Total	11000.00	11100.00	11200.00	20400.00	22400.00	24820.00	34820.00	36820.00	38820.00	41820.00	48820.00	50820.00	53261.00	54261.00	57261.00	59261.00	64461.00	67261.00	69724.00	71724.00

Table6: Cashflow

RUBRIQUES	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
RESSOURCES															
- Autofinancement	640 000														
- Cash flow	9 200	9 570	9 434	20 590	40 180	44 702	68 976	108 282	102 379	141 667	189 767	187 902	182 470	182 470	178 901
S/TOTAL 1	649 200	9 570	9 434	20 590	40 180	44 702	68 976	108 282	102 379	141 667	189 767	187 902	182 470	182 470	178 901
EMPLOIS															
- Investissement & renouvellement	640 000				5000			30 000			15 000				
S/TOTAL 2	640 000	0	0	0	5 000	0	0	30 000	0	0	15 000	0	0	0	0
SOLDE NET DE TRESORERIE	9 200	9 570	9 434	20 590	35 180	44 702	68 976	78 282	102 379	141 667	174 767	187 902	182 470	182 470	178 901
SOLDE CUMULE DE TRESORERIE	9 200	18 770	28 204	48 794	83 973	128 675	197 651	275 932	378 311	519 977	694 744	882 646	1 065 116	1 247 586	1 426 487

7.2. Technical Data

Table7: Occupation of future land

[illegible]

Table8: Evolution of profitability

[illegible]

Table9: Evolution of production

ANNEE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Cultures															
Olivier JP	0	0	0	18	36	48	72	108	144	168	204	204	204	204	204
Olivier AP	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
Total (tonnes)	14,00	14,00	14,00	32,00	50,00	62,00	86,00	122,00	158,00	182,00	218,00	218,00	218,00	218,00	218,00

Table10: Evolution of the value of production

ANNEE		P.V	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
COMPOSANTE	UNITE	(DT)															
Olivier JP	Tonne	1200,00	0	0	0	21 600	43 200	57 600	86 400	129 600	129 600	172 800	244 800	244 800	244 800	244 800	244 800
Olivier AP	Tonne	1500,00	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000	21 000
Total			21 000	21 000	21 000	42 600	64 200	78 600	107 400	150 600	150 600	193 800	265 800	265 800	265 800	265 800	265 800

