ΝΕΑ
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ΓΕΝΙΑ

SECTORAL STUDY

VITICULTURE, TABLE & WINE GRAPES VARIETIES

Coordinator: Dr. Christos Vasilikiotis, Assistant Professor
Project Leader: Konstantinos Zoukidis, Adjunct Lecturer & Researcher Team Members: Dr. Eleni Topalidou, Lecturer & Researcher, Michalis Genitsariotis, Adjunct Lecturer & Researcher, Dr. Ilias Kalfas, Researcher

PLANNING AND IMPLEMENTATION : **AMERICAN FARM SCHOOL**

The program **NEW AGRICULTURE FOR A NEW GENERATION** is

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Perrotis College

Agriculture · Environment · Life Sciences

New Agriculture for a New Generation:

Recharging Greek Youth to Revitalize the Agriculture and Food Sector of the Greek Economy

Viticulture, Table & Wine Grapes Varieties

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Executive summary

Greece is experiencing the consequences of the hardest financial crisis of its history. The economic crisis in Greece, have a great impact on unemployment and as a result companies are out of business and many people especially young ones are unemployed. In addition, economic crisis, from one hand leads more and more people, special young people with many skills to leave from Greece to other countries and from the other hand, turns young unemployed people to the agricultural sector.

The current project's aim is to determine the potential of viticulture, table and grape varieties in Greece could be an answer for recharging youth and if this sector could improve the national economy and reverse this negative trend.

Grape cultivation and wine making have a distinguished place in the history of Western civilization. The ancient Greeks gave an importance to wine, which greatly exceeded its role as a beverage. The production of wine and table grape has been an important part of Greek culture for many centuries. Nowadays Greece holds the 13th place on vineyard surface area. It is one of the first table grape producing (4^{th}) countries in Europe, first producer of currants (Black Corinth) of the world production and eighth exported country in dried grapes worldwide.

SWOT analysis was conducted for this sector which revealed the fact that this sector is valuable and with appropriate choices can recharge youth. Results showed that there is a great potential for table grapes in Greece and for wine grapes could be potential if the problem with the limited available plating rights to establish new vineyards, will be resolved.

Executive summary

Ελλάδα βιώνει τις συνέπειες της μεγαλύτερης οικονομικής κρίσης της σύγχρονης ιστορίας της. Η οικονομική κρίση στην Ελλάδα, έχει μεγάλο αντίκτυπο στην ανεργία και ως εκτούτου οι εταιρείες και οι επιχειρήσεις κλείνουν και πολλοί άνθρωποι κυρίως νέοι να μένουν άνεργοι.

Επιπλέον, η οικονομική κρίση, από τη μία πλευρά οδηγεί όλο και περισσότερους ανθρώπους, ειδικότερα νέους με πολλές δεξιότητες για να φεύγουν από την Ελλάδα προς άλλες χώρες και από την άλλη μεριά, στρέφει τους νέους ανέργους στον γεωργικό τομέα.

Στόχος της συγκεκριμένης μελέτης είναι να διερευνήσει αν ο κλάδος της αμπελουργίας, θα μπορούσε να είναι η απάντηση στην αναζωογόνηση της νεολαίας και αν ο τομέας αυτός θα μπορούσε να βελτιώσει την εθνική οικονομία και να ανατρέψουμε αυτή την αρνητική τάση.

Καλλιέργεια των αμπελιών και την παραγωγή κρασιού κατέχει μια ξεχωριστή θέση στην ιστορία του δυτικού πολιτισμού. Οι αρχαίοι Έλληνες έδωσαν ιδιαίτερη σημασία στο κρασί, το οποίο ξεχώριζε ως ποτό. Η παραγωγή του επιτραπέζιου και του οινοποιήσιμου κατέχει ένα σημαντικό μερίδιο στο ελληνικό πολιτισμό, για πολλούς αιώνες. Σήμερα η Ελλάδα κατέχει την 13η θέση σε έκταση σε αμπελώνες. Είναι μία από τις πρώτες χώρες στην παραγωγή επιτραπέζιων σταφυλιών (4^{η}) στην Ευρώπη, πρώτος παραγωγός της κορινθιακής σταφίδας (Μαύρη Κορινθιακή σταφίδα) της παγκόσμιας παραγωγής και είναι η όγδοη χώρα σε εξαγωγές σταφίδας σε όλο τον κόσμο.

Η ανάλυση της SWOT που διενεργήθηκε για τον κλάδο επιβεβαίωσε τη μεγάλη του αξία αλλά και τις προοπτικές που έχει ιδιαίτερα για την απασχόληση των νέων. Τα αποτελέσματα έδειξαν ότι στην Ελλάδα το επιτραπέζιο σταφύλι έχει μεγάλες δυνατότητες και όσο αφορά τα οινοποιήσιμα σταφύλια θα μπορούσε να είναι δυνατότητες, εφόσον επιλυθεί το πρόβλημα με τα περιορισμένα δικαιώματα φύτευσης.

Final Report

Sectoral Study No 3 Viticulture,

Table & Wine Grapes Varieties
For Greece

Thessaloniki, December 2015

Table of Contents

List of Abbreviations

ELSTAT: Hellenic Statistical Authority

EUROSTAT: European Statistical Authority

FAOSTAT: Statistical service of Food and Agriculture Organization of United

Nations ITC: International Trade Center

MINAGRIC Ministry of Rural Development and Food (Ministry of Agriculture)

OPEKEPE: Greek Payment Authority of Common Agricultural Policy

NOP: National Organic Program (USDA)

CMT: Central Fruit and Vegetable Market of Thessaloniki

KEOSOE: Greek Central Cooperative Union of Wine

Products OIV: International Organization of Vine and Wine

List of Tables

List of Figures

1. Introduction

1.1 Agricultural sector in Greece

General information and Economic characteristics

Greece belongs to the Mediterranean basin and is divided into several geographical regions (Macedonia, Thrace, Epirus, Thessaly, Central Greece and Evia, Peloponnese, Ionian islands, Aegean islands – including Cyclades, Sporades, Dodecanese and Crete). The landscape is quite complex, characterized by different elements: sea, mountainous areas, river and coastal plains, interior valleys and basins. The largest plains are formed in Macedonia and Thrace and the second largest lowland area is found in Thessaly. The climate is characterized as temperate and mild, with hot, dry summers and mild, rainy winters. Snowfall is also common during winters in northern and north-western mountainous areas (Galanopoulos and Mattas, 2006). The different range of the landscapes and the differentiation in the climate among the different compartments of the country allow the creation of a wide variety of micro-climates and production conditions for many and diverse agricultural products.

The total area of Greece is estimated at 131,957 Km2, (European Commission, 2014) out of which 35,600.0 thousand stremmas (in 2012) are used in agriculture (ELSTAT, 2015). From 2010 to 2011 the utilized agricultural area was decreased by 2.9%, whereas from 2011 to 2012 was decreased by 0.2% (Table 1) (ELSTAT, 2015). In 2012, the utilization of the cultivated land/area was distributed as follows: 54.6% for arable farming, 2.8% for vegetables, 32.0% for permanent crops and 10.6% was fallow land (Table 1). In 2012 about the agricultural holdings of small or medium average size (5.8 hectares) were estimated at
717.000 (Tsiforos, 2015). Although, the physical context and the climate are ideal for the development of agriculture, the sector is significantly limited by the fragmentation of the agricultural land and the aging of the agricultural population, especially in the rural areas (Paseges, 2011, European Commission, 2013a) (Table 2).

The primary sector in Greece is a fundamental component of the national economy and especially for rural areas, which represent more than 80% of the territory in Greece (Rural regions = 82%, Intermediate = 12.1% and Urban = 5.7%) (European Commission, 2013) (Table 2).

The contribution of the primary sector to the Gross Value Added (GVA) declined considerably within the last 20 years; it was 8.8% in 1995, 6.1% in 2000 and 4.3% in 2014 (Piraeus Bank, 2015). Nevertheless, the agricultural sector occupies an important position in the economy of the country and in 2012 contributed 2.8% of the Gross Domestic Product (GDP) (Tsiforos, 2015), whereas in 2014 the Gross Value Added of agricultural sector contributed 3.3% to the Gross Domestic Product (GDP) (Piraeus, 2015) and was estimated at
10.6 billion euros with crop output (€6.9 billion), animal output (€2.6 billion), the value of secondary services (€349 million) and secondary activities (€698 million) included (Tsiforos 2015). The GVA of the country at basic prices stands at the 5.5 billion euros and corresponds to approximately 5.2% out of the total economy. This ratio, although not high enough, is more than the double the average in the EU-27 (2.5%) (Tsiforos, 2015).

The implementation of the Common Agricultural Policy (CAP) of Europe in Greece during the last decades had a large impact on the agricultural structure and the economy of the country. Implementation of CAP encountered opposition due to certain particularities of the Greek agricultural sector (Hellenic Ministry for the Environment, Physical Planning and Public Works, 2008). Due to the continuous reforms the sector was limited, traditional Greek cultures (eg. legumes, forage crops) were abounded and replaced by crops under subsidy programs, the competitiveness and the farm income were reduced, whereas the need for hired labor was increased (Kaditi, 2013). However, the new CAP aimed to more efficient and more sustainable management of the agricultural land, the adaptation of environmentally friendly agricultural practices and the results are already satisfactory under the Operational Programs "Agricultural Development and Reform of the country-side,2000-2006" and "National Strategic Plan for Agricultural Development, 2017-2013" (Hellenic Ministry for the Environment, Physical Planning and Public Works, 2008).

During the period 2005-2014, the Gross Value Added declined considerably (about 32%). In the same period the intermediate consumption (which makes up most of the input costs in agricultural production) increased at about 20.4% (was 4.5 billion in 2005 and 5.4 billion euros in 2014). Since the beginning of the recession, the input costs increased at about 14.7% (Fig. 1) (Tsiforos 2015).

Table 1 Areas under cultivation in Greece total during 2010 – 2012 in thousand stremmas. The type of cultivated crops is also presented. (ELSTAT, 2012 Annual Agricultural Statistical Survey).

Crop type	2010	2011	2012	2011/2010	2012/2011
Total cultivated agricultural land	36,709.3	35,666.2	35,600.0	-2.9	-0.2
Irrigated	13,718.0	13,844.8	13,860.6	0.9	0.1
1. Arable land	19,619.2	19,478.3	19,441.6	-0.7	-0.2
Irrigated	8,368.0	8,536.8	8,499.6	2.0	-0.4
2. Crops under vegetables (net area)	1,041.3	1,004.6	985,7	-3,5	-1,9
Irrigated	1,014.7	980,4	962,1	-3,4	-1,9
3. Permanent crops [2]	11,373.7	11,374.8	11,384.8	0.0	0.1
Irrigated	4,335.3	4,327.6	4,346.8	-0.2	0.4
4. Fallow land	4,675.1	3,808.5	3,787.9	-18.5	-0.5
1. Arable land					
1.1 Cereals for grain	11,576.3	11,161.0	11,251.4	-3.6	0.8
Common wheat	1,553.0	1,563.3	1,724.4	0.7	10.3
Durum wheat	5,821.8	5,315.0	5,165.5	-8.7	-2.8
Barley	1,207.6	1,211.7	1,279.5	0.3	5.6
Rice	300.5	309.1	307.9	2.9	-0.4
Maize	2,059.8	2,140.4	2,129.0	3.9	-0.5
Other cereals	633.6	621.4	645.0	-1.9	3.8
1.2 Edible pulses	[193.8]	203.3	206.7	4.9	1.7
Beans	96.2	97.8	98.1	1.7	0.3
Chickpeas	29.5	30,.9	33.2	4.8	7.4
Lentils	41.1	46,.5	49.1	13.1	5.6
Other edible pulses	27.0	28.1	26.3	4.1	-6.4
1.3 Industrial Plants	3,765.8	4,092.9	3,905.6	8.7	-4.6
Tobacco	160.4	158.9	164.0	-0.9	3.2
Cotton	2,769.2	2,975.1	2.914.7	7.4	-2.0
Sunflower	534.8	691.4	613.8	29.3	-11.2
Groundnuts	5.6	5.6	6.7	0.0	19.6
Sugar beets	156.0	96.1	111.3	-38.4	15.8
Oil seed rape	...	.....	76.2	...	.....
Other industrial plants	[139.7]	165.8	18.9	18.7	-88.6
1.4 Aromatic plants	23.1	19.3	18.1	-16.5	-6.2
1.5 Fodder plants	3,584.9	3,548.6	3,599.0	-1.0	1.4
1.6 Melons and water melons		252.2	235.7	-2.1	-6.5
Watermelons	168.2	167.1	157.6	-0.7	-5.7
Melons	89.2	85.1	78.1	-4.6	-8.2
1.7 Potatoes	448.0	448.1	441.4	0.0	-1.5
2. Crops under vegetables **2.1** Vegetable crops	1,105.0	1,069.7	1,050.5	-3.2	-1.8
Tomatoes	317.8	280.5	275.0	-11.7	-2.0
Industrial tomatoes	138.3	105.8	101.3	-23.5	-4.3
Tomatoes grown in the open	144.7	140.6	140.8	-2.8	0.1

Crop type	2010	2011	2012	2011/2010	2012/2011
Tomatoes grown in greenhouses	34.8	34.1	32.9	-1.9	-3.5
Green beans	74.0	73.9	72.1	-0.1	-2.4
Cabbages – cauliflowers	118.7	116.8	114.8	-1.6	-1.7
Lettuce	55.0	55.4	56.1	0.8	1.3
Other vegetables	539.5	543.1	532.5	0.7	-2.0
2.2 Market flower gardens	7.0	7.1	6.5	1.2	-8.5

[1] 1 stremma = 1,000 m^2 or 0.1 ha

[2] Areas under nurseries are not included due to their small contribution to the total of the cultivated area

[3] Also included greenhouses with vegetables and flowers. Vegetables include tomatoes, cucumbers,etc.

Note: Any discrepancies in the sums are due torounding.
Percentage changes were calculated beforerounding.

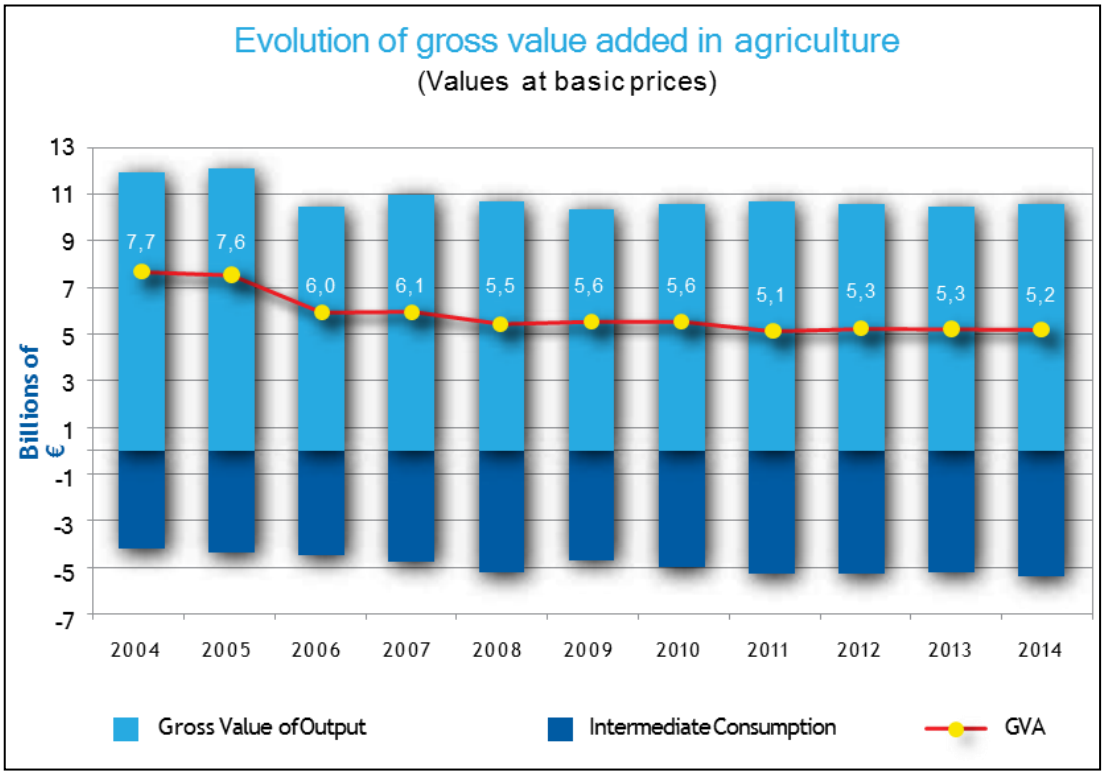


Figure 1 Evolution of Gross Value Added in Greek Agriculture in relation to the Intermediate Consumption throughout the period 2005-2015. (Tsiforos, 2015)

Table 2 Importance of rural areas. Source European Commission, Agriculture in the EU, Statistical and Economic Information, Report 2013, December 2013

	Territory (%)	Population (%)	Employment (%)	GVA (%)
		2010		
Rural	82	42.8	41.4	34.2
Intermediate	12.1	10.6	10.2	8.8
Urban	5.7	46.7	48.4	56.9
Age structure by typology of regions				
		2012		
	% 0-14 y.o	% 15-64 y.o	% 65+ y.o.	
Rural	14.0	64.2	21.8	
Intermediate	15.2	66.0	18.8	
Urban	14.5	67.5	18.0	

The agricultural sector plays a pivotal role in the food and beverage industry, because it is the most important supplier for processing, consisting of 21.2% of the enterprises, people employed at 25.2% and the Gross Value Added at 25.2% among all the sectors of the processing branches for 2012 (Tsiforos, 2015).

Crop production in Greece dominates the agricultural sector and in terms of the total agricultural production remains more important than livestock as indicated by the following numbers during the period 2012-2014: 19% vegetables, 18.5% fruits, 14.5% livestock, 14% livestock products (e.g. milk, eggs etc), 15% cereals and 8% olive oil (Piraeus Bank, 2015). During the past few years, significant changes were observed in terms of volume production of agricultural products (durum wheat, grain maize, cotton, sugar beets, potatoes, fruits etc) by groups and species of products as presented in Table 3 (ELSTAT, 2015). The agricultural sector is one of the key contributors to the country's external balance and remains stable and dynamic even during the period of economic recession. Agricultural products comprise 19% of total exports (Piraeus Bank, 2015) and represent a value close to 5 billion euros. In recent years the main exported products (olives and virgin olive oil, dairy products, fruits such as apricots, cherries, cotton etc) are highly ranked in terms of quality, which makes them more

competitive (Piraeus Bank 2015, Tsiforos, 2015). On the other hand, the imported agricultural products (including food and beverages) cover 12.9% out of the total imports resulting in a negative trade balance, estimated at approximately 1.6 billion euros in 2013 (Tsiforos, 2015).

Employment Data

The unemployment rate in Greece, estimated at 24.6% in August 2015, was slightly reduced since August 2014 (26.2%) (ELSTAT, 2015) but it is still the highest rate among the EU countries, followed by Spain (22.2%) (Eurostat, 2015a). The total number of employed people in August 2015 was estimated at 3.614.192 people, the unemployed at 1.180.001 and economically inactive population was estimated at 3.286.686 people. In regards to the two genders, unemployment is higher in women than in men, estimated at 28.5% in August 2015 (Table 4) (ELSTAT, 2015). At the same time unemployment rate in youth (young persons under 25) was estimated at 47.9% and was again the highest among the EU countries (Eurostat 2015). Unemployment rate is also high (31.3%) in the age group of 25-34 years old (Table 5) (ELSTAT 2015). Moreover, according to the Organization for Economic Cooperation and Development (OECD) 27% of youth (aged 15-29 years old) was neither in employment nor in training (OECD 2015).

Table 3 Production of agricultural products. Greece total, 2010 – 2012 in thousand tones. (ELSTAT, 2012 Annual Agricultural Statistical Survey).

				Change (%)	
Crop type	2010	2011	2012	2011/2010	2012/2011
Arable land					
1.1 Cereals for grain					
Common wheat	415.8	441.5	463.1	6.2	4,9
Durum wheat	1,504.5	1,416.0	1,373.9	-5.9	-3,0
Barley	311.1	319.0	336.3	2.5	5,4
Rice	208.2	250.7	230.7	20.4	-8,0
Maize	2,138.5	2,291.8	2,226.2	7.2	-2,9
1.2 Edible pulses					
Beans	20.2	22,7	18.2	12.6	-19.8

Crop type	2010	2011	2012	Change (%) 2011/2010	2012/2011
Chickpeas	3.4	3.7	3.9	9,4	5.2
Lentils	4.0	4.8	6.5	19,6	35.5
1.3 Industrial plants					
Cotton	29.9	32.0	34.2	7.2	6.9
Sunflower	710.5	814.5	795.5	14.6	-2.3
Groundnuts	116.0	147.7	137.6	27.3	-6.8
Sugar beets	1.9	2.0	2.5	4.6	24.0
Oil seed rape	889.4	581.5	647.8	-34.6	11.4
1.4 Fodder plants	…..	…..	14.1	……	……
1.5 melons	Fodder 2,490.2	2,457.6	2,522.7	-1.3	2.6
Melons					
1.6 Potatoes					
2. Vegetables	185.4	176.6	170.9	-4.7	-3.3
Industrial tomatoes	926.7	905.9	882.8	-2.2	-2.5
Tomatoes grown in the open					
Tomatoes grown in greenhouses	1,475.7 811.8	1,294.6 643.9	1,234.3 617.0	-12.3 -20.7	-4.7 -4.2
Green beans	405.0	400.3	396.4	-1.2	-1.0
Cabbages -	259.0	250.4	220.8	-3.3	-11.8
cauliflowers Lettuce	69.9	68.3	66.3	-2.3	-2.9
3. Permanent crops	223.7	230.1	224.7	2.9	-2.3
3.1 Vineyards: grapes and raisins	82.6	83.7	80.1	1.3	-4.3
Wine	545.3	512.3	526.1	-6,1	2.7
Table grapes	174.9	147.5	139.4	-15.7	-5.3
Vines for currants	179.2	173.2	184.2	-3.3	6.3
Must	339.1	327.1	337.3	-3.5	3.1
3.2 Compact plantations					
3.2.1 Citrus trees					
Orange trees	905.1	847.3	849.6	-6.4	0.3
Mandarin trees	137.1	144.3	160.5	5.3	11.2
3.2.2 Fruit trees					
Apples trees	273.8	274.1	265.8	0.1	-3.0
Peach - Nectarine trees	822.3	821.0	825.9	-0.2	0.6
Apricot trees	62.7	66.8	79.5	6.5	19.0
Cherry trees	44.9	49.4	47.3	10.0	-4.3
3.2.3 Nut trees					

Crop type	2010	2011	2012	Change (%) 2011/2010	2012/2011
Walnut trees	22.6	22.9	23.7	1.3	3.5
Pistachio trees	7,8	8,0	8.0	2,6	-0.7
Fig trees	9.6	10.9	11,3	13.5	3.7
3.2.4 Olives					
Edible olives	308.9	273.5	359.3	-11.5	31.4
Olive oil	300,5	357,2	331.9	18.9	-7.1

Table 4 Unemployment rates (%) for males and females as estimated in August of 2015. (ELSTAT 2015)

Gender	August					
	2010	2011	2012	2013	2014	2015
Male	10.3	15.9	22.6	24.5	23.5	21.5
Female	16.5	22.3	29.5	31.7	29.6	28.5
Total	12.9	18.6	25.6	27.7	26.2	24.6

Table 5 Unemployment rates according to the different age groups during the period 2010-2015. (ELSTAT, 2015)

	August					
Age Group	2010	2011	2012	2013	2014	2015
15-24 years old	32.2	45.5	56.6	57.6	49.8	47.9
25-34 " "	17.2	25.5	32.8	36.5	34.7	31.3
35-44 " "	10.8	15.4	21.9	24.1	22.8	22.2
45-54 " "	8.8	12.8	19.1	20.5	20.5	19.9
55-64 " "	5.8	8.4	14.2	15.9	16.4	16.2
65-74 " "	1.6	4.1	3.7	9.3	11.4	11.0
Total	12.9	18.6	25.6	27.7	26.2	24.6

Structure of farm labor force

Agriculture plays a vital role in the workforce of the country, since a large number of the active population is occupied in the sector (Table 6). Greek agriculture is traditionally dominated by small sized family farms which seldom utilize hired labor (Kaditi 2013). Due to this particular characteristic, in terms of employment there is a large number of farm owners who manage the farm by themselves and a large number of family members who work unpaid (Table 6). In more detail, about 98% of labor force consists of family holdings (Table 7), women are more frequently occupied in larger holding (42%) and the Annual Work Units (AWUs) are also increased in holdings over 2 hectares (Table 7). Consequently, the employment data in agriculture are not easily comparable with similar data of other sectors. According to Eurostat data (2015), 491.000 people (out of which 86.0% self-employment) were employed in the agricultural sector in 2011, which accounted for 11% of the total employment of the country. The number was reduced by 195.000 since 2000. Traditionally men are more frequently occupied in agriculture compared to women (Table 8) and the majority of people who work in this sector are aged between 40-64 years old (66.7%), followed by 15-39 years old (Table 8) (Eurostat, 2015). Moreover, it was estimated that 80.6% of the labor input in a total of about 396000 AWUs in 2012 was not paid (Eurostat 2015).

Table 6 Farm Labor Force in the Greece, in persons. Source Eurostat, FSS (online data codes:ef_lflegaa, ef_lflegecs, ef_kvage).

	Total	Sole holders	Family members	Non-Family members	By sex-men**	Average workers per holding	Working holdings with SO<4000 EUR	Working full time
	1000 person	% of total			% of total	Persons/ holding	% of total	% of total
Regular (in persons)	1212.7	59.6	38.3	2.2	60.4	1.7	47.3	8.6
NOTE: *Labor Force directly employed by the holding in persons only includes regular labor force (sole holders working on the farm + members of the sole holder's family + non-family regular workers								
	Total	Sole holders	Family members	Non-family regular workers	Non-family non regular workers	By sex-men	Average workers per holding	Working holdings with SO<4000 EU
	1000 person	% of total				% of total	AWU / holding	% of total
Regular and non-regular	429.5	54.1	28.4	4.3	13.2	59.9	0.6	21.2
NOTE: *Labor force directly employed by the holding in AWUs includes both regular (sole holders working on the farm + members of the sole holders' family + non-family regular workers) and non-regular (non-family non-regular workers) labor force ** Only regular labor force								

Table 7 Structure of Agricultural holdings in Greece. Source Eurostat, Farm Structure Survey and Agricultural Census. Updated: October 2013.

Holdings less than 2 hectares			
	Status	persons	AWUs
Family labor force	Holders	373090 (of which 36.2% women)	72810

	Other family members	201200 (of which 51.8%)	33730
	Total	574290 (of which 41.7% women)	106540
Non family labor force	Regular non family labor force	5610 (of which 12.5% women)	3870
	Non regular (seasonal) labor force		12140
	Total		16010
Holdings more than 2 hectares			
Family labor force	Holders	349310 (of which 29.4%)	159630
	Other family members	262910 (of which 51.4% women)	88250
	Total	612220 (of which 38.8% women)	247880
Non family labor force	Regular non family labor force	20610 (of which 11.7% women)	14450
	Non regular (seasonal) labor force		44630
	Total		16010

*AWUs=Annual work units. An AWU is equivalent to a worker employed on a full time basis for one year.

Table 8 Employment in Agriculture in Greece. Source Eurostat (2015), Labor Force Survey (LFS)

Employment in Agriculture	
1000 persons	471.6
% men	58.7
% of persons aged 15-39	28.3
% of persons aged 40-64	66.7
% of persons aged 65 and more	4.9

1.2 *Financial crisis and rural development*

Financial crisis and the impact on the agricultural income

The Greek recession started six years ago and is still in progress. Weak competitiveness, low productivity, rigid labor, product markets, large public deficit and debt levels are some of the most important causes which brought the Greek economy on the brink of default (European Commission, 2015). Uncertainty about the overall economic situation, tight financial conditions, difficulties and hesitations in prioritizing investments of many actors, cash flow deficiency, especially for small-sized enterprises and industries, high unemployment rates are only some of the obvious and most visible results observed due to the recession and the austerity measures which were applied to Greece (European Commission, 2015).

Despite the recession agriculture remains one of the most important and dynamic sectors for the recovery of the Greek economy, since the sector has enormous potential for improving the competitiveness of the country. However, the crisis has affected largely the primary sector and the effects can be viewed on supply and demand, as well as on consumer behavior since many consumers shifted to buying Greek products in order to support the Greek economy.

As indicated by the Economic Accounts for Agriculture with reference to the Income of the Agricultural Industry (growing crops, farming of animals) during the period 2009-2013 the total number of the agricultural units and the utilized land for agriculture declined (Table 9). The area cultivated perennial crops (e.g. vines and trees) was reduced, whereas the area of the annual crops was increased, as well as the irrigated areas (ELSTAT, 2015).

During the recession years, the cost of production in the agricultural sector was highly increased. The input costs in agricultural production were increased significantly during the period 2009-2013 as presented in Fig.2 (Tsiforos, 2015). Moreover, during the period 2009-2014 investments in Greek agriculture were reduced by 2% (from 27% in 2009 to 25% in 2014). The amount of taxes in agricultural production from 2009 to 2013 was increased by about 247% (Fig. 3). The agricultural income during the recession period was reduced considerably as presented in Fig. 3 (Tsiforos, 2015). The shortage of capitals and cash flow is major obstacles to financing agricultural industries; it should be mentioned that according to Tsiforos (2015) the average financing for Greek agricultural enterprises was 1.8% during

2009-2014 and was the lowest among other sectors such as shipping (12.2%), tourism (6.6%), trade (21.1%) etc.

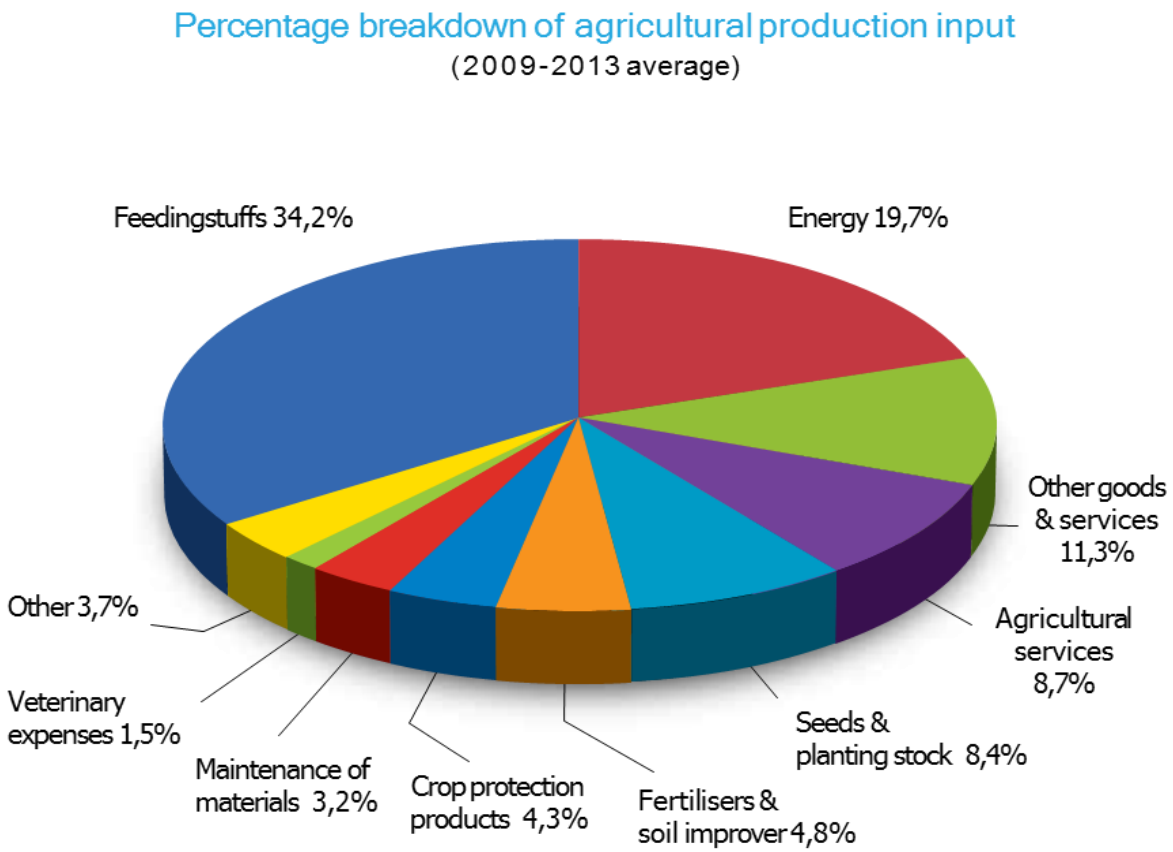


Figure 2 Input cost breakdown for the Greek agricultural sector during the period 2009- 2013. (Tsiforos, 2015)

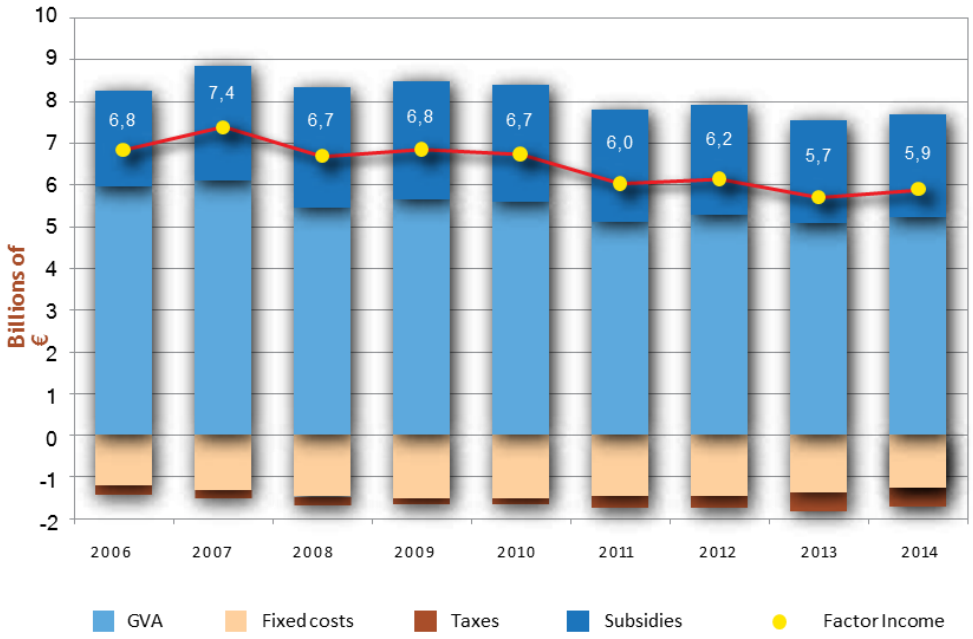


Figure 3 Evolution of agricultural income (values at current, basic prices). (Tsiforos 2015).

Rural development as an alternative for employment

The agricultural sector in Greece contributes substantially to the development of the country. It is extremely important to promote the integrated development of rural land based on local resources and reinforce the multifunctional character (Hellenic Ministry for the Environment, Physical Planning and Public Works, 2008). The rural development should be based on strategic plans in order to generate opportunities for employment. Agriculture is one of the important pillars for rural development and provided that important structural problems faced by the sector are solved, the sector has enormous potential to expand, modernize and increase employment, especially for young people.

Certain EU policies (e.g. new CAP) and investment funds, which are available to Greece for the period 2014-2020, should be used in order to reform the agricultural sector and prioritize certain actions which will promote the development of quantitative and qualitative Greek agricultural products.

The importance for rural areas in Greece was demonstrated in Table 2. The new EU policy framework (through the reform of CAP) allows the development of rural areas and points to the following targeted axes (European Commission, 2013):

- increase competitiveness of agriculture
- sustainable management of natural resources and environmentally friendly cultivation practices and natural ecosystem conservation
- Development of rural economies and communities in a balanced manner based on the use of local land and exploitation of local resources. The creation and maintenance of employment should be a key element in the strategic development of the rural areas.

For the implementation of the above development actions, a series of measures and reformations (some of which are already ongoing) should be applied. Such measures and reformations include (European Commission 2013): promote education and training of farmers, improve the social-cohesion and social services of rural areas in order to make living in those areas more attractive (especially for young people), adapt the use of land according the farmer needs and take measures in order to avoid land multi-fragmentation, enhance the research for promoting sustainable agriculture and implementation of modern technological advancements in agriculture, make advisory services and guidance from specialists easily accessible to the farmers, help farmers in marketing their products and establishing cooperative bodies for promoting rural products, improve quality and certification of agricultural products, simplification of the bureaucracy involved in certification, packaging, transporting etc., especially for the organic products.

Trend to move from big town to rural areas, farming as new occupation

Until recently, young Greeks were unwilling to work in agriculture, primarily due to the quality of life in rural areas (especially in the mountainous and remote areas), which relates to the lack of adequate infrastructure for product and human transportation, education, e-commerce, social services (Katidi, 2013). However, there is growing evidence that migration to rural areas and adaptation of agricultural livelihood is a good option and an opportunity to survive the economic crisis (Daudon and Vergos, 2015). Growing evidence is showing that more people and especially youth find appealing the idea of getting involved in agriculture (Daudon and Vergos, 2015). Certainly there is a lot of room in agriculture to occupy people and according to ELSTAT (2013) the percentage of employment in the agricultural sector was raised (from 11.4% to 13.8%) during 2008-2013, while the total number of people employed in the sector has fallen during the same period (from 516,900 to 493,900) (ELSTAT 2009, 2014). In addition, from 2008-2013 net job creation for agriculture there was

an increase of 9,600 for non-youth, while for youth there was a loss of 16,800 jobs. So it appears that the decline was primarily from job losses of the youth (ELSTAT 2015).

According to European Commission (2015) more than 149000 (>50%) Greeks below the age of 25 were unemployed at the begging of 2015. This in relation to the EU resources which are available for the support of young farmers who aim to set up small businesses (European Commission, 2015) provides an incentive for young people who are thinking to migrate in rural areas, especially if family land is available for use and exploitation. According to Daudon and Vergos (2015) a "back-to-the-land" or "farmitization" movement is generated in Greece, a trend which is also supported by the media that promote educated young adults who left urban areas and moved to rural areas and set up successful agricultural business (Daudon and Vergos, 2015). It has to be mentioned that from 2007-2013, the amount of 3,906,228,424 EUR was given by the EU for the support of rural development in Greece (European Commission, 2013).

Although agriculture has the potential to offer a viable livelihood for many young people who are willing to return to rural areas and take over the family land or move to rural areas and start from scratch an agricultural business, there are some serious challenges and obstacles which should not be ignored when it comes to take that decision. Such challenges involve the shift to a different lifestyle, family land is often too small to set up a viable business and they need to have a clear business plan and some available capital before initiating their business in order to avoid financial struggles latter on, lack of training and experience in farming knowledge and agricultural methods and techniques.

Growing evidence demonstrates that young people are willing to take advantage of revitalizing agriculture in Greece (Daudon and Vergos, 2015). However, as indicated by the recent Daudon and Vergos (2015) study, it is highly important to provide individuals with the necessary tools and support (financial and technical) in order to help them overcome the serious economic, education and governmental barriers.

1.3 *Viticulture, table and wine grape varieties*

Grape cultivation and wine making have a distinguished place in the history of Western civilization. The ancient Greeks attributed the gift of wine to Dionysus and loved to organize intellectual gatherings called "symposia". In the Iliad, Homer says that the inhabitants of

Thrace supplied the Greeks with wine during the Trojan War (1300 BC). In Christianity the need for sacramental wine led to an association between grape growing and the Church which has flourished for many centuries. By AD 600 the consumption of wine had been prohibited under Islamic law and this promoted the cultivation of table grapes in the Middle East and North Africa. The growing of table grapes was also introduced into the Balkans during the Ottoman occupation, 15th -19th centuries (Winkler et all, 1974).

The main cultivated table varieties are: Cardinal , Perlette, Superios seedless, Crimson Seedless, Italia, Victoria, Muscat de Hamburg, Razaki, Fraoula, Sideritis Opsimos Edessis, Ithaki, Opsimos Soufliou, Alphonse Lavalee (Ribier), Attica Seedless. Main cultivated Seedless: Corinth or Corinthiaki , Sultana or Sultanina or Thomson Seedless. Main cultivated wine grapes: Kotsifali, Liatiko. Vilana, Mandilaria, Athiri, Muscat of Samos, Aidani, Savatiano, Assyrtiko, Roditis, Agiorgitiko, Moschofilero, Mavrodaphne, Verjami, Robola, Limnio, Muscat of Alexandria or Muscat White,Negoska, Mesenikola Black, Krassato, Starvroto,Malagouzia, Monemvasia, Sefka, Sideritis, Zoumiatiko, Debina, Xinomavro, Muscat de Hamburg, Carignan, Cinsault, Syrah, Gewurztraminer, Cabernet Sauvignon, Merlot, Grenach, Sauvignon Black, Chardonnay. The commonly used rootsocks are: 110 Richter, 1103 Paulsen, 140 Ruggeri, 99 Richter, SO4, 420A Millardet et de Greaset, 30 Richter.

All farmers interviewed in the major grape producing regions in Greece, indicated the sector is very attractive for new growers and has a high economic potential. That's because the climate and soil conditions favors vine cultivation and we have a long tradition and experience on vine cultivation in Greece. Table and wine grapes have many applications and uses. They can be consumed as fresh, dried, wines, distillate and juices. Also regarding currants (black Corinth), they have proven their many health benefits.

2. Methodology

The main objective of the primary research was to elaborate at least 10 case studies of successful and unsuccessful attempts on cultivation of Viticulture, Table and Wine Grapes. Sub-objectives included determination of critical success factors, identification of good practices applied by growers, exploration of major topics where the growers need support and training, identification of main problems faced by growers and elaboration of a business plan. Exploratory research in the form of in depth interviews was used to gain insight and understanding of the sector. Interviews were chosen over focus group, as some of the information is sensitive and to promote spontaneous responses. Interviews were conducted in two phases of stakeholder interviews. The first phase involved farm visits for in-depth interviews of existing farmers, using a structured questionnaire consisting of a series of open- ended questions, related to qualitative characteristics, to probe and encourage extensive and meaningful responses. Based on these farm visits and interviews, 23 case studies were developed. The second stage involved on-site interviews of farmers and processors using a structured questionnaire to collect economic and technical data for the elaboration of a business plan. A total of 30 on-site interviews were performed for the economic analysis of the sector.

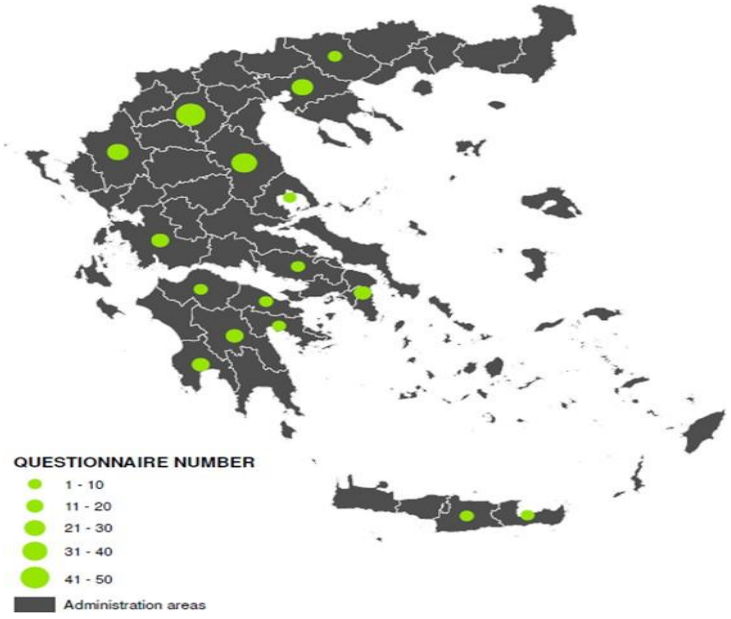


Figure 4 Questionnaire mapping in Greece

Secondary research (literature review) examined the history, development, size of the sector, statistical information related to market size, imports and exports. Extensive literature review was made through internet research, books and articles, to collect historical data, botanic characteristic, soil-climate requirements and uses for each crop. Statistical information and data were retrieved from Greek Authorities such as Hellenic Statistical Authority (ELSTAT), Greek Payment Authority of Common Agricultural Policy (OPEKEPE), Greek Central Cooperative Union for Wine Products, Ministry of Rural Development and Food and European and International authorities, Central Fruit and Vegetable Market of Thessaloniki (CMT) and organizations such as Eurostat, FAOSTAT, USDA, International Organization of Vine and Wine (OIVStat.) and International Trade Centre (ITC).

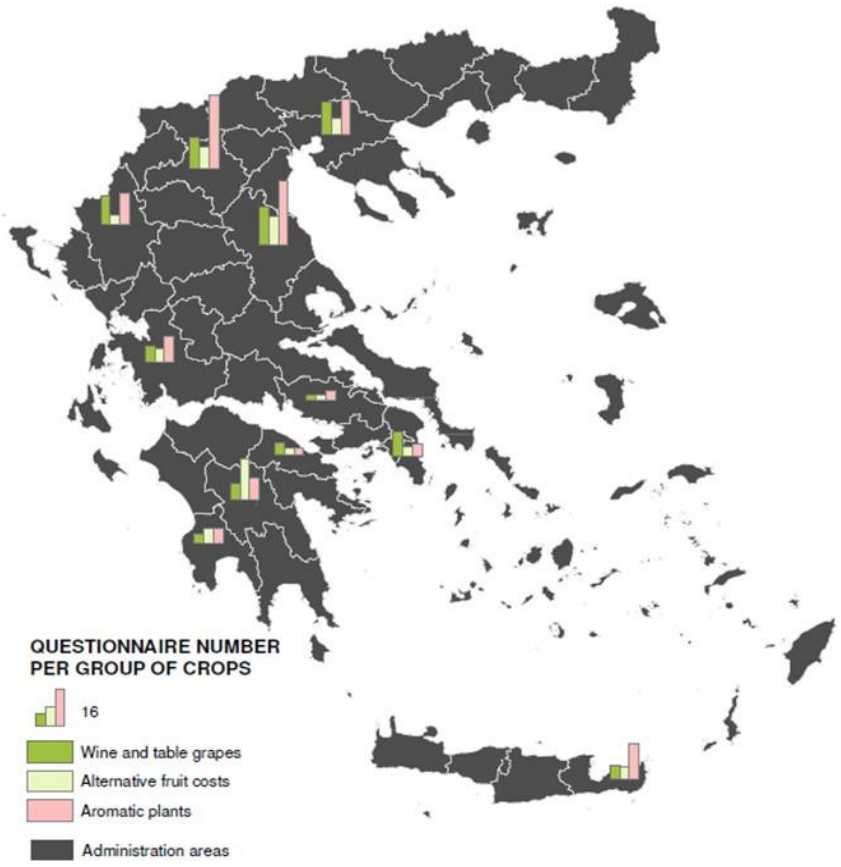


Figure 5 Questionnaire mapping per group of crops

3. Literature Review / Desk Research

3.1 Viticulture, table and wine grape varieties

3.1.1. Historic review of their use worldwide

The productions of grapes and winemaking have a distinguished place in world history. It is believed that the cultivation of grapevines originated in Transcaucasia between the Black Sea and the Caspian Sea in what is now Georgia and Armenia about one million years ago. Of all species of grapes the most suitable for making wine is *Vitis vinifera*. By 4000 BC, viticulture extended from Transcaucasia to Asia Minor through the fertile Crescent and into the Nile Delta. By 1700 BC, King Hammurabi of Babylon established laws on wine trade and wine consumption.

The Grapevine in Europe

In Europe, the expansion of viticulture started from the Hitties in Anatolia and was introduced into Crete, Peloponnesus and Bosporus. Through Phoenicians and Greeks, viticulture was introduced into North Africa (Carthage), Sicily, Southern Italy, Spain and France. Roman culture helped spreading of viticulture throughout the valley of the Rhine and into Germany. In Europe, viticulture grew steadily from the 16th to the 19th century despite a series of disasters.

The Grapevine under Islam

By 600AD, Islamic law forbade the consumption of wine so this prohibition encouraged the cultivation of table grapes in the Middle East and North Africa.

Viticulture in the New World

The earliest records of viticulture in the Americas date back to 1521 when Cortez ordered the planting of grapevines in Mexico, one year after its invasion. By the end of the century, Mexico was self sufficient in wine production. In the 1530s viticulture was introduced to Peru and within 20 years spread to Chile and Argentina.
The first recorded grape crushing in the United States occurred in Jamestown, Virginia in 1609 (Lee, 1987). On the West Coast, Father Juan Ugarte was the first who planted grapevines. Around 1770, the first vinifera were planted near Los Angeles.

Viticulture in Africa and Australia

In South Africa, the first grapevines were planted by Dutch settlers in the Cape of Good Hope in 1616. In Australia viticulture began in 1788 but due to the humid climate all the attempts to grow grapes were unsuccessful. In the 1850s German Lutherans founded the now important wine industry of the Barossa Valley in South Australia.

World grape and wine industries

Some of the uses of grapes are: fresh fruit, dried fruit, fresh grape juice, concentrated grape juice, wine.

In 1988, world grape production covered 9 million hectares. Europe is the world leading producer of grape and wine. It accounts for 70% of world viticulture, 80% of world wine production , 55% of table grapes and 30% of raisin production. Italy, Spain, and France, each have more than one million hectares of grapevines.

Between 2009 and 2014, the average annual production was 167 million hectolitres. It accounts for 45% of world wine-growing areas, 65% of production, 57% of global consumption and 70% of exports in global terms (European Commission, 2015)

In 1988, Italy, France and Spain produce more than 50% of the world's wine. In the period 1976-1988, the percentage of table grapes worldwide is less than 12% of the total production of grapes. The ten largest producing countries are Italy, USSR, Turkey, Spain, USA, Bulgaria, Japan, Greece, Brazil and France. In 1987, the production of raisins was 646700 tones worldwide. Raisin production is not as well known as wine and table grapes. The only major producer is Asia.

3.1.2. Main cultivars of grape varieties

a) Table grape varieties

The main producers of fresh table grapes are China, Iran and from EU the leading producers are Italy, Spain and Greece, which grow 93% of the EU-28 table grapes. Italy ranks sixth in world table grape production and third among table grape exporters, behind Chile and the United States. Italy is the sixth table grape producer worldwide and the third exporter behind Chile and the USA. Italia, Victoria, and Red Globe are the main varieties in Italy, covering approximately 66 percent of the table grape area. Production is shifting towards the seedless varieties Sugraone and Crimson, which the most popular seedless varieties followed by Thompson Seedless, Centennial, and Sublime. In Spain there are more than 50 varieties of table grapes, but the main ones are Aledo, Ideal, Muscatel, Dominga and Napoleon. Seedless grapes represent 30% of the total production. (USDA, 2014)

Greece is the third main table grape producer in the EU. The main producing areas are Corinth (in Peloponnese), Kavala (in Macedonia) and Heraklion in the (Crete) and the most popular varieties are Sultanina (Thompson seedless) and Victoria. (USDA, 2014)
Major table grape cultivars include 'Sultana' (also known as 'Sultanina','Thompson Seedless', 'Oval Kishmish' (Winkler et al., 1974; Plate 3), 'Almeria',('Ohanez'), 'Cardinal', 'Dattier' ('Waltham Cross'), 'Emperor', 'Malaga', 'Perlette', 'Ribier' ('Alphonse Lavallée'), 'Rish Baba', 'Tokay' and 'Ruby Seedless'. New cultivars are always under development. Seedless French hybrid cultivars developed in New York. (Debbie Rees at all, 2012)
Concerning Africa, more than 80% of table grape production is in South Africa. Popular cultivars are Barlinka, Bonheur, Dauphine, Waltham Cross, Alphonse Lavallée, Red Globe, La Rochelle, Sunred Seedless, Thompson Seedless and Sultanas. (FAO,
The most important table grape varieties grown in China, are : Niunai (Cow's Nipples), Kyoho, Muscat Hamburg, Thompson Seedless, Longyan (Dragon Eyes) Jingxiu, Zana, Rizamat, Fenghuang No 51, Red globe, Jingzhaojing, Jingyu, Italia and Fujiminori. (http://www.fao.org/docrep/003/x6897e/x6897e05.htm)
A large number of varieties are grown in Australia. The major table grape varieties are Thompson Seedless, Red Globe, Flame Seedless and Menindee Seedless. Menindee Seedless is the predominant variety of plantings in northern Australia. Other table grape varieties grown include Cardinal, Emperor, Ribier (Alphonse Lavelle), Marroo Seedless, Calmeria, Ohanez, Purple Cornichon and Waltham Cross.
(http://www.fao.org/docrep/003/x6897e/x6897e04.htm).

b) Wine grape varieties

In table 9, we observe the most important varieties of *Vitis vinifera* for wine making. Each variety has a number of different clones with different degrees of such characteristics as resistance to disease, soil and climate conditions and yield.

Table 9 Main vine varieties used for wine production, classified by species. Source: P. Unwin (1996).

SPECIES	VARIETY/CULTIVAR	
	Red	White
Vitis vinifera	Cabernet Sauvignon	Chardonnay
	Merlot	Chenin Blanc
	Pinot Noir	Riesling
	Syrah/Shiraz	Sémillon
	Barbera	Sauvignon Blanc
	Cabernet Franc	Aligoté
	Carignan	Gewürztraminer
	Cinsaut	Pinot Blanc
	Camay	Malvasia
	Grenache	Müller-Thurgau
	Nebbiolo	Muscadet
	Pinot Gris	Muscat
	Sangiovese	Palomino
	Tempranillo	Silvaner
	Zinfandel	Trebbiano
		Viognier
		Welschriesling
Vitis labrusca	Concord	
	Catawba	
Vitis rotundifolia		Scuppernong
Source: P. Unwin (1996)		

Additionally, the world top 10 wine grape varieties based on % are:

Top Wine Grape Varietals Worldwide (Including Origin and Market Share):

1) Cabernet Sauvignon (France; 6.3 %)
2) Merlot (France; 5.81 %)
3) Airen (Spain; 5.48 %)
4) Tempranillo (Spain; 5.05 %)
5) Chardonnay (France; 4.32 %)
6) Syrah (France; 4.03 %)
7) Garnacha Tinta (Spain; 4.01 %)
8) Sauvignon Blanc (France; 2.39 %)
9) Trebbiano Toscano (Italy; 2.39 %)
10) Pinot Noir (France; 1.88 %)

(Source:http://www.ibtimes.com/what-are-most-popular-wine-grapes-world-1540272)

3.2 Requirements for establishment

3.2.1. Legislative framework of establishment vineyard

a) A system of appellations was implemented to assure consumers the origins of their wine purchases

EU WINE/VINE REGISTRATION

The Greek law regarding the vineyard establishment and wine production is mainly based on the legal provision of the European Union. The latest EU reform was included in the EU Regulation No 1308/2013 of the European Parliament and of the Council (applied from 01/01/2014), intended to simplify and streamline the provisions of the latest (2013) Common Agricultural Policy (CAP) (European Commission, 2015). The reform mainly renews the measures and approaches of the 2008 reform which aimed to (i) make the EU wine producers even more competitive, (ii) simplify market-management rules and make them simpler, clearer and more effective, (iii) preserve the European wine growing traditions and promote its social impact and environmental role in rural areas (European Commission, 2015). Through the latest regulation of 2013, a common organization of the markets in agricultural products was established and certain provisions related to wine production and wine market were regulated in a consistent manner for the EU members. Certain implementation rules

were expressed in more detail through the Regulations or Delegated Regulations of the European Union:

- Commission Delegated Regulation No 612/214: derived from Commission Regulation No 555/2008, deals with National Support Programs and regulates rules which relate to promotion of wines in third countries, restructure and conversion of vineyards, green harvesting, mutual funds, harvest insurance, investments, by product-distillation.
- Commission Delegated Regulation 2015/1576: amending the Commission Regulation Commission Regulation (EC) No 606/2009 which deals with the categories of grapevine products, oenological practices and applicable restrictions
- Commission Delegated Regulation 2015/1576: amending the Commission Regulation No 436/2009 which deals with vineyard register, compulsory declarations, accompanying documents and registration
- Commission Regulation (EC) No 607/2009: dealing with certain detailed rules for the implementation of Council Regulation (EC) No 479/2008 in regard to protected designation of origin and geographical indications (PDO/PGI), traditional terms, labeling and presentation of certain wine sector products.

Planting rights in the European Union are restricted and have been regulated for several decades (since the 1970s) as part of the CAP. After several consultations, the Commission decided to end the regime of planting rights by the end of December 2015. However, during the period 2016-2030 a new system for the management of vine plantings will be implemented in order to ensure an orderly growth and expansion of vineyards in European Union (European Commission, 2015). The new scheme will apply from 1 January 2016, replacing the transitional planting rights regime. The new scheme of Authorisations for vine plantings was planned by the High Level Group (HLG); the HLG deals with the following issues: (a) the current status of the regime of planting rights at the EU and Member State levels, (b) the possible effects of the termination of the regime of the planting rights on the wine market, (c) the outline and a suggested regulatory framework for vine plantings (European Commissions, 2015).

b) Implementation of quality systems in agricultural production

Today, there are numerous standards and protocols that lead to certificates. A certificate could be issued for a company proving that it applies such operational procedures to assure

constant Quality (ISO 9001), or Food Health and Safety (ISO 22000, FSSC22000, SQF), or Environmental performance (ISO 14001), Social accountability (SA 8000, ISO 26000) etc. Also there are product certificates issued to declare special production methods and special features of final product such as private protocols IFS and BRC that were issued from German-French and British retailers respectively and certify increased level of food safety.

Integrated Crop Production (GLOBAL.G.A.P. or Greek National Standards AGRO 2.1 and AGRO 2.2) certify that a product has been produced applying Good Agricultural Practice in combination with a robust internal quality control operation system. Organic Product (Reg (EC) 834/2007 and Reg (EC) 889/2008 for European Union, USDA-NOP for United States, JAS organic for Japan etc.) certify the respect to environment, biodiversity and non-use of GMOs and synthetic pesticides and fertilizers.

The choice of a company to acquire one or more of these certificates is voluntary but usually they are prerequisites from buyers especially when they are big retailers. Each of the above mentioned certificates can be obtained alone or a company may choose to acquire more than one. For example organic farming certification can help a product get a place on the shelve and in parallel can help it differentiate and access more markets such as artisanal markets. It is of priority for any company that wants to enter a new market what are the necessary certificates that will be used by the buyers for its evaluation as potential supplier.

c) Registration on wine system of planting rights

Planting rights

According to the Greek law, which relates to the execution and supplementation of the European regulations, there is a ban on planting new vineyards. The terms and the rules for granting planting rights in Greece for 2015 are published in the Official Government Gazette (ΦΕΚ Β΄/432/24.03.2015) in accordance with the decisions 1123/26427 of the Ministry of Development and Food. According to this decision, planting rights for wine grapes can be granted free of charge as follows (Table 10):

Table 10 Available planting rights for wine grapes (hectares) for each Regional Units

A/A	Regional Units	Available Area hectares)
1	EVROS	6.15
2	RODOPI	2.5
3	KAVALA	3.5
4	DRAMA	4
5	SERRON	2.5
6	THESSALONIKIS	6
7	HALKIDIKIS	6.4
8	KILKIS	0.77
9	PELLAS	2.67
10	PIERIAS	1
11	HMATHIAS	0.3
12	KASTORIAS	0.775
13	FLORINAS	4.22
14	KOZANIS	0.5
15	GREVENA	1
16	THESPROTIA	2
17	IOANNINON	0.5
18	PREVEZA	1.8
19	LARISA	4.95
20	MAGNISIA	4.7
21	KEFALONIA	3.19
22	LEFKADA	1
23	AHAIA	8.95
24	ILIA	1.5
25	AITOLOAKARNANIA	0.5
26	VIOTIA	3
27	EVIA	4.22
28	FHTIOTIDA	2
29	ARGOLIDA	2.06
30	KORINTHIA	3.34
31	LAKONIA	0.2
32	MESINIA	4.48
33	EAST ATTIKI	1.58
34	WEST ATTIKI	3
35	LESVOS	8.48
36	HIOS	1.5
37	SAMOS	0.4
38	NORTH AIGAIOU	10.38
39	SYROY	5.3
40	RODOU	2.35
41	SOUTH AIGAIOU	7.65
42	IRAKLIO	5.74
43	HANIA	1.7
TOTAL	121.285	

According to the Greek legislation (decision article 13 of ministerial decree 3323/99634/01–08–2014) and the number of available planting rights at the national reserve the allocation for 2015 is made as follows:

(a) All the applications of young people (bellow 40 years old) will be satisfied up to the limit of 0.5 hectares, provided that the applicant is designated for the first time as the leader of the farm, has the required knowledge, skills and professionalism for the production of Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) wines.

(b) All the applications of young farmers will be satisfied up to the limit of 0.5 hectares for the production of wines (except for PDO and PGI wines), at the Regional Units of Thesprotia, Preveza and Aitoloakarnania.

(c) Because of the high demand of planting rights at the regions of Hraklion, Halkidikis, Larisas, Achaias and the small number of planting rights at national reserve, in those regions they are distributed up to the 0.4 hectares to new farmers.

(d) In the small islands (below 3.000 habitants) of Ionian and Aegean all the applications for planting rights are satisfied and there is no limit on the requested area. For the rest of the islands planting rights are satisfied up to the limit of 3 hectares per applicant.

(e) At the mountainous areas of the Regional Units of Evia, Trifilia, East Attica and Magnisia, planting rights are distributed for up to 0.5 hectares to farmers who already own 3 hectares. At the lowland of the same Regional Units planting rights are distributed for up to 0.5 hectares to farmers who already own 5 hectares.

A significant portion of legislative measures, laws, controls, etc. determine the approval of the distribution of planting rights. Moreover, several preconditions are involved for using the indications of regional wines (PGI) and recognized designations of origin (PDO wines).

Greece is placed in the 17th position among the biggest wine-producing countries, with annual wine production estimated at 2.9 million hl and 180.000 wine-grape producers. The vineyards are distributed throughout the country. Out of the of the total established vineyards, 14.4% is located in Northern Greece (Thrace, Macedonia,

Epirus, Thessaly), 17.7% in Central Greece and Attica, 45.1% in Peloponese, Western Greece and Ionian islands and 17.7% in Crete.

From January 1, 2016 Greece will follow theNew Scheme of Authorisations for vine plantings which will be applied at Union level, according to the EU regulations (as mentioned in the section above). According to the latest Regulation (EU) No 1308/2013 of the European Parliament and of the Council of 17 December 2013, the new system for authorisations for vine plantings will be applied under the following rules:

"*Authorisations for vine plantings may be granted without a cost being charged to producers, and should expire after three years if they are not used. This would contribute to the swift and direct use of the authorisations by the wine producers to whom they are granted, thereby avoiding speculation. The growth of new vine plantings should be framed by a safeguard mechanism at Union level based on the obligation for Member States, on an annual basis, to make available authorisations for new plantings representing 1 % of the planted vine areas, while allowing for certain flexibility in order to respond to the specific circumstances of each Member State. Member States should be able to decide whether to make available smaller areas at national or regional levels, including at the level of areas eligible for specific protected designations of origin and protected geographical indications, on the basis of objective and non-discriminatory reasons, while ensuring the limitations imposed are above 0 % and are not overrestrictive in relation to the objectives pursued.*"

"*In order to guarantee that authorisations are granted in a non-discriminatory manner, certain criteria should be laid down, and in particular where the total number of hectares made available by the authorisations offered by Member States is exceeded by the total number of hectares requested in the applications submitted by producers.*"

"The granting of authorisations to producers grubbing up an existing vine area should be automatic upon submission of an application and independently of the safeguard mechanism for new plantings, since it does not contribute to the overall increase of vine areas. In specific areas eligible for the production of wines with a protected designation of origin or a protected geographical indication, Member States should have the possibility of restricting the granting of such authorisations for replantings on the basis of recommendations of recognised and representative professional organisations."

"This new scheme of authorisations for vine plantings should not apply to Member States not applying the Union transitional planting rights regime and should be optional for those Member States where, although the planting rights apply, the vine planting area is below a certain threshold."

"Transitional provisions should be laid down in order to ensure a smooth transition from the former planting rights regime to the new scheme, in particular in order to

avoid excessive plantings before the start of the new scheme. Member States should have a certain flexibility to decide on the deadline for the submission of requests for conversion of planting rights into authorisations from 31 December 2015 to 31 December 2020."

"The control of non-authorised plantings should be carried out effectively in order to ensure the

d) Application for registration in the nationally vineyard registry

Legislative framework for vineyard

Establishment Wine grape varieties

1.1 Legal planting (only for wine varieties)

To install a vineyard planting rights are required under the laws of the European Union.

1.2 The rights may be acquired a producer in three ways:

a) a request to the competent Directorate of Agricultural Economy and Veterinary Medicine.

b) Maintaining old planting rights from a vineyard which was eradicated

c) Transfering of rights from another farmer who uprooted his vineyards

2. Code of vineyard parcel

i) After receiving planting rights for a certain parcel, the grower should conduct field sampling and send samples for soil analysis before planting, In the case of replanting a vineyard, testing for nematodes is recommended.

ii) The grower submits the soil analyses to the competent Directorate of Agricultural Economy and Veterinary Medicine, which than provides a License for Purchasing Propagating Material for planting vineyards

iii) The grower after purchasing the plants from an approved nursery and planting, at the request of the Directorate of Agricultural Economy and Veterinary Medicine, should include the vine in the vineyard register, and become registered in the Greek Payment Authority of Common Agricultural Policy (OPEKEPE),

3. Allowed varieties

i) The choice of the variety should be in accordance with the Ministerial Decision 886/15441 / 02.06.2013 "Recommended or authorized varieties by region»

ii) For zones of Protected Designation of Origin (PDO) and Protected Geographical Indication (PGI) the varieties should be in accordance with the relevant legislation of the zone.

Table grape varieties

To establish a vineyard for table grapes, the situation is much simpler than for wine grapes. First of all, the new grower has to take a soil sample from the field for a soil analysis and testing for nematodes if replanting vineyards. Based on the soil analysis he can decide on the rootstock he can choose.

The grower after planting, should go to the Directorate of Agricultural Economy and Veterinary Medicine, to include his vine in the vineyard register, and become registered in the Greek Payment Authority of Common Agricultural Policy (OPEKEPE).

3.3 *Viticulture, table and wine grape varieties in Greece*

3.3.1 Historic review of their use in Greece

Wine has been an important part of Greek culture for over 4000 years. The cultivation of the vine is not known from where they began. Some said they came from Crete, from which it spread to Naxos, Chios and then across the country. Others give priority to Etolia and others in Thrace, from where the Greeks supplied wine during the siege of Troy. In Thrace also manufactured the famous wine Ismaros, with which Odysseus drunk Polyphemus and Vyvlinos for which Hesiod speaks.

The ancient Greeks knew well the nutritional value of wine as it became an inseparable part of their daily regime. They loved to organize intellectual gatherings called "symposia" where they would eat and talk about philosophical subjects while drinking wine. Our ancestors also realized the important influence of the local ecosystem on the characteristics of wine. They traded their wines throughout the ancient world inside sealed amphorae and even created their own Appellations of Origin.

What is unique in Greece is that there are more than 400 Greek grape varieties, some of which are well known worldwide and have received best reviews from wine critics. These extensive varieties of grapes together with the ideal Greek climate combine to provide an excellent environment for the production of high quality wines.

3.3.2 Viticulture description

In the wild, *Vitis vinijera* L. is a vigorous climbing plant of deciduous forests. Its trunk and branches are flexible, and the plant is supported by the trees on which it grows. The climbing habit of the grapevine is reflected in the occurrence of pressure-sensitive tendrils; wild vines into the forest canopy to a height of 20-30 m.

In mechanized viticulture, grapevines are usually trained onto post-and-wire trellises of many different designs. In its wild state the grapevine produces large numbers of small bunches of fruit. As a crop plant the grapevine is severely pruned so as to reduce bunch number and to increase fruit size and fruit quality. The grapevine has a remarkable ability to regrow after pruning and to produce new crop from extension shoots, and this enables the annual renewal of the fruiting wood. Carefully tended grapevines can remain productive for a very long time.

The vine is a complex plant and its peculiarities have been the subject of scholarly work for more than a century.

The shoot system

Juvenile and adult morphology

The juvenile phase is short-lived and there is an abrupt change to the adult morphology after the production of six to ten leaves by the apical meristem. At the transition the phyllotaxy becomes distichous (two ranked) rather than spiral. In other words, leaves are produced on two opposite sides of the stem so that the shoot is bilaterally symmetrical with respect to leaf production rather than radially symmetrical as in the juvenile. There is also a change in the structure of axillary buds in that there is generally only one prophyll proximal to the first foliage leaf.

Of greatest significance is the appearance of tendrils at positions on the stem opposite to leaves. The production of tendrils denotes the acquisition of the climbing habit by the grapevine, although not necessarily the acquisition of sexual maturity. There is a repeating pattern of tendril production in which every thin node lacks a tendril. Starting at the first tendril-bearing node, the pattern is thus 'tendril, tendril, no-tendril, tendril, tendril, no-tendril' and so forth. Other rhythmic or cyclical phenomena within extension shoots of the current season include variations in internode length, diaphragm thickness and lengths of summer lateral shoots. The adult morphology is normally persistent under vegetative propagation but the juvenile morphology may recur when grapevines are grown in vitro.

The shoot of the current season

The apical meristem of the grapevine comprises an outer tunica of two layers of cells, which cover a less well defined corpus. The plane of cell division in the tunica is generally anticlinal (perpendicular to the surface) whereas division in the corpus is both periclinal (parallel to the surface) and anticlinal. The first leaf primordium arises from initials in the second layer of the tunica.

The tip of the elongating shoot is usually triangular in outline and is composed of the apical meristem, leaf and tendril primordia and young unexpanded leaves and tendrils.

The shoot of the current season is formed by a combination of fixed growth and free growth. Fixed growth refers to the elongation of internodes and the expansion of leaves which were pre-formed in the dormant bud. Free growth refers to the elongation of a shoot by continuous production of new leaf primordia by the apical meristem. Fixed grow accounts for up to 12 of the first-produced nodes of the cane.

The fully elongated internode is elliptical in cross section. The epidermis bears stomata and epicuticular wax, and it is photosynthetic. Under conditions of high temperature and humidity, small globular excrescences known as 'sap balls' or 'pearls' appear on the stem and also the petioles, leaves and tendrils. The structure and function of the pearls is not understood but they should not be confused with insect eggs.

Prompt bud, latent bud and summer lateral

The first-formed bud that arises in each leaf axil is the prompt bud (prompt bourgeon). This bud grows out in the season of its formation to produce a short lateral shoot known as the summer lateral. The summer lateral is seldom fertile, it usually fails to lignify and it abscises during autumn or winter to leave a prominent scar. The first leaf of the summer lateral is reduced to a prophyll. The bud formed in the axil of this prophyll is the latent bud (bourgeon latent).

The primary, secondary and tertiary latent buds are enclosed by the basal bract or prophyll of the summer lateral and by the two basal bracts of the primary latent bud. Together, these structures constitute the prominent latent bud or eye on a mature vine cane. This bud is referred to in the singular as ‘the latent bud’ but it is a compound bud composed of several buds, each located in the axil of the other. At first sight, the latent bud appears to be axillary to the cane or primary shoot, but it is a basal appendage of the summer lateral and it comprises axillary buds of the second and third orders with reference to the primary shoot. The association between the latent bud and summer lateral is very close; xylem vessels from young latent buds lead directly to the summer lateral.

Vascular anatomy of the stem

The tendrils of grapevines correspond determinate leaf-bearing shoots. The shoot axis is the hypoclade which bears two branches, the so-called inner and outer arms, and leaves are represented by a bract.

Details studies of relationships between the vasculature of the leaf and stem of the eight youngest nodes of the elongating vine shoot have been made by Fournioux and Bessis using sections and cleared specimens.

Procambial cells are initiated at the base of the leaf initials, the cells that give rise to the leaf primordia, and differentiation of procambium proceeds in the acropetal direction from the sub-apical zone into the leaves, where it gives rise to the petiolar vascular bundles. In the grapevine there are five traces per leaf, a large median trace and two pairs of lateral trace. The connection of these traces to vascular cylinder follows the distichous phyllotaxy of the primary shoot.

The shoot apical meristem has two functions: the production of new organs and the production of new tissues. A rapidly growing shoot of the grapevine increases in length by three to four centimeters per day and produces a new leaf (or tendril) primordium every two to three days.

After differentiation of the primary vascular tissues, the cells towards the center of each vascular bundle enter into division to produce a cambial layer known as intrafascicular cambium. Secondary phloem is then produced by this cambium in the direction of the epidermis, and secondary xylem is produced in the direction of the pith. Later, an interfascicular cambium is formed between the vascular bundles, and this too produce phloem to the outside and xylem to the inside. Together, the intrafascicular cambium and the interfascicular cambium comprise the vascular cambium. The secondary phloem consists of two tissues: (i) soft phloem composed of sieve tubes, companion cells, parenchyma cells and m fibers; and (ii) hard phloem composed of thick-walled fibers. Hard phloem and soft phloem are formed in alternating bands, and this gives the bark a ringed appearance when viewed in transverse section.

The ripening of the cane

The ripening of the cane refers to its change in color from green to yellow and thence to brown. This color change occurs progressively along the cane during the growing season, commencing at the base. The anatomical changes associates with the ripening of canes are as follows. A cork cambium or phellogen is produced at the shoot base, 20 or more internodes basal to the internode containing the current transition to vascular cambium and secondary vascular tissue differentiation. Cork or phellem is produced towards the outside, and a phelloderm or 'cork-skin' is formed towards the inside. Together, phellogen, phellem and phelloderm are known as periderm. The formation of periderm results in the separation of the epidermic cortex and primary phloem from the secondary phloem and other vascular elements of the main axis; these separated tissues soon turn brown and die. The process of wood-ripening is also associated with thickening of cell walls in the ray tissues and with the accumulation of starch grains, the principal carbohydrate reserve of the grapevine, by all living cells of the wood and bark.

Radial growth of the trunk and arms

In cultivated grapes the trunk is trained to bear two or more main branches known as arms, which bear the fruiting canes. In practice the grapevine is pruned annually and the dormant one-year-old canes are cut back either to 'spurs' bearing two or three buds or to canes bearing a dozen or more buds. Dormant canes are seldom left intact. Depending on the circumstances the arms are pruned to a given number of spurs or rods and provision is made for periodic replacement or renewal of arms. In each growing season there is thickening of the trunk and the arms and of the spurs or rods. This involves renewed activity of phloem, cambium and phellogen.

The root system

The root system of the grapevine must cope with water stress, waterlogging, ionic imbalance and toxic ions. It is probable that the hardiness of grapevines resides to a large extent in characteristics of the root system such as tolerance to anoxia, capacity to penetrate the profile to a depth of three meters or more, ability to regenerate new roots and to store organic nutrients including amino acids and presence of mycorrhizal associations. The form of the root system is affected by the mode of propagation.

The main framework roots are usually found at a depth of 30-35 cm from the soil surface and their number is said to remain constant after the third year from planting. Smaller, permanent roots arise from this framework; they either grow horizontally, in which case they are known as ‘spreaders’, or they may be ‘sinkers’ and grow downwards. These roots undergo repeated branching to produce the fibrous or absorbing roots, which are ephemeral and are continually being replaced by new lateral roots. Although sinker roots do penetrate to considerable depths, fibrous root, which accounts for the major portion of the root mass, is found primarily within the top 20-50 cm depending on the cultivar, the soil type and the age of the plan.

The extremity of the young root bears a prominent root cap, which protects the root apex from damage as the elongating root pushes its way through the soil. The cap is continually being worn away at its tip and replaced by divisions of cells in the root tip. As in the roots of other species, the root cap of the grapevine is probably an organ of perception of gravity.

The newly formed tissue close to the root tip consists of concentric layer of cortical parenchyma surrounding the procambial cylinder. The outer layer of this cortex constitutes the epidermis, the site of root hair production.

Young roots of grapevines may be either white or brown. The brown color results from the oxidation of phenols released from vacuoles of dead or collapsed epidermal cells. In grapevine roots, suberization is most extensive in mid-summer when the soil temperature is high and the soil water content is low. In soil some roots become suberized and brown to their tips. When conditions become more favorable the suberized roots may resume extension growth from the original root apical meristem or they may produce new lateral roots. It is probable that suberization of the hypodermis enables the primary roots to survive during periods of water or other unfavorable conditions.

Grapevine leaves

The newly formed leaf consists of the lamina, the petiole and a pair of stipules. The latter structures lack leaf traces and are ephemeral. Within the lamina the traces undergo repeated branching to give the characteristic palmate venation of the grapevine leaf. The leaf margins are toothed; each tooth ends in a hydathode, a water-

excreting gland. The upper epidermis is almost devoid of stomata but bears a well-differentiated layer of epicuticular wax. This wax consists of platelets of so-called 'soft wax' and differs in chemical composition from the epicuticular waxes of fruits, which contain both hard and soft waxes. The palisade tissue consists of a single layer of elongated cells in which the ratio of length to diameter is about 4:1. The palisade tissue accounts for up to 50% of the leaf thickness. The spongy mesophyll has five or six layers of polygonal or irregularly lobed cells and a very extensive system of air spaces.

Mesophyll of both types is amply supplied with chloroplasts. The lower epidermis has many stomata and there are large substomatal cavities. The lower epidermis lacks a cuticle but it has hairs of various types depending on the genotype. These hairs are usually found on the veins, and the hairiness of the underside of the leaf is a useful character for cultivar identification.

The leaf of the grapevine has two abscission zones, one at the junction of the lamina and the petiole and the other at the point of attachment of the petiole to the stem. In the process of leaf fall in autumn, these abscission zones are activated by signals from the senescing lamina. In some cultivars the distal abscission zone is the first to be activated, and the lamina fall off in advance of the petioles.

Leaf morphology in the grapevine and its relatives is of special significance because differences among genotypes in leaf shape are the foundation of ampelography, the art and science of grapevine cultivar description and identification. In the genus Vitis the predominant leaf form is palmate, in which all of the main veins arise from a single point. There are five main veins, and these serve the five lobes of the leaf. Each of these main veins is numbered, and measurements of the angles between veins and the lengths of veins are encoded for use in keys for species and cultivar identification. Other components of the key are derived from measurements or observations on leaf outline, leaf size and extent of lobes and sinuses; the shape of the petiolar sinus is of special importance. Records are also made on the extent and character of the leaf hair, leaf color, leaf contour and on dentation.

Sexual propagation

Flowering in the mature grapevine is normally a three-step process. The first step is the formation of Anlagen (singular Anlage) or uncommitted primordia by the apices of latent buds on shoots of the current season. Next , the Anlagen develop either as inflorescence primordia or as tendril primordia and shortly thereafter the latent buds enter into dormancy. In some circumstances Anlagen produce shoots instead of tendrils or florescences. Finally, the formation of flowers from the inflorescence primordia occurs at the time of bud burst in the next season.

Most species in the genus Vitis are dioecious, but nearly all commercially important cultivars of Vitis vinifera are hermaphrodite.

Reproductive anatomy

The ovary of the grapevine is superior; there are two locules, each containing two ovules with axile placentation. In brief, the style is short and the stigma is of the wet type. The tissues of style and stigma are rich in crystals of calciun oxalate. The stigmatic surface is covered with filamentous papillae; each papilla comprises about 20 cells. Mature receptive stigmas have a wet glistening appearance on the day of anthesis; the stigmatic exudate is continuous with similar material in the transmitting tissue. The mature ovary wall or pericarp consists of three tissues: (i) an outer epidermis; (ii) a mesocarp comprising inner and outer cortical parenchyma cells separated by a net of anastomosing vascular bundles and (iii) an endocarp composed of crystal containing cells and inner epidermal cells. At the base of the ovary is the disc, a whorl of nectaries which may or may not be functional. The nectaries are thought to produce the charac- teristic odor of the grapevine inflorescence but production of nectar is disputed on anatomical grounds.

The ovule of Vitis is anatropous, that is, inverted with the micropyle pointing towards the pedicel and with the funiculus joined to the outer integument forming a raphe. There are two integuments, inner and outer, and a well-developed nucellus. A single vascular strand traverses the funiculus and terminates at the chalaza. The outer integument is joined on one side to the raphe for most of its length but it is free at the micropylar end. The outer layer of the outer integument is rich in tannin bodies. The inner integument, which is composed of two or three layers, sometimes extends beyond the outer

integument to form a collar-like structure or endostome around the micropyle. Nucellus, the tissue which surrounds the embryo sac, is extensive in the Vitaceae, but nucellar embryony in vivo has not been established. The nucellus tissue of vinifera grapes possesses a high degree of regenerative competenee in vitro. Another characteristic of grapevine nucellus is the well-developed hypostase, a densely-staining, thick-walled tissue close the chalaza.

The grapevine has live stamens, each consisting of a bilobed another borne on a slender filament. Within each anther lobe arc two pollen sacs or microsporangia. The primary parietal layer and the primary sporogenous layer, are not well described. The anther wall arises from the primary parietal layer and consists of three tissues, epidermis, endothecium and tapetum. The primary sporogenous layer produces the pollen mother cells (PMC); meiosis in each PMC gives rise to four haploid microspores. The tetrad stage and the newly released microspores are readily observed by light microscopy using standard staining procedures.

Pollination and fertilization

The mode of pollination is a vexed question. The structure of the flower is not suggestive of wind-pollination, but most authorities agree the grapevine is primarily wind pollinated. Bud-pollination, involving dehiscence of the anthers before cap-fall, is common, and there is likely to be some involvement of insects in the dissemination of pollen. Additional is self-pollinated, cross-pollinated or both, but the high proportion of weak seedlings in open-pollinated populations strongly suggests that vinifera cultivars, unlike their dioecious progenitors, are normally selfed.

Embryo, endosperm and seed

The pattern of embryo formation in the grapevine is classified as the Geum variation of the Asterad type. The zygote undergoes an unequal division to produce a small terminal cell towards the chalaza and a large basal cell towards the micropyle. Derivatives of the terminal cell give rise to the apical meristem and cotyledons and derivatives of the basal cell give rise to the hypocotyl, the primary root and the suspensor, a tissue which attaches the embryo to the wall of the embryo sac. The pattern of endosperm formation in the grapevine is classified as helobial. The primary endosperm nucleus divides and a transverse wall is formed across the embryo sac, forming a small chalazal cell and a

large micropylar cell. Within the micropylar cell the nucleus enters into free divisions; up to six divisions occur in the absence of wall formation. Within the chalazal cell every division is accompanied by wall formation. In the mature seed the endosperm is irregular in shape and is composed mainly of small thick-walled cells containing oil, aleurone grains or crystals.

After fertilization there is a period of rapid cell division in the funiculus, raphe, chalaza and integuments. At the micropyle the outer integument thickens and elongates to form the beak. Towards the chalaza the outer integument becomes folded and a ridge is produced at the raphe on either side of which are two depressions or grooves known as fosettes. The pincer-like growth of the outer integument squeezes the nucellus and endosperm into a W-shape. The endosperm continues to grow within the rigid case formed by the outer integument and by 35 days after anthesis it has crushed and replaced the nucellus.

The hardening of the grape seed is due to lignification of the inner is of the outer integument. This hard layer is thick at the beak and thin at the fossettes. The inner integument remains thin and adheres to the endosperm.

Several well-known cultivars of grapevines produce seedless fruit. There are two main types of seedlessness: (i) parthenocarpv, in which the berries develop without fertilization and are entirely seedless; and (ii) stenospermocarpy, in which the berries each contain one or more aborted seeds.

Anatomy of the berry

There is much variation in the literature in the naming of the component tissues of the grape berry. According to Pratt the fruit wall, from its outer surface to its inner surface adjacent to the seed, is the pericarp and has five components: epidermis, hypodermis, outer wall, inner wall and inner epidermis. Other scientist said that, the epidermis as epicarp, the middle of the wall as mesocarp and inner epidermis as endocarp. Additional refers to a pericarp with three main components: (i) epicarp or pellicule comprising cutitle, epidermis and hypodermis; (ii) the mesocarp or pulp; and (iii) endocarp or inner wall of the pulp.

The pedicel of the developing flower has five or six bundles, which separate in the

receptacle to give branches that serve the flower parts and branches that serve the ovary. In the developing fruit the remnants of the flower-bundlcs can be seen in the 'bourrelet'. The ovary-bundles give rise to a complex network of vascular traces within the berry. This network has three components, two of which, the bundles serving the seeds and the bundles serving the placenta, have a common origin in the septum.

Select Parameters Planting

In viticulture, the effect of the physical environment on vine development, such as grape ripening and wine sensory attributes, are termed the "terroir effect". This influence of the physical environment is very complex and difficult to study, as it depends on many factors, such as geomorphology, soil, climate and vine physiology (Seguin, 1986). Terroir is considered as an important factor in wine quality and character, especially in European vineyards (Falcetti, 1994).

A definition proposed by the Organisation Internationale de la Vigne et du Vin (OIV) refers to the originality of the wine produced in a given terroir, and hence the added value: 'A terroir is a unique and delimited geographic area forwhich there is a collective knowledge of the interaction between the physical and biological environment and applied viticultural practices. The interaction provides unique characteristics and creates a recognition for goods originating from that area. Terroir includes specific landscape characteristics and territory values.' (OIV, 2008).

Natural environment

The natural environment plays a key role in the development of the vine. On wine varieties reflected the quality of the wine produced by the effects of the natural environment. Specifically various aspects of the natural environment, including soil, the parent material, exposure, topography, temperature, humidity, sunshine, rainfall, etc., decisively influence the quality and allow more or less in a range to express the quality characteristics of the finished product. Also significantly affected a vineyard and accepts different effect when it is established in the side of a mountain or in a valley or beside the sea.

With regard to table grapes, the influence of the natural environment does not affect the quality of the grape. This is because the table grape varieties commonly grown in lowland soils with irrigation potential and the goal is production.The choice of location is influenced by the specific parameters of the natural environment, such as soil and climate.

Soil

The vine thrives in a wide range of soil types, which affect the product quality. The physicochemical properties of the soil affect different parameters (e.g., water holding capacity, temperature, etc.) and which in turn affects various physiological functions and contribute to product quality.

There is no generic definition of an "ideal soil" because a soil's performance is influenced by the local climate, landscape characteristics, grape variety, and cultural practices and is judged in the context of a winegrower's objectives for wine style, market potential, and profitability of the enterprise. For any one site, the particular combination of biophysical variables and cultural practices gives rise to its terroir, which may be expressed through a wine's typicity (R. E. White, 2015)

The soil properties which have a strongly influence in growing wine grapes, are: soil depth, soil structure and water supply, soil strength, soil chemistry and nutrient supply, soil organisms (R. E. White, 2015).

Grapevines must have 16 of the 118 known elements to grow normally, flower, and produce fruit (R. E. White, 2015). In the table (11) we can see, the absorption of the nutrients elements from the soil in one stremma of vineyard (Delas. j., 1989).

Table 11 Absorption of nutrients elements of the vineyard from soil (1 stremma/year). Source Delas. j., (1989)

Macronutrients	
N	2-7 kg
P	0,4-1 kg (1-2 kg P2O5)
K	4-7 kg (5-8 kg K2O)
Ca	4-8 kg (6-12 kg Cao)
Mg	0,6 – 1,5 (1-2,5 kg Mgo)
S	0,6 kg
Micronutrients	
Fe	60 g
Zn	10-20 g
Mn	8-16 g
B	8-15 g
Cu	6-12 g

1 stremma = 10 ha

Accordingly, before the establishment of the crop there should be soil samples taken at two depths, 0-30 cm and 30-60 cm, for a complete, soil analysis, comprising of:

- Soil Texture (Mechanical Analysis)
- Soil Organic Matter
- Soil pH
- Calcium carbonate ($CaCO_3$) (free and active)
- Electrical Conductivity (E.C.)
- Macronutrients (N, P, K, Ca, Mg)
- Extractable Nitrate-Nitrogen (NO_3-N)
- Micronutrients (Mn, Zn, Fe, Cu, B)
- C.E.C.
- Heavy Metals

Also a soil section should be used to examine the soil profile in depth and to determine the sequence of soil horizons, which can inform us about soil formation processes, and potential for development of the root system.

Finally, if the particular site was previously planted with a vineyard, there should be testing for nematodes and the development of the root system. Nematodes feeding on or invading roots cause malformations and necrosis (R. E. White, 2015).

Soil suitability for cultivation vineyard in Greece

Ministry of Rural Development and Food, Digital Value-Added Services Soil Maps Data and Demarcation of Rural Areas

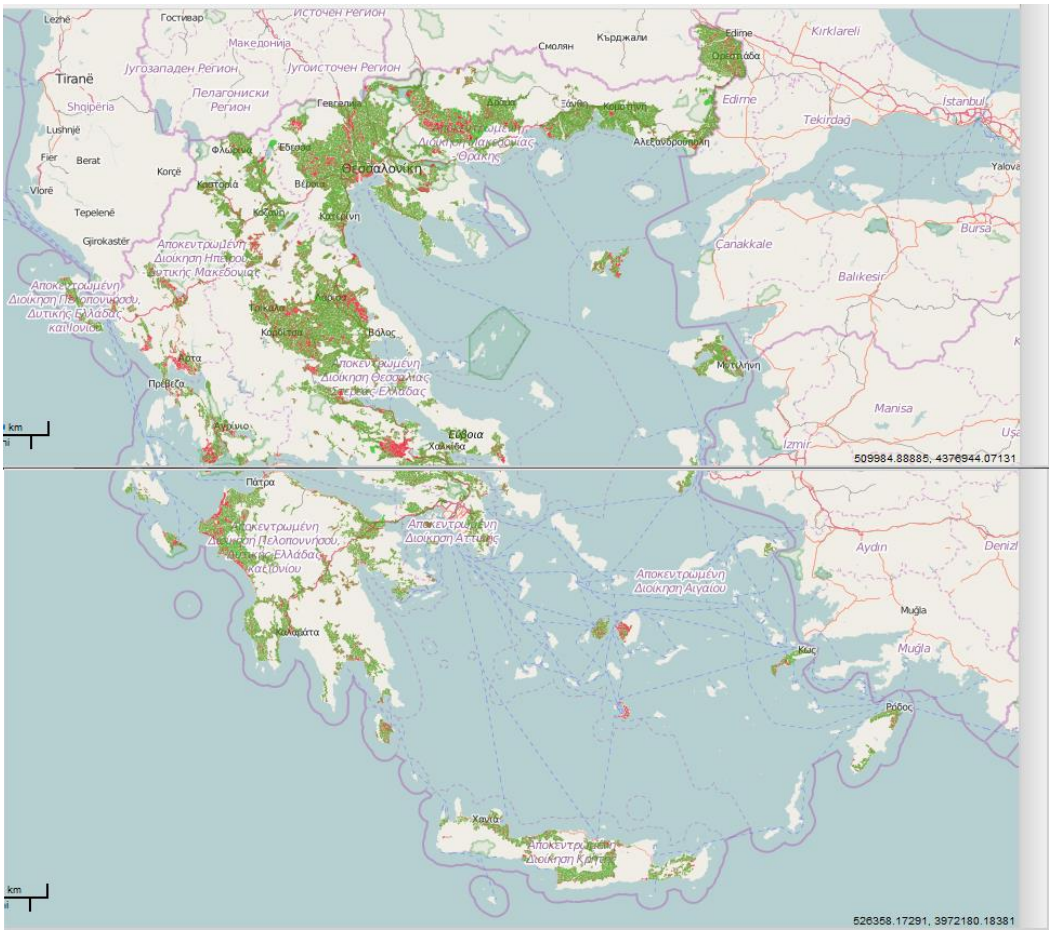


Figure 6 Soil Map Data and Demarcation of Rural Areas. Source : https://iris.gov.gr/SoilServices/danger.html

A map based on soil surveys and climatic data was used to identify the soil suitability for cultivation vineyard in Greece (Fig.6). With the red color are the areas that are not

recommended for establishing a vineyard and with the green color are the areas that is are recommended for a vineyard.

Climate

Initially, before the installation of the crop, there should be a collection of reliable climate data of the area from a nearby meteorological station.

Climatic data should be used mainly for the variance of temperature, precipitation and sunshine. For evaluation of favorable temperatures in the growing season, the main methods are calculation of the solar thermal index Winkler. Also taken into account the impact of geographical parameters on climatic parameters, altitude, relief etc.

Furthermore, the climatic requirements of the variety must coincide with the local climate. Therefore conditions that allow sufficient accumulation of sugars in the berries together with mild temperatures during curing, contribute to the production of high quality products.

Main vine pests and diseases

Vines are affected by a wide range of pests and diseases (Table 12), some of which which may be devastating for the crop. For example Phylloxera vitifoliae, was introduced to Europe from North America and caused an epidemic which destroyed most of the vines for wine production in Europe and especially in France.

Table 12 Main vine pests and diseases. Source: P. Unwin (1996).

FUNGI
Powdery mildew caused by *Uncinula necator*
Downy mildewcaused by *Plasmopara viticola* (Berl. & Toni)
Anthracnose caused by *Gloeosporium ampelophagum* (Pass)
Black rot caused by *Guignardia bidwelli* (Ellis)
Black measles caused by *Fomes igniarius* (L. ex Fr.)
Dead-arm caused by *Phomopsis viticola*
Eytypa dieback caused by *Eytypa lata*
Botrytis-Grey rot caused by *Botrytis cinerea* (Pers.)
Blue mould caused by *Penicillium* sp.
Black mould caused by *Aspergillus niger* (Van Tiegh)
Rhizopus rot caused by *Rhizopus nigricans* (Ehrenb. ex Fr.)

VIRUS DISEASES
Yellow mosaic
Leaf roll
Yellow vein
Asteroid mosaic
Corky bark
Bacterium Diseases
Pierce's disease caused by *Xylella fastidiosa*
PESTS
Phylloxera vitifoliae
Grape leaf hopper (*Erythroneura elegantula* Osborn)
Red spider mite (*Tetranychus pacificus* McG.)
Erinose (*Eriophyes vitis* Pgst.)
Grape berry moth (*Polychrosis viteana* Clem.)
Eudemis moth (*Polychrosis botrana* Schiff.)
Cochylis (*Clysia ambiguella* Hübner)
Nematodes

3.3.3 Main cultivars of grape varieties

The most widespread red and white table grape varieties are:

a) Table grape varieties and dried grapes

Red table grape variety

CARDINAL

It is anarly variety. Cultivated mainly in Thessaloniki, Chalkidiki, Corinth, Ilia, Messina and Crete. It is vigorous of high performance and long shelf life.

MUSCAT DE HAMBURG

Wine grapes and table variety". Cultivated mainly in the prefecture of Thessaly and in Thessaloniki. The variety adjasts well in different territorial and climatic conditions.

ITHAKI

Is a hybrid which was created by the Aristotle University of Thessaloniki. It is cultivated mainly in Macedonia. It is vigorous and highly productive

FRAOULA

A greek variety which is recommended mainly for cultivationin Peloponnese and Sterea Greece. It is highly productive but has short shelf life and it is not particularly resistant to transportation treatments. .

CRIMSON SEEDLESS

Red and seedless, late maturing, highly productive variety. It is recommended for cultivation in Peloponnese, Thessaly, Macedonia, Thrace, Dodecanese and Crete. , highly productive

RIBIER

Grown mainly in the countries of the Mediterranean. In Greece it is cultivated in Thessaly, Macedonia and Central Greece vigorous variety, highly productive(over 300 kilos per stremma). Needs deep, fertile, cool soil with sunlight exposure. The varity is sensitive to winter freezes. The grape berries are large and uniform in color. ATTICA SEEDLESS

The variety is cultivated only in the region of Attica. It is a red, seedless , of medium vigorousness and highly productive. A variety of early development which produces fruits of high contain in sugars (the grape juice contains 5-8 g/l sugars and 160-200 g/l acids expressed as tartaric acid). The variety is also strong to transportation treatments

White table grape variety

PERLETTE

A white variety cultivated in the region of Macedonia. Used mainly for the production of canned fruits. The variety is vigorous and productive and when it is irrigated can produce 2500 kg/1000m^2.

VICTORIA

the variety is cultivated in Halkidiki, Kavala, Larissa, Achaia and Corinth. It is of medium vigorousness and highly productive w. It is an early variety which withstand transportation handlings .

SUPERIOR SEEDLESS

A variety which is grown in Peloponnese, Central Greece, Cyclades and the Dodecanese. A white, seedless, early variety, ofmedium - high productivity and very vigorous.

RAZAKI

White variety, widelyspread around the world. Cultivated almost all over the Greek territory. Grape variety is very vigorous and highly productive. The variety is well adapted to different soil and climate conditions. Has long shelf life when stores in cold conditions and is resiststransport treatments

ITALIA

Cultivated almost all over the Greek territory. The variety is vigorous and very productive. It is an excellent variety with a slight Muscat flavor.

OPSIMOS SOUFLIOU

Cultivated in Macedonia and Thrace. It is white vigorous and very productive variety.

OPSIMOS EDESSIS

Cultivated mainly in Macedonia. It is a white variety. It is vigorous and very productive variety, persists the transportation treatments and has long shelf life.. Reserved for the Greek market.

SIDERITIS

A Greek variety which matures slowly, vigorous and productive. The variety is used in order to produce sparkling wines.

b) The main dried products which are producedby grapes are raisins, sultanas and currants. Raisins are the second most important product of the grape vine after wine . The most popular grape types used for commercial drying are all *V. vinifera* cultivars (G. L., Creasy and L. L. Creasy, 2009)

BLACK CORINTH or CURRANT or ZANTE CURRANT

The “currant” is one of the oldest known raisins (the term currant is used to describe its small berry size, but it is a true grape [*Vitis vinifera*] and not a member of the Ribes species) (Christensen, L. P. 2000). It is a Greek Seedless variety. Produced in the Northwest Peloponnese and the Ionian Islands (Zakyntho and Kefallinia). It is a variety with vigorous vegetation, but of an average productivity. There are two types

of currants: the ones which are recognized as products of protected designation of origin (PDO) and the ones which are recognized as protected geographical indication (PGI) products. a) Currants produced in area of Aigialeia in the prefecture of Achaia called "Korinthiaki Stafida Vostitsa" (PDO) [442597/22-11-1993 (O.J. no.864/26-11- 1993)]. b) Currants produced in the prefecture of Zakyntho, called "Stafida Zakynthou" or Zante Currants (Black Raisins Zakynthos) (PDO) [C179/ 2007 pg.19,(L141 / 2008 pg.11)]. c) Currants produced in the prefecture of Ilia have been recognized as a "Stafida Ilia" (PGI) [C233/2010 pg.20, (L122/2011 pg.65)]. Greece still remains the major producer of 'Black Corinth' raisins—about 80 percent of the world production with California, Australia, and South Africa producing much of the remainder. (Christensen, L. P. 2000).

SULTANINA OR THOMPSON SEEDLESS

It is a seedless, vigorous and very productivevariety w. It is used for developing new varieties. Cultivated as a seedless in Heraklion, Rethimno and Corinth, as a table grape in Chalkidiki, Kavala, Crete and as wine grape in Corinth, Ilia and Crete. Also Sultanina is the same variety with Thompson Seedless, which cultivated in California (Christensen, L. P. 2000). Finally, a registration procedure is the name «STAFIDA SOULTANINA KRITIS» PGI.

c) Wine grape varieties

The most popular red and white wine grape varieties are :

Red wine grape variety

AGIORGITIKO

Greek red variety. It is grown mainly in Corinth. Vigorous and very productive variety. Depending on the altitude it produces different types of products.

VERJAMI BLACK

Grown in Lefkada, Preveza, Agrinio and Patra. A vigorous variety, , very productive and resistant to diseases. Wines of high alcolol percentage and good acidity are produced by this variety.

KOTSIFALI

Cretan red variety.. The variety is vigorus, robust, fertile, productive, of moderate resistance to drought and diseases. The variety produces high-grade, aromatic, low acidity with unstable color wine.

KRASSATO

Thessalian red variety. The plant is vigorus, robust, fertile, productive, relatively resistant to diseases. The variety produces high-grade, moderate acidity, moderate color wine.

LIMNIO

Greek red variety of Limnos. Grown in Limnos, Halkidiki, Evro, Rodopi, Xanthi, Kavala, Serres and Larissa. The plant is of medium vigorosness, fruitful, productive, very resistant to diseases and drought. The variety produces high-grade, medium acidity, with a medium color, light aroma wine.

LIATIKO

Dry red variety of Crete. The variety is vigorous, robust, fertile, highly productive, aromatic, moderately resistant to diseases and drought.

MANDILARIA

Cultivated in Cyclades, Rhodes, Crete, Peloponnese, Attica, Viotia, Thessaly, Evia and Macedonia. The variety is vigorous, very robust, productive, drought resistant. The wine produced out of this variety is of medium to low alcohol, medium acidity, rich in color.

MAVRODAPHNE

Red variety cultivated in the prefectures of Achaia, Ilia, Kefallinia, Lefkada. The plant is of medium vigorous and robustness, fertile, productive, and sensitive to drought. The wine can be dry and sweet, high-grade, medium acidity, with good color.

MESENIKOLA BLACK

Red variety cultivated in Mesenikola Karditsa. The variety is of medium vigorousness and robustness fertile, productive. Wine is moderate, moderate acidity, moderate color.

MUSCAT DE HAMBURG

It is a variety which is cultivated for wine s and tablegrapes . Produced mainly in Thessaly and the prefecture of Thessaloniki. The variety is successfully cultivated under very different territorial and climatic conditions.

MOSCHOFILERO

The variety grown in the Peloponnese, Lefkada, Zakyntho, Preveza and Florina. The plant is vigorous, robust, productive and relatively resistant in drought. The wine can be of high to moderate alcoholic strength, good to high acidity, with differences in its aromatic potential

NEGOSKA

Red variety of Goumenissa. The variety is vigorous, robust, fertile, productive and resistant to most diseases. The wine is high grade, medium acidity with good color.

XINOMAVRO

Red variety of northern Greece. The variety is vigorous, robust, fertile, productive and sensitive to drought. In higher altitudes it produces dry wine, of high alcoholic grade, good acidity, good flavor and color.

RODITIS

The variety is vigorous, robust, fertile, productive and relatively resistant in drought. In mountainous regions it produces dry wine with a good balance between alcohol and acidity, with good flavor.

SEFKA

A red variety of Bulgarian origin, grown in Macedonia and Thrace. The variety is very vigorous, fruitful, productive, resistant in drought. Wine is moderate in alcoholic strength, of moderate to low acidity andpoor in color.

SIDERITIS

Red variety grown in the Peloponnese. The variety is vigorous, robust, fertile, productive, resistant in drought. Wine is moderate in the alcoholic content, of high acidity.

STAVROTO

Red variety grown in Larissa. The variety is vigorous, robust, fertile, productive. Wine is moderate in alcohol content, of medium acidity, moderate in color

CABERNET SAUVIGNON

International variety originates from France. Grown all over Greece. The plant is vigorous, fertile, moderately productive and very sensitive to drought. The wine shows good balance between alcohol and acidity, has intense aromas.

CARIGNAN

Spanish red variety. Grown in Crete, the Peloponnese, Sterea Greece, Epirus and Thrace. The plant is vigorous, very fertile, productive and very resistant to drought. The wine is high in alcohol degrees, of moderate acidity, with good color and nice body.

CINSAULT

Red Mediterranean variety. Grown in the Dodecanese, Thessaly and Crete. The plant is of medium vigor, fruitful, very productive and resistant to drought. The wine is rich in sugars, moderate acidity, with good color and body.

MERLOT

Red variety of French origin. Grown in Epirus, Thessaly, Macedonia and Peloponnese. The plant is vigorous, fertile, of medium productivity and sensitive to drought. The wine is high in alcoholic content, of good acidity, characteristic aroma, with good body.

SYRAH

Red variety. Grown in 16 prefectures in Greece. The plant is vigorous, fertile, of moderate productivity, sensitive to winds and drought. The wine cvaries in the alcoholic degrees, usually of moderate acidity, with an intense flavor and color.

GEWURZTRAMINER

Variety of Italian origin. Grown in Arcadia, Imathia and Florina. The variety is vigorous, moderately fertile, of low to medium productivity. Wine is high in alcohol content, low to moderate acidity, very aromatic.

White wine grape variety

VILANA

White variety of Crete. It is vigorous, robust and very productive. Wine is moderate to high alcohol, with good acidity, moderately aromatic.

ATHIRI

It is an old variety of the central and southern Aegean. It is very vigorous, fertile, productive and resistant to diseases. The wine is of average alcoholic strength, light aromatic, low acidity.

MUSCAT OF ALEXANDRIA OR MUSCAT WHITE

White variety cultivated in Limnos, Ionian, Thessaly, Macedonia, Rhodes. The plant is vigorous, fertile, productive and resistant to drought. The wine is, dry, of good acidity, delivate and Muscat aromas. MUSCAT OF SAMOS

The variety is grown almost all over Greece. The variety is of medium vigorousness, fruitful, productive. Wines are is, dry and sweet, of moderate acidity and intense aromas,

AIDANI

It is grown mainly in the Cyclades. The variety is of medium fertility and production, sensitive to diseases. The wine has moderate alcoholic strength, moderate acidity and pleasant aromas.

SAVATIANO

White variety, grown mainly in Attica, Evia, Viotia, the Cyclades, western Crete, Peloponnese and Macedonia. The plant is moderately vigorous, fruitful, productive and resistant in drought. When cultivated in high altitudes wines with good balance in alcohol and acidity..

ASSYRTIKO

Cultivated all over Greece. Characterized by high alcohol title, high acidity, pleasant aroma

ROBOLA

White variety grown in the Ionian Islands. The variety is vigorous, robust, fertile, productive and sensitive to drought. The wine is of high alchoholic-grade, moderate to good acidity and distinctive aroma.

MONEMVASIA

White variety cultivated in the Cyclades and in several islands of the Aegean. The variety is vigorous and robust, resistant to diseases and drought, fruitful and productive. The wine is of high alcoholic grade, medium acidity, with characteristic aromas MALAGOUZIA

White variety grown in Etoloakarnania, Macedonia, the Peloponnese and scattered in Sterea Greece. The variety is vigorous, robust, fertile, productive and drought resistant. The wine has high alcoholic degrees, moderate acidity and very aromatic ZOUMIATIKO

It is a white grape variety grown in the Balkans. In Greece it is grown in Macedonia and Thrace. Variety is vigorous, robust, fertile, productive and resistant to diseases. The variety produces wines of moderate alcoholic strength, moderate to low acidity, with light aromas

DEBINA

White variety of Epirus. The plant is vigorous, robust, fertile, productive and sensitive to drought. The wine is dry, moderate to good acidity with special aromas. Out of this variety produces sparkling wine are also produced.

GRENACHE

Red Mediterranean variety of Spanish origin. Cultivated in many locations. The plant is vigorous, fruitful, very productive and resistant to drought. The wine has nice color, medium-bodied, high alcohol content and moderate acidity.

CHARDONNAY

Cosmopolitan white variety. Cultivated in several regions all over Greece. The plant is vigorus, fertile, productive and moderately sensitive to drought. The wine shows balance between alcohol and acidity, oily, rich body, aromatic.

SAUVIGNON

White variety of French origin. Grown throughout Greece. The plant is vigorus, fertile, medium productive. The wine is dry, balanced in sugars and acidity, aromatic, , with nice body, ,

d) Rootstock of grapes

The most widespread rootstock of grapes are:

420A MILLARDET ET DE GREASET

Rootstock with phylloxera strength, It requires deep soils with sufficient moisture. Is subjective moderate vigor with very good performance in the maturation process of the production of wine and table varieties.

SO4

These rootstock is quite vigorous, which sometimes contribute to increased production of plants. The strength of the active calcium carbonate is 17% -18%. Requires soil with enough moisture. Features of rootstock is that below the level

connectivity vaccines; subject remains frail and plants require mandatory support. The cuttings easily puts roots success is vaccination.

99 RICHTER

It is lively rootstock. It is vulnerable to drought and salt. It is resistant to nematodes and phylloxera. It is for soils with active calcium carbonate to 17% or 30% of total carbonate calcium. Not suitable subject early table varieties.

110 RICHTER

It is lively rootstock and has resistance to drought. It is resistant to nematodes and phylloxera. It is for soils with active calcium carbonate to 17% or 35-40% total calcium carbonate. Not suitable rootstock for table varieties due to low generation roots

1103 PAULSEN

It is lively rootstock rapid growth. It has resistance to drought. It is very resistant to nematodes and phylloxera. It is sensitive to moisture stay in the territory. It is for soils with active calcium carbonate to 18% or 40% of total carbonate calcium.

140 RUGGERI

It is very lively rootstock. It has resistance to drought and calcareous soils. Should be avoided in an early table varieties and use in northern regions because of slowing maturation. Creating roots are intermediate capacity but behave satisfactorily on vaccination.

31 RICHTER

It is highly resistant to phylloxera. The strength of the active calcium carbonate is up to 14%. Adjust in dry soils of average fertility and are resistant to salts. Vaccination is not satisfactory.

3.3.4 Current situation

World area under vine cultivation is showing a decline, during the period 2005-2014 of almost 200kha (Table 13) This decrease exists due to the reduction of European vineyards.

Table 13 Evolution of world area under vines. Source: OIV-World vitiviniculture situation (2015).

Year	Area under vines (kha)
2005	7770
2006	7734
2007	7661
2008	7593
2009	7553
2010	7526
2011	7497
2012	7513
2013	7564
forecast 2014	7573

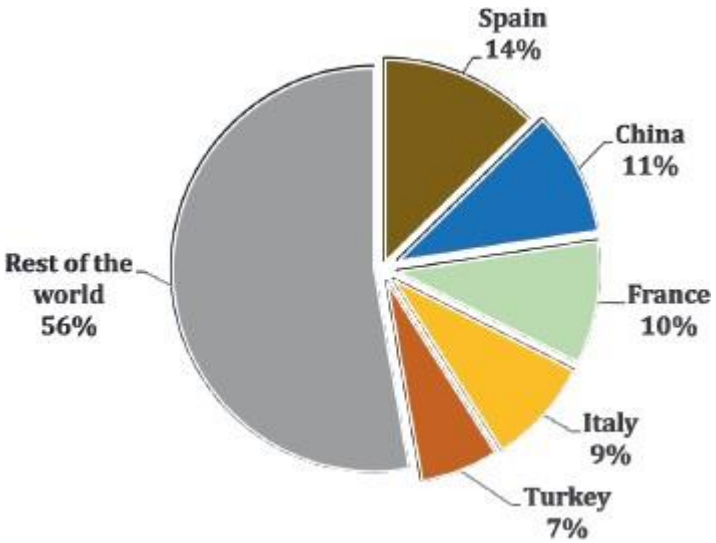


Figure 7 Percentage of Area under vines. Source: OIV-World vitiviniculture situation (2015).

Table 14 Area under vines. Source: OIV-World vitiviniculture situation (2015).

Area under vines					
Country (kha)	2010	2011	2012	2013	2014
Spain	1082	1032	1033	1037	1038
China	588	633	709	760	799
France	804	796	792	793	792
Italy	739	720	713	705	690
Turkey	514	508	497	504	502
USA	404	413	412	424	425
Argentina	218	219	222	224	228
Portugal	236	236	233	229	224
Chile	204	206	206	208	211
Romania	191	191	192	192	192
Australia	171	170	162	157	154
South Africa	132	133	135	133	132
Greece	112	110	110	110	110
Germany	102	102	102	102	102
Brazil	92	90	91	90	69
World Total	7526	7497	7513	7564	7573

During the period 2010 – 2014 the majority of countries show stability of the areas which are under vines (Table 14). Five countries represent 50% of the world vineyard in 2014 which are: Spain, China, France, Italy and Turkey (Fig. 7).. In 2014, China overcomes France in the areas of vineyard. Greece is in the 13th place (Table 14) and shows stability in the areas from 2010 – 2014. Finally, in the global map below (Fig. 8), we can see the major grape producers by type of products (wine grape, dried grape and fresh table grape).

Table 15 Statistical Data of Vineyard Register. Source: MINAGRIC (2015)

Statistical Data of Vineyard Register					
Region	Regional Units	Number of Producers	Number of land plots	Declared Area of Land Plots (ha)	Declared Varieties Area (ha)
ATTICA	WEST ATTIKI	1678	3238	1188.77	1129.74
ATTICA	EAST ATTIKI	5323	20450	5244.39	4974.74
ATTICA	ATHENS	3	18	6.6	6.6
ATTICA	PIREAUS	495	804	179.72	129.08
ATTICA		7499	24510	6619.48	6240.16
CENTRAL GREECE	VIOTIA	4489	9782	4032.25	3716.48
CENTRAL GREECE	EVIA	8925	13591	3272.62	2553.45
CENTRAL GREECE	EVRITANIA	17	26	5.98	5.26
CENTRAL GREECE	FHTIOTIDA	3380	4721	1286.4	1254.67
CENTRAL GREECE	FOKIDA	1216	1579	255.06	238.86
CENTRAL GREECE		18027	29699	8852.31	7768.72
PELOPONNESE	ARGOLIDA	864	1953	848.4	781.59
PELOPONNESE	ARKADIA	4785	7781	1877.56	1835.64
PELOPONNESE	KORINTHIA	10425	44376	16813.19	17244.43
PELOPONNESE	LAKONIA	2490	3289	902.74	799.04
PELOPONNESE	MESINIA	9686	18457	6544.97	6227.97
PELOPONNESE		28250	75856	26986.86	26888.67
WESTERN GREECE	AITOLOAKARNANIA	3074	3971	723.26	711.64
WESTERN GREECE	ACHAIA	11548	28379	11546.14	10324.49
WESTERN GREECE	ILIA	10157	18011	6759.2	6261.58
WESTERN GREECE		24779	50361	19028.6	17297.71
IONIAN ISLANDS	ZAKYNTHOS	3942	9475	2773.37	2661.52
IONIAN ISLANDS	CORFU	4404	4375	661.73	944.2
IONIAN ISLANDS	KEFALLONIA	2726	4302	1009.38	873.08
IONIAN ISLANDS	LEFKADA	1637	3512	583.81	541.25
IONIAN ISLANDS		12709	21664	5028.29	5020.05
EPIRUS	ARTA	322	618	119.92	117.37
EPIRUS	THESPROTIA	90	118	32.96	29.41
EPIRUS	IOANNINON	5750	8643	771.43	640.1
EPIRUS	PREVEZA	254	300	57.33	57.43
EPIRUS		6416	9679	981.64	844.31
THESSALY	KARDITSA	3829	5526	737.95	737.28
THESSALY	LARISSA	3953	7570	3803.91	3589.83
THESSALY	MAGNESIA	1299	1903	597.06	489.51
THESSALY	TRICALA	4596	5596	985.64	891.34
THESSALY		13677	20595	6124.56	5707.96
EASTERN MACEDONIA AND THRACE	DRAMA	636	1198	597.14	557.42
EASTERN MACEDONIA AND THRACE	KAVALA	2290	7537	3338.88	3082.81
EASTERN MACEDONIA AND THRACE		2926	8735	3936.02	3640.23

WESTERN MACEDONIA	GREVENA	1321	1600	291.88	282.55
WESTERN MACEDONIA	KASTORIAS	1171	1461	269.66	238.73
WESTERN MACEDONIA	KOZANIS	5082	7085	1228.21	1194.71
WESTERN MACEDONIA	FLORINAS	1304	3761	1121.18	975.54
WESTERN MACEDONIA		8878	13907	2910.93	2691.53
CENTRAL MACEDONIA	KILKIS	1052	2165	720.36	686.28
CENTRAL MACEDONIA	HMATHIAS	1236	1993	901.43	756.85
CENTRAL MACEDONIA	THESSALONIKIS	2466	4013	1578.7	1337.48
CENTRAL MACEDONIA	PELLAS	2244	3016	806.39	778.95
CENTRAL MACEDONIA	PIERIAS	917	1272	445.3	437.97
CENTRAL MACEDONIA	SERRON	2096	3288	838.94	803.61
CENTRAL MACEDONIA	HALKIDIKIS	1850	3109	1838.74	1681.52
CENTRAL MACEDONIA		11861	18856	7129.86	6482.66
EASTERN MACEDONIA AND THRACE	EVROS	2234	2750	533.18	533.18
EASTERN MACEDONIA AND THRACE	ΞΑΝΘΗΣ	222	305	116.84	114.78
EASTERN MACEDONIA AND THRACE	RODOPI	740	953	275.6	274.16
EASTERN MACEDONIA AND THRACE		3196	4008	925.62	922.12
NORTHERN AEGEAN	DODECANESE	1656	5719	1190.08	1100.51
NORTHERN AEGEAN	CYCLADES	7518	12562	3577.84	3506.08
SOUTHERN AEGEAN	LESVOS	2922	5474	1061.06	1039.86
SOUTHERN AEGEAN	SAMOS	4366	9907	1954.34	1914.11
SOUTHERN AEGEAN	HIOS	1683	2831	440.91	414.94
SOUTHERN AEGEAN		18145	36493	8224.23	7975.5
CRETE	HERAKLION	31527	86776	18440.42	17676.74
CRETE	LASITHI	6836	14161	1599.37	1597.21
CRETE	RETHYMNO	8215	14848	2332.19	2364.23
CRETE	CHANIA	8236	12113	1597.25	1577.39
CRETE		54814	127898	23969.23	23215.57
TOTAL		367,540	756,624	120,717.6	114,695.2

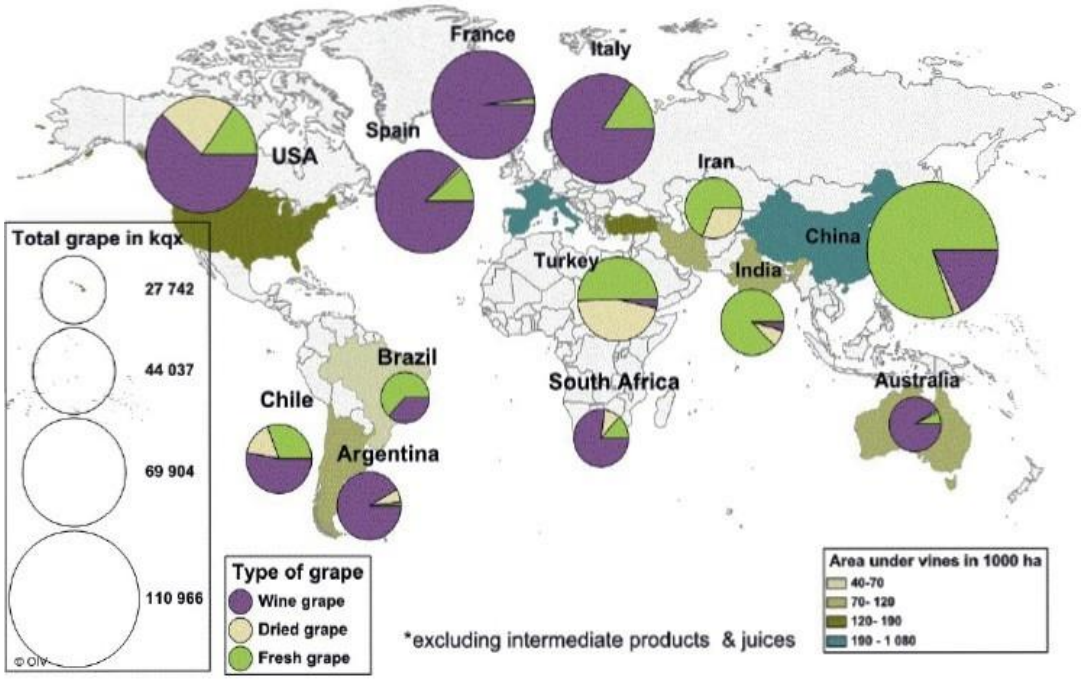


Figure 8 Map of major grape producers by type of products. Source: OIV-World vitiviniculture situation (2015).

Concerning the situation in Greece, the number of producers and the areas of table grapes and wine grapes have different results (Table 15)..

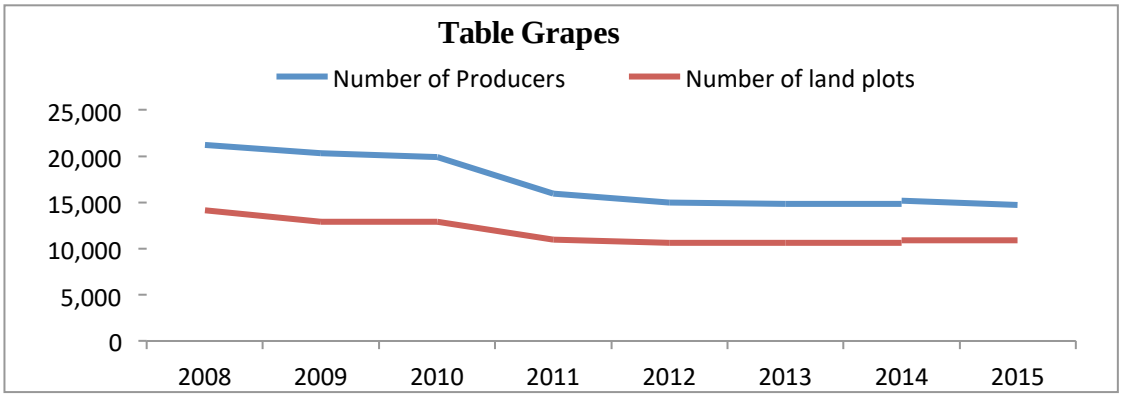


Figure 9 Producers and the areas of table grapes and wine grapes from 2008-2015. Source : OPEKEPE (2015).

The number of producers who cultivate table grapes declined from 2010 to 2011 and was stabilized after 2011 until today (Fig. 9). The reduction of the number of land plots in Greece related to the decline of the European vineyard. The cultivated area followed the same pattern (Fig. 9).

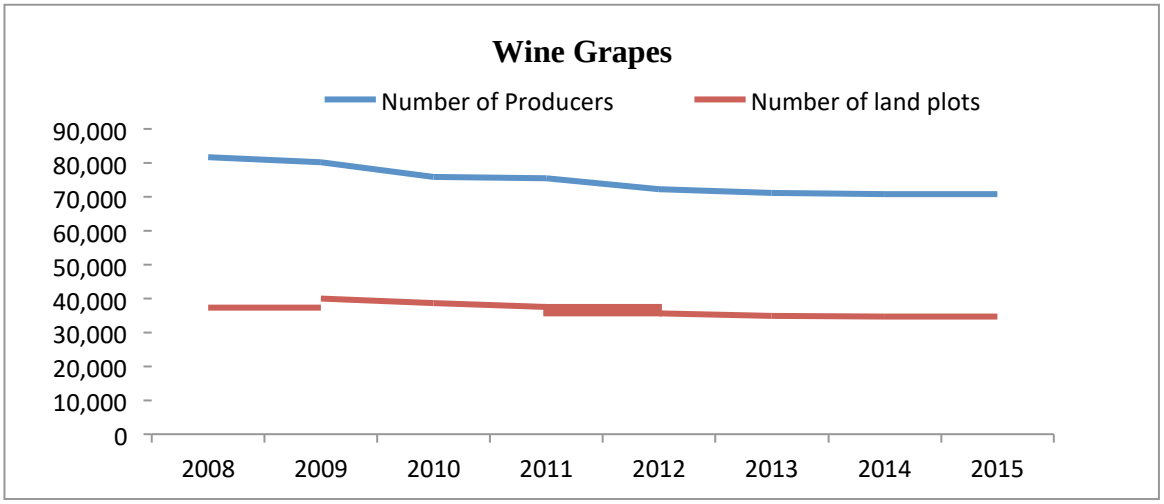


Figure 10 Producers and the areas of table grapes and wine grapes. from 2008-2015. Source : OPEKEPE (2015).

Statistical data shows that the number of producers who cultivate wine grapes from 2008 to 2015 remain stable as well as number of land plots (Fig. 10).

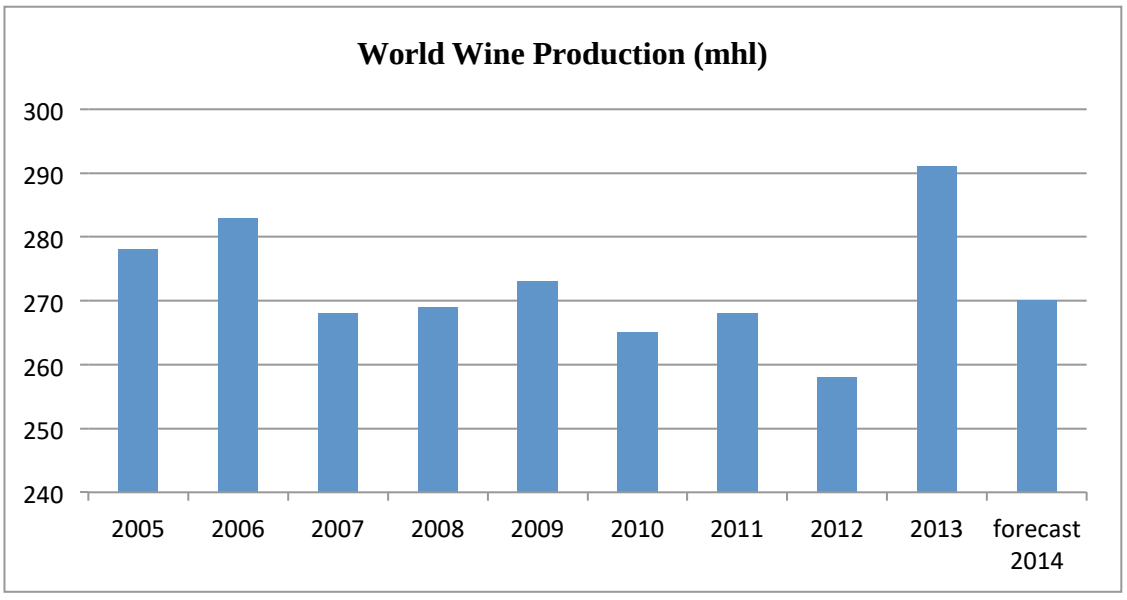


Figure 11 World wine producion (mhl), from 2005-2015. Source: OIV-World vitiviniculture situation (2015).

According to the above table from 2010 there is an increased trend in global grape production (Fig. 11). This increase is due to the more favorable average climate conditions as well as to the partial redistribution of vineyard. In 2014, France, Italy, Spain and the USA (Fig. 12), record decline in production, in comparison with very high production, in comparison with the very high production levels in 2013 (World vitiviniculture situation. OIV. 2015)

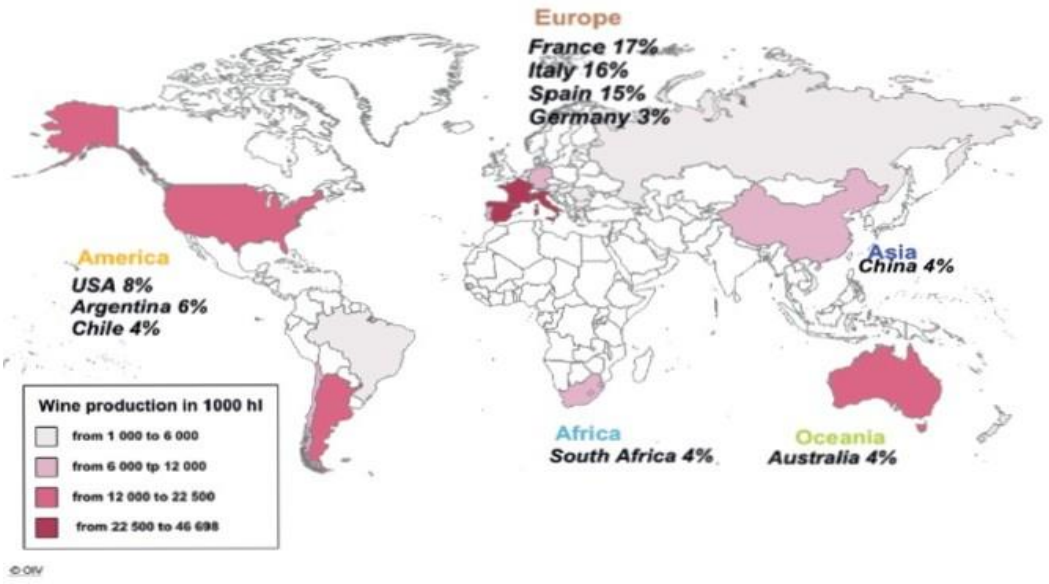


Figure 12 Map of 2014 World Wine Production Source: OIV-World vitiviniculture situation (2015).

The wine production declined slightly. The trend, however, is decreasing since 2005 to 2015. In Greece the quantity has been reduced from 4000hl to 2500 hl (Fig. 13).

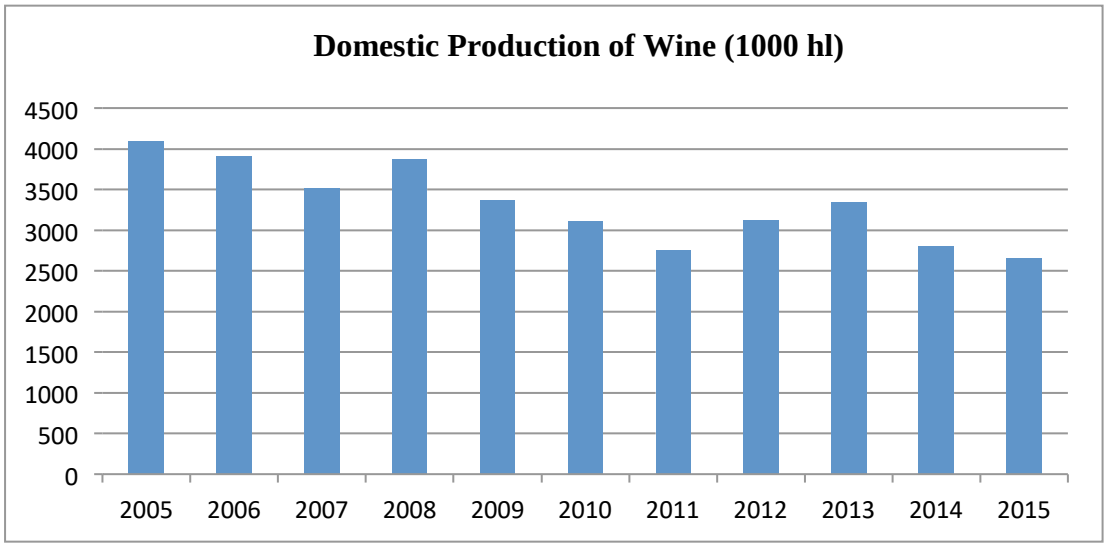


Figure 13 Domestic production of wine grapes (1000 hl), from 2008-2015 Source : KEOSOE 2015.

Protected geographical indication (PGI) has appeared for the first time in Greece and stayed stable up to now. Also the protected designation of origin wines (PDO) stayed stable until today. All the other types of wine showed a significant decrease in 2011 and since then had a small increase until now (Fig. 14).

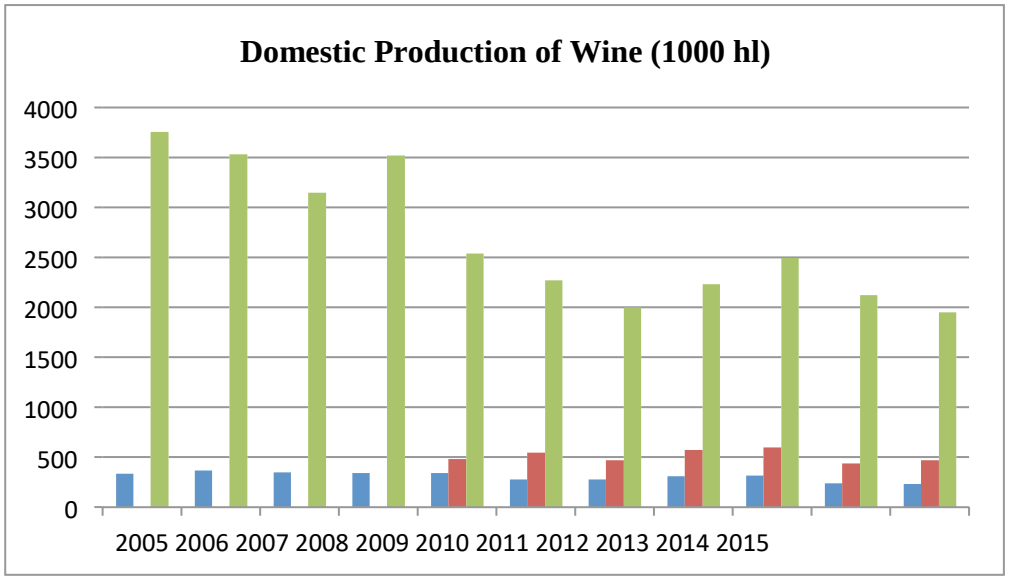


Figure 14 Domestic production of wine grapes. (1000 hl), distinguishing in PDE, PG and all the other wines from 2008-2015. Source : KEOSOE 2015.

In Greece, the ratio of wine production between red and white wine is 1 to 3, showing a higher preference to white wines (Fig. 15).

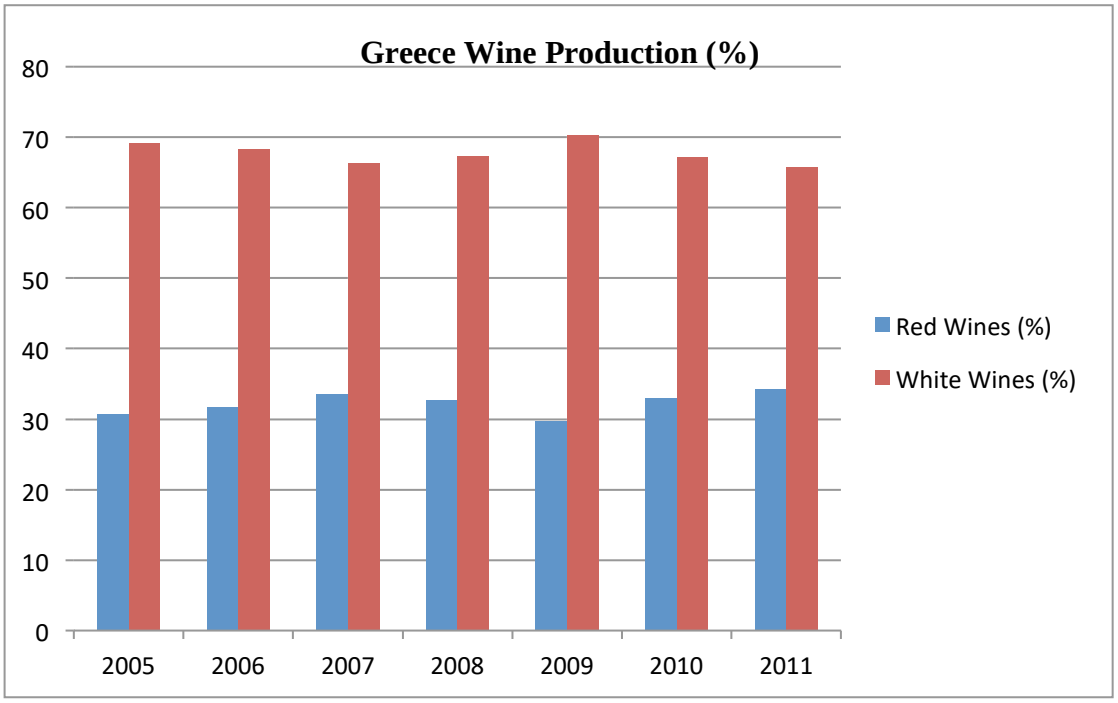
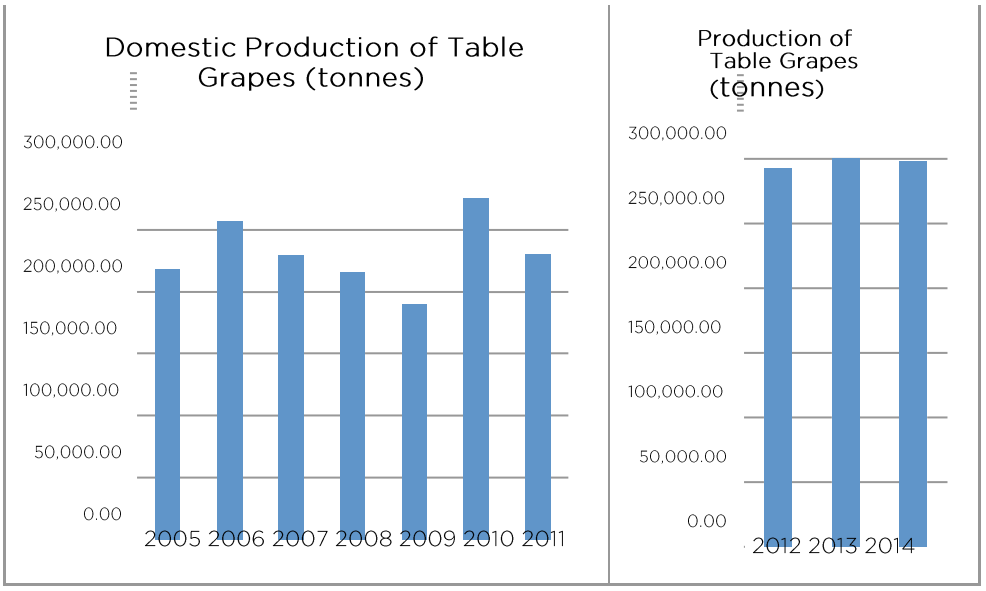


Figure 15 The ratio of wine production between red and white wine. Source: MINAGRIC.



Source: OIVStat Source: USDA Foreign Agriculture Service

Figure 16 Domestic production of table grapes (tn). from 2008-2015 Source: OIVStat.

Figure 17 Domestic production of table grapes (tn). Source: USDA

For table grapes, there was an initial decrease from 2006 to 2009, but since 2012 table grape production has been increased (Fig. 16 & 17).

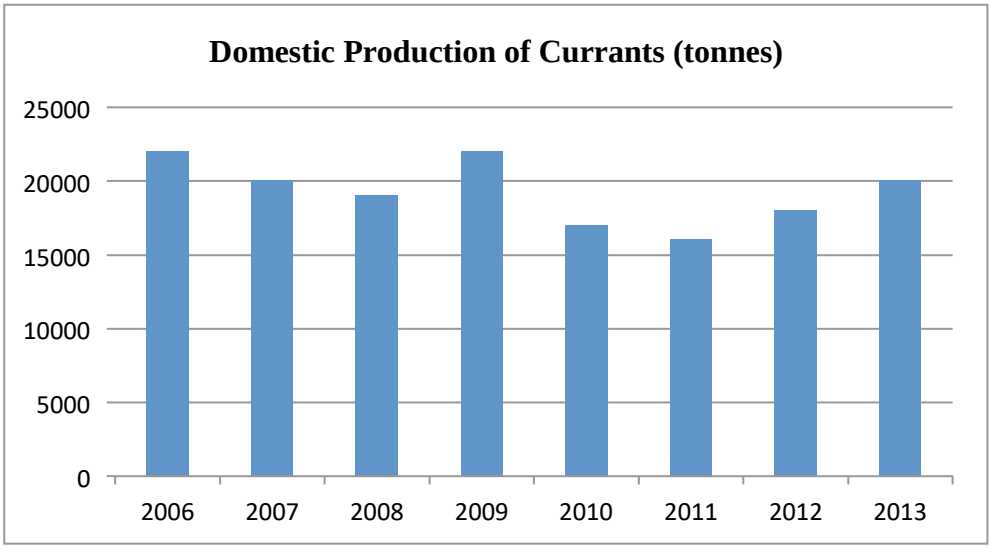


Figure 18 Domestic production of currants (tn). Source: FAOStat.

During the period 2006 – 2013 (Fig. 18), production of currants a decreasing trend, with cyclical changes in production volume that depend on weather conditions (Ministry of Rural Development and Food).

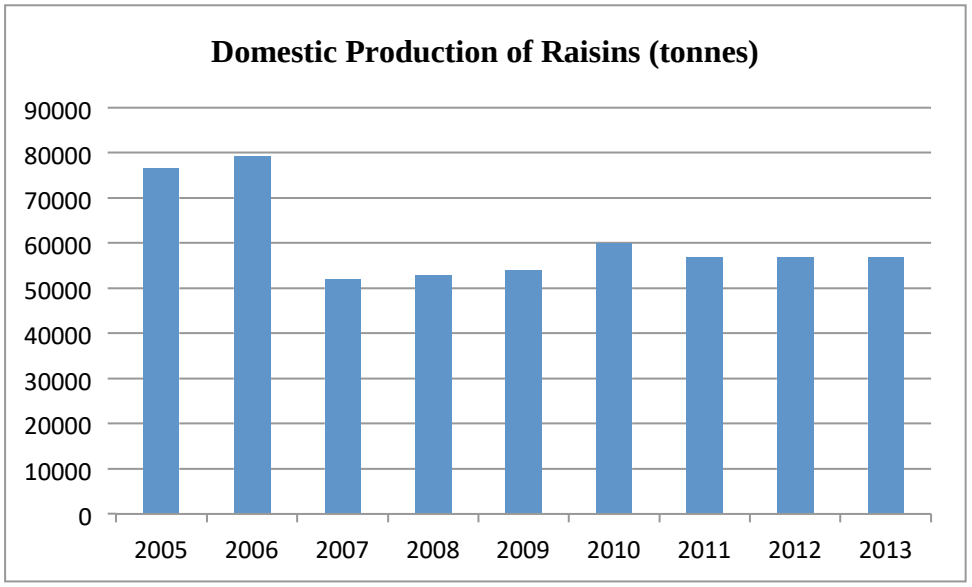


Figure 19 Domestic production of raisins (tn). Source: FAOStat.

In raisins, the production from 2005 to 2006 has a slight increase reaching 80.000 tons. But from 2006 onwards there is a significant drop and remains between 50.000 and 60.000 tonnes (Fig. 19).

The products of the vines

The products of the vines are: table grapes, dried grapes (currants, sultanina, raisins), bottle wines, sparkling wines, bulk wines, distillate (tsipouro, tsikoudia and ouzo), must, retsina, vinegar, grape juice, and using grape leaves in cuisine (Dolma).

4. Analysis & Discussion

4.1 Market Analysis

4.1.1 Consumer habits and requirements

Many studies have been done to identify consumer wine preferences. Today, people prefer to consume wine not as a part of their daily diet but for their pleasure, physiological satisfaction and cultural interest. In the past, the international image of Greek wines was not very good despite its history and experience of winemaking. The emphasis was on the production for self consumption or bottled low-quality wine which is channeled to local markets. According to some studies, commercial wines represent only 40% of consumption, while 60% of wine is assigned to bulk wine consumption. However, Greek climatic conditions and the existence of a broad viticulture have helped to create good conditions for differentiation. (Hal MacFie, 2007).

Concerning organic wine there is confusion. Experts seem to agree that organic wine must start from organically grown grapes. According to previous report, Greek consumers did not seem to have many expectations due to the low level of domestic competition, non-existence of foreign competition, and the fact that, for most consumers, it is a new and unknown product. Although, consumers satisfaction has to do with the quality (colour, aroma, taste and finesse), reliability and price. The above shows there is significant possibility for improvement of the product. (Hal MacFie, 2007).

According to reports of Hellenic Statistical Authority, the average monthly consumption of table grapes is 570,12 g per family and 220,76 g per person. The consumption increases during summer and especially during July and August because of the tourists who visit Greece. On the other hand, the average monthly consumption of wine is 1444, 66 per family.

4.1.2 Global Markets

During the period 2005 – 2014 there were no spectacular increases and decreases and from 2009 there is stability in the world wine production (Fig.20). The economic and financial crisis of 2008, have affected the global wine consumption and has impeded the return to the growth of global consumption observed between 2005 and 2007. The

three major countries in the world in the wine consumption are USA, France and Italy (Table 16).

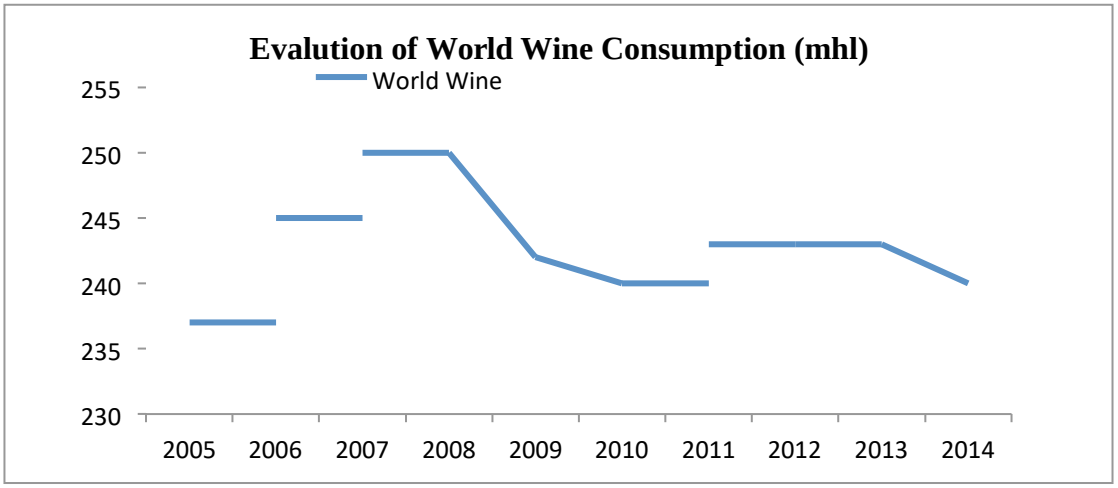


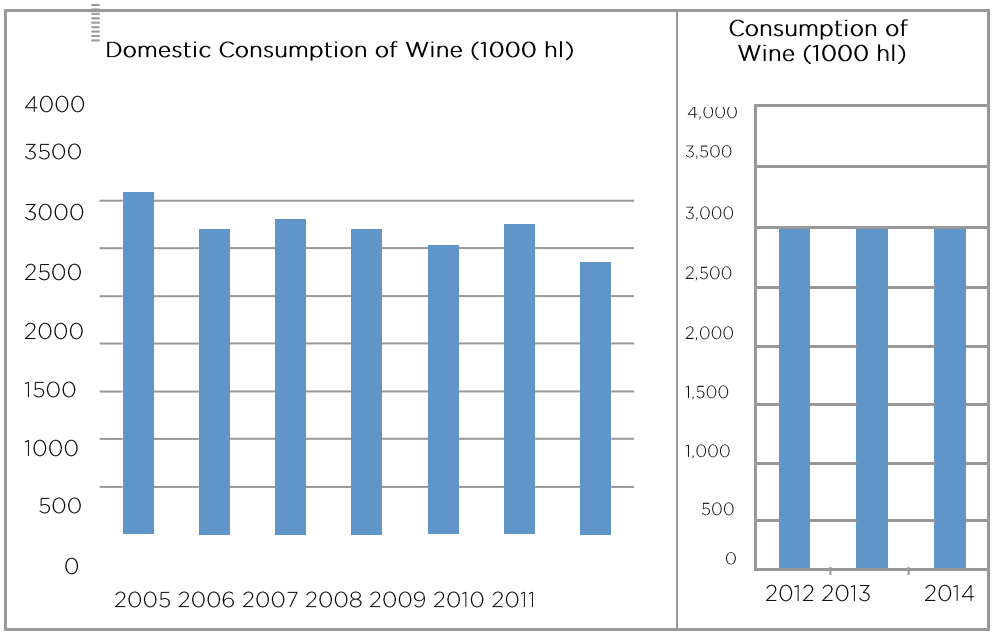
Figure 20 Evaluation of World Wine Consumption (mhl) OIVStat (2015).

Table 16 Major countries in the world, in the wine consumption Source : OIV.

Wine Consuption					
Country (Mhl)	2010	2011	2012	2013	forecast 2014
USA	28	28	29	30	31
France	29	29	29	29	28
Italy	25	23	23	22	20
Germany	20	20	20	20	20
China	16	17	18	17	16
United Kingdom	13	13	13	13	13
Russian Federation	12	12	11	10	10
Argentina	10	10	10	10	10
Spain	11	10	10	10	10
Australia	5	5	5	5	5
Canada	5	5	5	5	5
Portugal	5	5	5	4	4
South Africa	3	4	3	3	4
World Total	240	243	243	243	240

4.1.3 Domestic market

In Greece there was a decrease of almost 500 hl between 2005 and 2014. Since 2008 – 2009, when Greece was confronted with crisis the wine consumption remained relatively stable, indicating that crisis did not affect wine consumption significantly (Fig.21 & 22).



Source: OIV Source: KEOSOE

Figure 21 Domestic consumption of wine grapes (1000 hl). OIVStat.(2015)

Figure 22 Domestic consumption of wine grapes (1000 hl). Source : KEOSOE 2015.

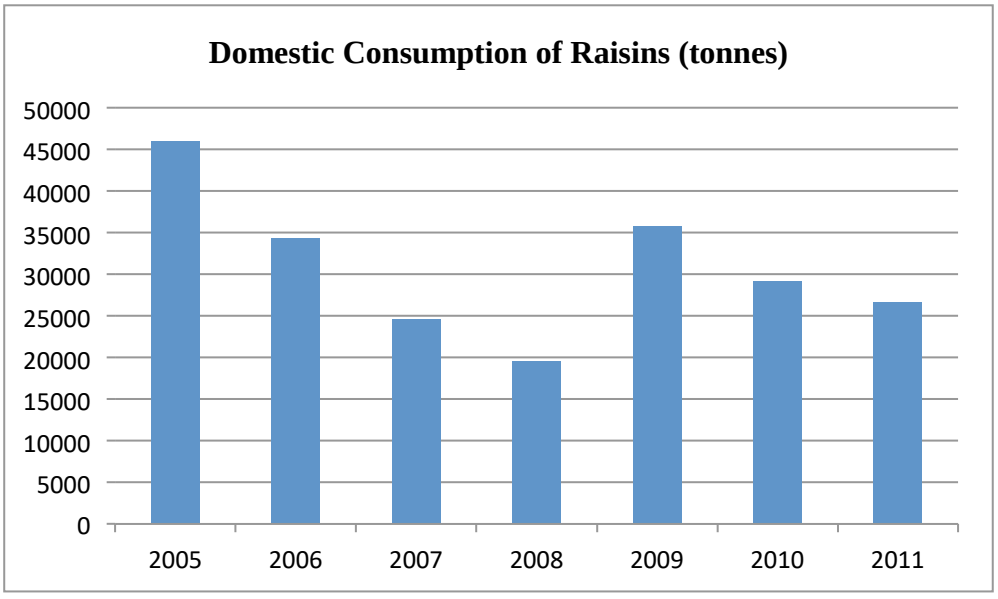


Figure 23 Domestic consumption of raisins (tn). Source: OIVStat.(2015)

The domestic consumption of raisins seems to be unstable. (Fig.23).

Considering the consumption of table grapes in Greece there was an increase from 2007 to 2010 which was stabilized in 2011 (Fig.24).

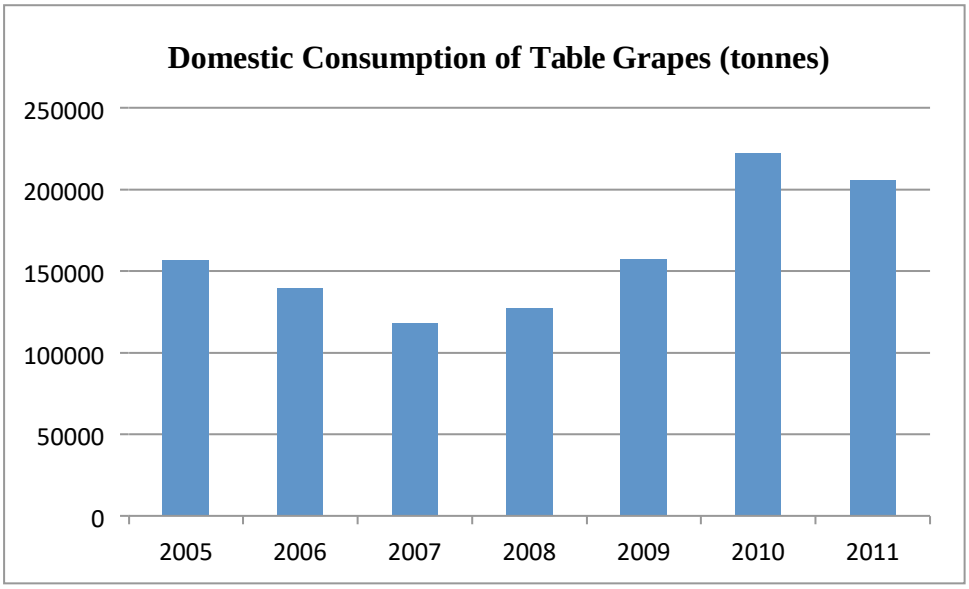


Figure 24 Domestic consumption of table grapes (tn). Source: OIVStat.(2015)

4.1.4 Import-exports analysis

World imports and exports of table grapes are showing an increase between 2005 and 2014 (Fig.25), indicating a worldwide increase in interest for table grape production.

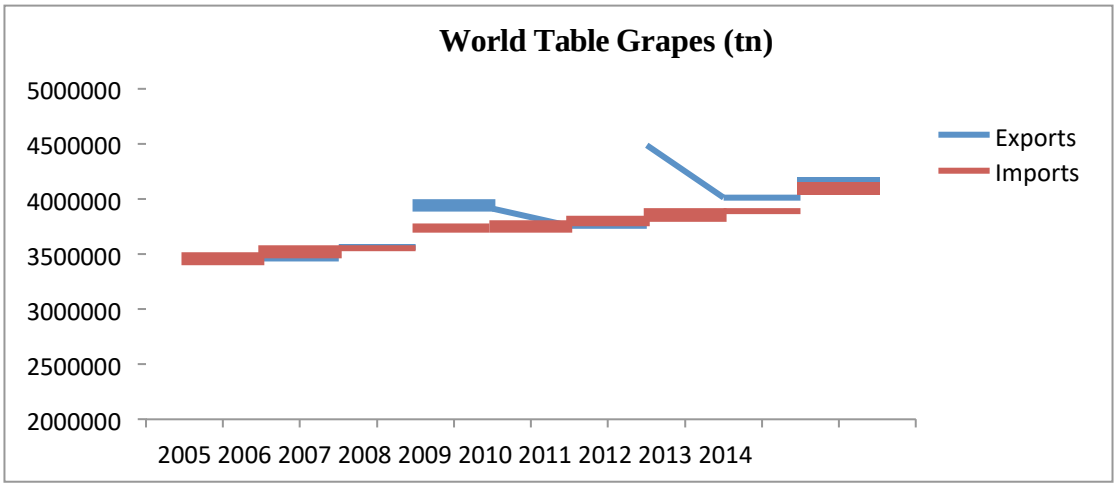


Figure 25 World imports and exports of table grapes (tn). Source: ITC (2015)

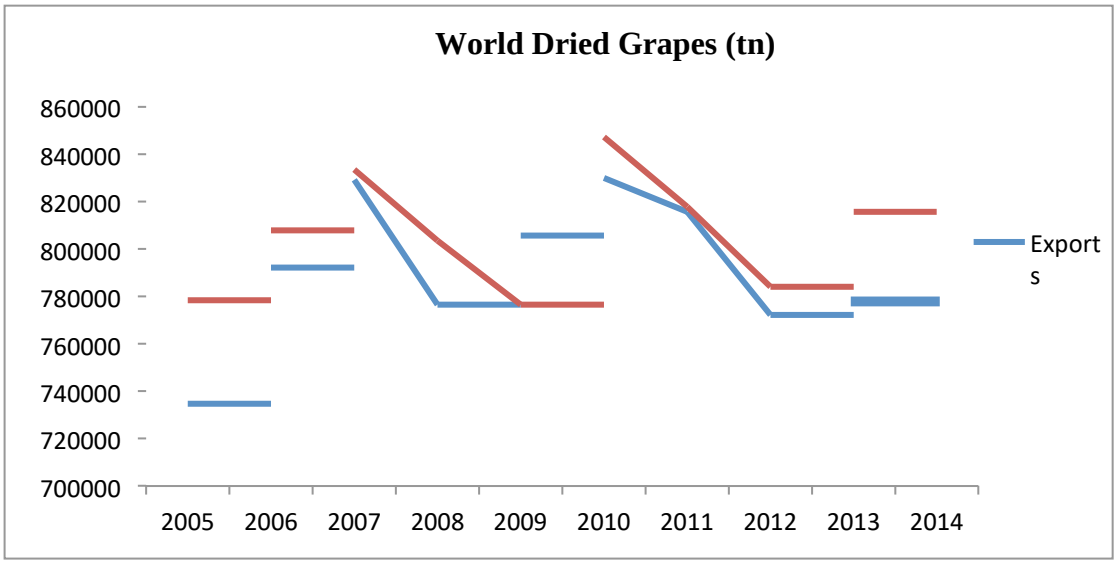


Figure 26 World imports and exports of dried grapes (tn). Source: ITC (2015)

Considering the imports and exports of world dried grapes there appears to be is a cyclical increase and decrease of exports and imports between 2005 and 2014 (Fig.26).

For 2014, the top exporting country of dried grapes was Turkey while Greece was eighth among the 10 major exported countries in the world (Table 17.)

Table 17 The top 10 exporting country of dried grapes (tn) for 2014. Source: ITC (2015)

2014	Dried Grapes
Exported Countries (Top 10)	Quantity (tons)
Turkey	225522
United States of America	152614
Iran, Islamic Republic of	117362
Chile	66026
South Africa	35041
China	30201
Uzbekistan	28288
Greece	**23349**
Argentina	16316
India	15679
Source: International Trade Center	

United Kingdom is the top importer of dried grapes. Greece is not among the ten importer countries of dried grapes (Table 18.)

Table 18 The top 10 importing country of dried grapes (tn) for 2014. Source: ITC (2015)

2014	Dried Grapes
Imported Countries (Top 10)	Quantity (tons)
United Kingdom	112687
Germany	75691
Netherlands	60014
Russian Federation	30276
Japan	29594
Canada	27742
Australia	26100
France	24319
Brazil	23723
Belgium	23698
Source: International Trade Center	

Chile exports the greatest quantity of table grapes with Italy second (Table 19.)

Table 19 The top 10 exporting country of table grapes (tn) for 2014. Source: ITC (2015)

2014	Table Grapes
Exported Countries (Top 10)	Quantity (tons)
Chile	731894
Italy	447467
United States of America	444737
South Africa	298424
Netherlands	276483
Peru	266203
Turkey	257857
Hong Kong, China	152647
Mexico	152541
Spain	145311

USA is the first country which imports a great quantity of table grapes and Netherlands is the second one (Table 20)

Table 20 The top 10 importing country of table grapes (tn) for 2014. Source: ITC (2015)

2014	Table Grapes
Imported Countries (Top 10)	Quantity (tons)
United States of America	529105
Netherlands	335630
Russian Federation	328279
Germany	308299
United Kingdom	257900
China	211019
Hong Kong, China	195548
Canada	173438
France	140839
Poland	104449
Source: International Trade Center	

The Greek the table and wine grape market, considered here as the exports and imports of table grapes, currants, sultanina, dried grapes and wine grapes for the years 2005-2014.

In domain table grape trade, we observed a fluctuation is evident from 2005 to 2014. A "cyclic" effect appears to be present with a frequency of 3 years (Fig.27).

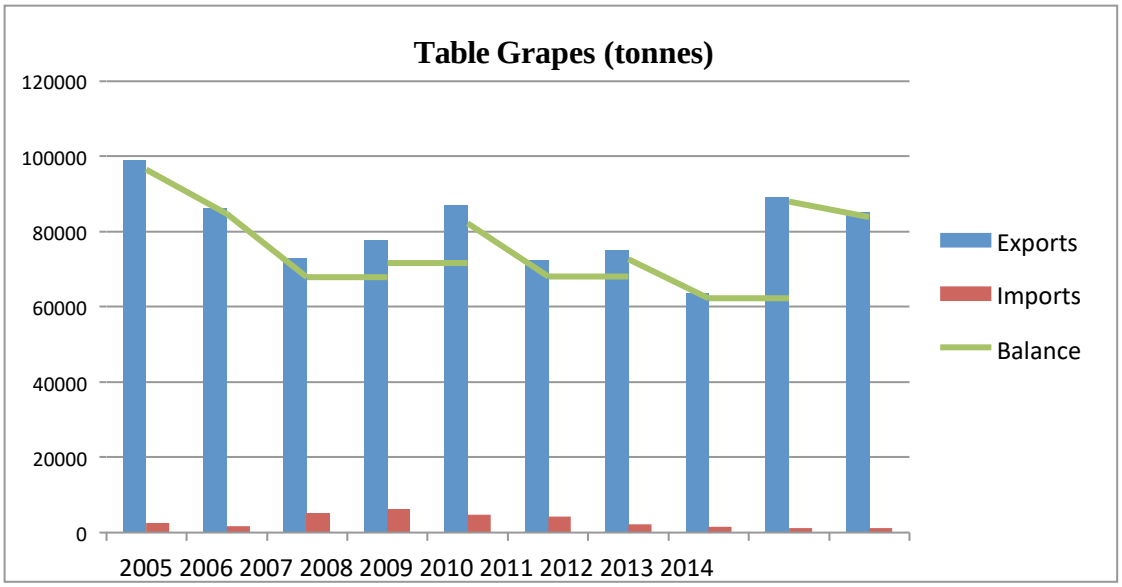


Figure 27 Domain table grape trade. Source: ITC (2015)

In domain currants trade, we observed a fluctuation is evident from 2005 to 2014. A similar "cyclic" effect appears to be present with a frequency of 4 years. Imports do not show in the graph because the numbers are very small (Fig.28).

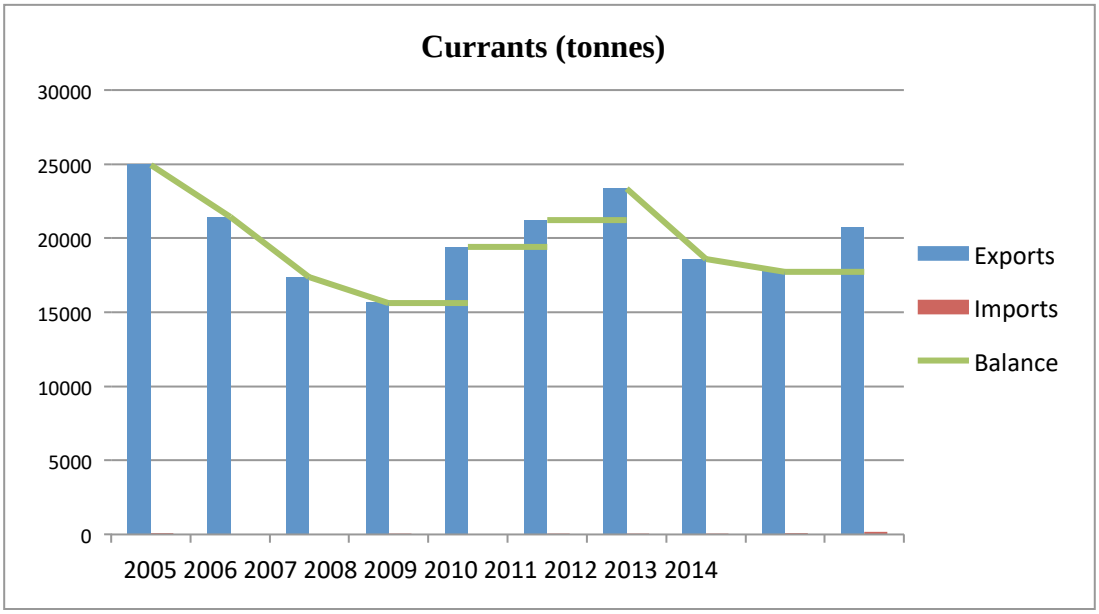


Figure 28 Domain currants trade. Source: ITC (2015)

Additionally, in domain Sultanina trade, we observed a remarkable decrease from 2006 to 2007 and great decline from 2011 and then. The problem for the first fall (between 2006-2007) was the reduction of exports to Italy (reduced from 1023 to 79

tn), Australia (reduced from 1166 to 97 tn), Poland (reduced from 1654 to 309) tn), Czech Republic, United Kingdom, Netherlands, Hungary, Serbia. Finally, the reason why there was such a great fall the year 2013, was the reduction of the exports to Germany (reduced from 7366 to 1368 tn), Sweden (reduced from 319 to 0 tn), Romania (reduced from 527 to 12 tn), United Kingdom (reduced from 400 to 3 tn) Netherlands, Denmark, Spain and Austria (Fig.29).

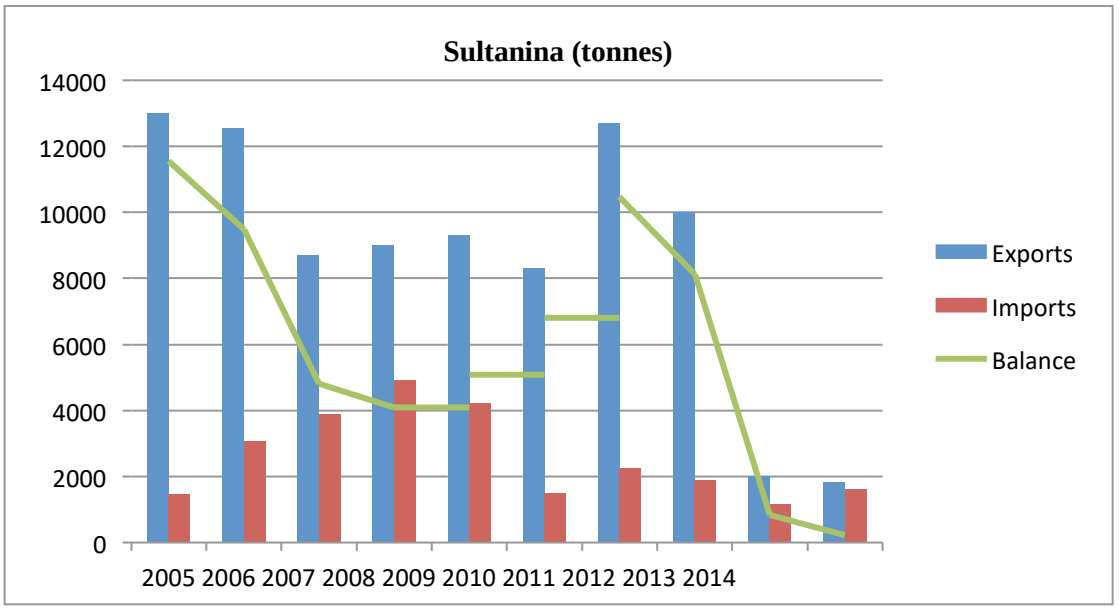


Figure 29 Domain sultanina trade. Source: ITC (2015)

In domain dried grapes trade, from 2005 to 2007 there is also a significant cycle of increases and decreases. This result is directly related with the fluctuation of Sultanina production (Fig.30).

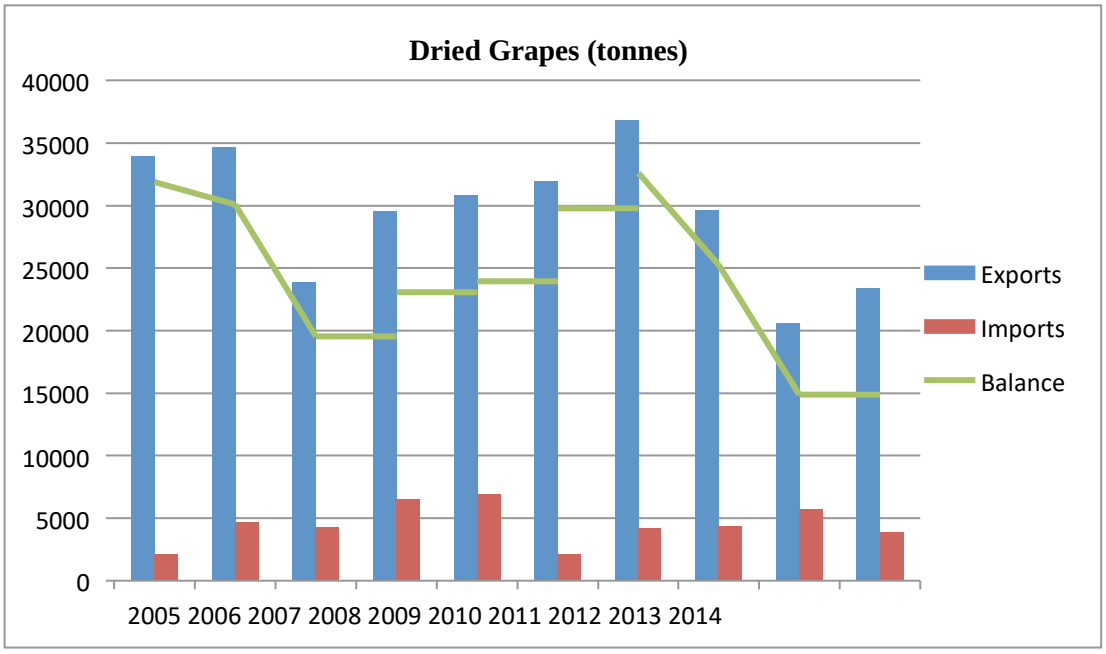


Figure 30 Domain dried grape trade. Source: ITC (2015)

Concerting with domain wine grapes trade, there is also a fluctuation like the production of table grapes (Fig 31).

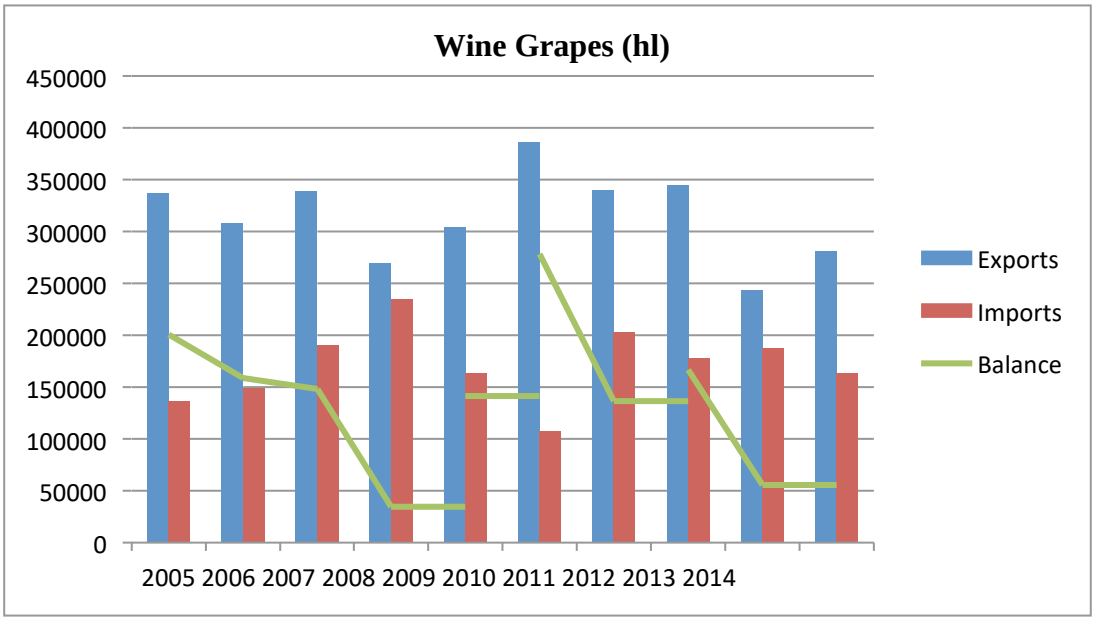


Figure 31 Domain wine grapes trade. Source: ITC (2015)

According to Hellenic statistical Authority and the statistical analysis performed by the Greek Central Cooperative Union of Wine Products, the average value (€) / L of wine imports, have been decreased (Table 21) and the average value (€) / L of the wine exports, have been Increased (Table 22).

Table 21 Value of imported wine from countries EU (2014). Source : KEOSOE 2015

Imported Wine (2014)			
Countries E.U.	Value (€)	Total (L)	Average Value (€) / L
ITALY	10954403	9158331	1,2
SPAIN	2247701	3722611	0,6
GERMANY	4108672	1252193	3,28
FRANCE	9698862	1029986	9,42
BULGARIA	268659	463077	0,58
BELGIUM	543473	195022	2,79
NETHERLANDS	924653	93215	9,92
UNITED KINGDOM	298698	58076	5,14
PORTUGAL	195853	49987	3,92
SWEDEN	141937	28357	5,01

HUNGARY	20058	22248	0,9
CYPRUS	52441	95 00	5,52
AUSTRIA	50496	8462	5,97
ROMANIA	16065	7274	2,21
DENMARK	14850	7200	2,06
LATVIA	4200	450	9,33
SLOVENIA	5167	248	20,83
Total	29546188	16106237	1,83

There is a great variation in the prices that Greece imports wine. Imported wine costs ranges from 20,83€ / L from Slovenia to 0,58 € / L from Bulgaria (Table 21).

Table 22 Value of imported wine from ouside Europe countries (2014). Source : KEOSOE 2015

Imported Wine (2014)			
Outside Europe	Value (€)	Total (L)	Average Value (€) / L
CHILE	221166	63436	3,49
ARGENTINA	157291	52947	2,97
MOLDOVA	50584	27720	1,82
REBUBLIC OF SOUTH AFRICA	91587	21882	4,19
UKRAINE	35787	16565	2,16
new Zealand	67993	9695	7,01
ISRAEL	9423	5000	1,88
CANADA	23878	5000	4,78
USA	16140	3821	4,22
JAPAN	14040	3888	3,61
SWITZERLAND	120412	2256	53,37
AUSTRALIA	20551	2129	9,65
TURKEY	3789	856	4,43
CHINA	11278	648	17,4
BRAZIL	1487	67	22,19
Total	845406	215910	3,92

From outside Europe imported wine ranges from 22,19€ / L from Brazil to 1,82 € / L from Moldova (Table 22).

Table 23 Value of exported wine from countries EU (2014). Source : KEOSOE 2015

Export Wine (2014)			
Countries E.U.	Value (€)	Total (L)	Average Value (€) / L
GERMANY	26363919	13912431	1,89
FRANCE	5466760	3702183	1,48
CYPRUS	3366082	1140969	2,95
BELGIUM	2464470	994789	2,48
UNITED KINGDOM	2273953	904622	2,51
NETHERLANDS	1752246	795194	2,2
POLAND	725300	583232	1,24
AUSTRIA	1105559	508823	2,17
ITALY	431319	428024	1,01
CZECH REPUBLIC	288350	168985	1,71
SWEDEN	412635	154050	2,68
DENMARK	224666	99421	2,26
BULGARIA	219304	87124	2,52
FINLAND	201444	66340	3,04
HUNGARY	150253	69062	2,18
ROMANIA	157047	56920	2,76
SPAIN	124927	46510	2,69
LITHUANIA	65044	37144	1,75
SLOVAKIA	55127	24390	2,26
ESTONIA	17223	5183	3,32
IRELAND	30662	4531	6,77
LATVIA	8740	3577	2,44
LUXEMBOURG	22213	3350	6,63
SLOVENIA	5756	2945	1,95
MALTA	6317	2377	2,66
PORTUGAL	4452	1836	2,42
CROATIAN	3108	687	4,52
Total	45946876	23804699	1,93

Greece exports wine to Italy with low price (1,01 € / L) and in Ireland with high price (6,77€ / L) (Table 23).

Table 24 Value of exported wine from ouside Europe countries (2014). Source : KEOSOE 2015

Export Wine (2014)			
Outside Europe	Value (€)	Total (L)	Average Value (€) / L
USA	8244876	1912506	4,31
CANADA	3658728	981007	3,73
CHINA	1147872	275604	4,16
AUSTRALIA	847922	263078	3,22
RUSSIA	413076	256790	1,61
SWITZERLAND	701650	160755	4,36
MEXICO	92585	74649	1,24
HONG KONG	266694	60675	4,4
JAPAN	191361	47104	4,06
BELARUS	95379	44246	2,16
SERBIA	104392	43318	2,41
ALBANIA	75723	41904	1,81
NORWAY	163213	28102	5,81
BRAZIL	94792	25484	3,72
OTHER COUNTRIES	122349	21857	5,6
UKRAINE	49225	19981	2,46
other countries	69024	16786	4,11
South Korea	134835	15357	8,78
Singapore	78816	11000	7,17
UNITED ARABIC EMIRATES	31387	8539	3,68
PANAMA	35527	7224	4,92
COSTA RICA	16010	6789	2,36
NIGERIA	11554	5232	2,21
ZAMBIA	9499	3780	2,51
OTHER COUNTRIES	7427	814	9,12
NEW ZEALAND	7966	1915	4,16
INDIA	4100	1531	2,68

TAIWAN	6145	1084	5,67
TURKEY	5850	1080	5,42
ISRAEL	6064	810	7,49
FYROM	5981	752	7,95
BAHAMAS	1708	538	3,17
REBUBLIC OF SOUTH AFRICA	2795	367	7,62
MALAYSIA	2686	318	8,45
JORDAN	2005	198	10,13
KOSOVO	1016	45	22,58
EGYPT	144	12	12
Total	16710376	4341231	3,85
Source: Central Cooperative Union Wine Products			

Greece exports wine to Kosovo in high price (22,58 € / L) and to Mexico in low price (1,24 € / L) (Table 24).

In addition, according to Central Fruit and Vegetables Market of Thessaloniki, in the imports, the prices (€) / kg of fresh grapes for the quality A' have been increased (Table 25).and prices from domestic production for domestic consumption, have been decreased (Table 26).

Table 25 Prices for Domestic Consumption of table grapes. Source : CMT 2015

	Prices for Domestic Consumption (Sultanina)			Prices for Domestic Consumption (Grapes Other Varieties)		
Year	Extra (Quality) (€)	A' (Quality) (€)	B'(Quality) (€)	Extra (Quality) (€)	A' (Quality) (€)	B'(Quality) (€)
2005	2,75	1,70	1,20	-	0,90	0,55
2006	-	1,85	1,30	-	0,70	0,53
2007	-	3,25	2,25	1,80	1,30	0,88
2008	2,00	1,60-2,60	1-1,60	-	0,60-2,20	0,50-1,00
2009	2,30	1,00-1,30	0,9-1,20	-	0,70-1,50	0,50-0,90
2010	2,00-2,30	1,20-2,40	1,20-1,60	-	0,80-1,40	0,50-0,80
2011	-	1,20-2,50	1,50-1,80	1,40-1,50	0,90-1,40	0,80-0,90
2012	-	1,00-1,90	0,70-2,50	-	0,50-1,20	0,30-0,90
2013	2,00-2,10	0,90-1,80	0,50-1,20	1,50	0,80-1,30	0,50-0,90
2014	1,60-2,00	0,90-1,70	0,60-1,00		0,80-1,70	0,50-1,00
2015	2,00-2,20	1,10-2,00	0,80-1,50	-	0,90-1,30	0,60-0,90

Table 26 Prices of Imports for Domestic Consumption of table grapes. Source : CMT 2015

	Prices of Imports (Grapes of all Varieties) for Domestic Consumption		
Year	Extra (Quality) (€)	A′ (Quality) (€)	B′(Quality) (€)
2005	-	2,00	2,30
2006	-	1,65	-
2007	-	2,15	1,60
2008	4,00	2,00-4,50	1,40-3,50
2009	3,00-3,50	1,70-3,60	1,2-2,80
2010	-	2,50-3,50	-
2011	-	1,60-3,30	-
2012	-	2,20-3,00	-
2013	-	2,50-3,80	-
2014	-		
2015			

Finally, according to Ministry of Rural Development and Food, the average value (€) / kg for the exports of currants has increased (Table 27 & 28).

Table 27 The average value [(€)/kg] for the exports of currants. Source: MINAGRIC.

Exports of currants			
Year	Value (kg)	Total Value (€)	Average Value (€)
2008	15670416	24529158	1,56
2009	19410778	34419990	1,73
2010	21231225	36498295	1,71
2011	23367791	45092271	1,9
2012	18574567	41922883	2,25
Source : Ministry of Rural Development and Food			

Table 28 The average value [(€)/kg] for the exports of sultanina. Source: MINAGRIC.

Exports of Sultanina			
Year	Value (kg)	Total Value (€)	Average Value (€)
2008	9027638	13273426	1,47
2009	9313885	14278000	1,5
2010	8312682	13777251	1,65
2011	12726105	21019603	1,65
2012	10014264	15520070	1,54
Source : Ministry of Rural Development and Food			

4.1.5 Potential substitution of imported the imported grapes

According to the data from the central fruit and vegetables market of Thessaloniki imports grapes in Greece marked the period from January to early July. From then, begins the domestic grape production, the demand is fully covered by domestic production and imports are eliminated. The only substitution of imports by domestic varieties could be done only the first ten days of July from some early Greek as Attica seedless, Perlette seedless, Superior seedless and perhaps Victoria.

4.1.6 Potential export growth

As the market is very competitive, to survive and excel the Greek products actions as the followings will strengthen their place in the preferences of foreign markets.
Table grapes and wine grapes are usually more attractive when they derived from integrated farming or organic farming. These should be proved by certificates which will upgrade the product, give added value and make easier the introduction into foreign markets. Such certificates are the protected designation of origin wines (P.D.O.) and the protected geographical indication of wines (P.G.I.).
The variety of traditional indigenous grapes in no way should be left unexploited. An increase of these varieties for the purpose of export, will introduce a diversified product in foreign markets, a new flavor acquaintance and an absolute advantage will be in the hands of the Greek market.

Packaging in grapes plays an important role especially when we are talking about exporting product. It should be appealing, safe for the product and the consumer and for transportation. They should implement the safety systems such as IFS, BRC, Global G.A.P. ensuring the customers for clean, safe and healthy products of high quality. These certificates will make it easier to create agreements - contracts with possible foreign markets.

4.2 The Greek Experience until now

4.2.1 Case studies from successful and unsuccessful farming businesses.

Producers of wine grapes

Alexiou Sotiris

Mr. Alexiou Sotiris is professional farmers in the region of Kastoria and the cultivation of the vine has learned it from his father. It is notable that maintained until today the vine which had been planted by father in 1945. From 1.8 ha that he has 1.3 ha are wine grapes and the remaining 0,5 ha are table grapes. Some of the wine varieties that he produces are local to its own names. He has learned to cultivate the vineyard empirically, but for the problems arising he is seeking to advise the agronomist. 70% of the production from the wine grape sells it to specific customers, private individuals, in order to make their own wine or tsipouro. It is a good and traditional crop for the youth, however in the area he believes that takes second place and that's because he claims that if one cultivates apples will have a fivefold income than grapes.

Asterios Pazaris

Mr. Asterios Pazaris is a producer of wine grape varieties as he continues the family tradition that he inherited from his father and he desires to bequeath the vineyard to his two sons. He is a professional farmer and he also produces kiwis, corn, sunflower and olives. The area in which it is planted the vineyard is protected designations of origin and the entire production is purchased by Tsantalis. He is president of the Association of producers of wine grapes in the region of Rapsani. The last years he has improved his cultivation methods due to that one of his sons studied technologist agronomist and helps him in all crops. The innovation that made him stand out from

other producers in the region is that it operates a system fertigation. He has a better gain in price than other areas of protected designation of origin. It is a very good prospect for young people of the area to employable.

Athanasios Chaloulis

Mr. Chaloulis is a producer of wine and table grape varieties, continuing the family tradition that he inherited from his father. He focuses only on the production, meaning that he does not process further or bottle his product. Furthermore he is the president of the association of ASEPOP TYRNAVOU. For best result, he recommended combining the production of wine and table grapes. He suppose to the new producers, to take into consideration the advice from the older producers and of courses the opinion of qualified agriculturists.

Nikolaos Goulis

Mr. Nikolaos Goulis is an agronomist and has agricultural supplies store in St. Pavlos - Chalkidiki. He is a professional farmer for 35 years. He first dealt with the table grape in 1998 when he installed the vineyard. A vineyard percentage belongs to his wife, which is new farmer and deals also. The art of viticulture learned it from his father, later on developed it with his studies and today applies that knowledge together with his wife. He applies conventional farming. It is a dynamic culture in which many young farmers can be involved in the area.

Athanasios Katsaridis

Mr. A. Katsaridis is agronomist and is working in Tsantalis. Having the knowledge from his studies and experience from his work in TSANTALI decided and planted 10 ha of wine grapes. His decision was reinforced by the sense of disappointment he had from other crop yields which had in the past. He constantly submits applications for new planting rights, and whenever they give him, he add further vineyards. All the fields are irrigated. The choice of varieties produced is based on the demand of the wineries. All his cultivation is organic. He considers that the production of wine grapes is great opportunity in the region for anyone who wants to deal with agriculture.

Petros Poulakis

Mr. Poulakis worked on various jobs for many years, but his love for the vine made him keep it alongside other occupations. The art of viticulture learned it from his father, who established the vineyard in 1963, and continues to enrich his knowledge from the interaction with other producers. Spata, where the vineyard is established, is one of the larger areas in extent of wine grapes. The choice of the variety Savvatiano was one way due to the high efficiency it has on area. It has been noticed that many young kids, after the financial crisis, follow the occupation of the producer and especially those whose parents engaged in viticulture or had land in the area.

Vladimiros Moisidis

Mr. V. Moisidis is in agricultural production through the whole of his life. He was cultivating wheat initially, but he decided to shift in viticulture (wine grapes) because viticulture thrives in the particular region of Nea Mesimvria and offers a good income for the producer. Mr. Moisidis cultivate, according to organic farming. Production is exclusively purchased by Tsantalis and Nea Mesimvria Wineries. Vineyard is a dynamic crop with great potential for young people who seek to work in agriculture.

Evangelos Chatzivaritis (Domain Chatzivariti)

The first vineyard was planted in 1994 (5 ha) at the area of Bintabla in Goumenissa. The climate of Goumenissa continental, with many rainfalls during the winter and warm summers. Today the vineyard of Domain Chatzivariti consists of 12 ha and in 2007 a winery was built in the vineyard of Filyria. Emphasizing in the quality of the grapes, soil fertility and environmental protection organic farming was chosen. The estate focuses on the Greek varieties of Xinomavro, Negoska, Roditis and Assyrtico. Popular varieties such as Sauvignon Blanc, Merlot, Chardonnay and Cabernet Sauvignon are also cultivated in smaller surfaces. There is a lot of space for new producers to enter in viticulture especially in the area of Goumenissa.

Eleftherios Glinavos (Domain Glinavos)

Mr. E. Glinavos is the owner of the winery, which located in the region Zitsa of Ioannina. The first vineyard in the area was created in 1978 with a very small winery. The expansion of the vineyard was made in 1993 and since then every year they add small areas. Modern winery was created in 2003 and continues to improve each year. It has a total of 18 ha. It also has a distillery. It has a tradition to sell wines from local varieties and has created a competitive advantage in selling sparkling and semi- sparkling wines. If someone from the youth does not deal with livestock is very good chance his involvement with viticulture, in this area.

Dimitris Kanellakopoulos [Domain Mercouri)

Mr. Dimitris Kanellakopoulos belongs to the 4th generation of the Kanellakopoulos family that continues the tradition of viticulture. His great-grandfather back in 1870 planted the Italian variety "refosco". His grandfather in 1930 creates the initial winery, creates initial winery, which after 1960 was shrinking to grow again after 1985. The most profitable crop in the their area is the olive and olive oil and then follow viticulture.

Sotirios Stergiou (Domain Stergiou]

Mr. Stergiou after worked in various professions he decided to become a wine grower. In 1992 installed his own vineyard over an area of 65 acres in Metamorfosi of Kastoria at an altitude of 680 meters. The winery was established in 2000. Mr. Stergiou was the one who after persistent efforts succeeded recognized as PGI the wines of the region, as it was the first winery in Kastoria, along with another that was created in recent years. It is a profitable and promising crop, although the region is dominated by crops of apples and beans, which bring higher profits.

Vasilis Tassou (Winery Kikones)

The ancient tribe named Kikones lived in the region of Thrace and as referred by the Homer, they were famous for the wine production in ancient Greece. Viticulture (and grape growing) was extinguished totally from the region of Thrace in modern Greece. Only a few years ago (in 2004), Vasilis Tassou with his sister Melina established the domain Kikones which is the only winery in Thrace. The philosophy of the winery is that quality wines are produced only by quality grape-fruits. Treated with special

cultural techniques such as vertical shoot positioning. Vineyard is a dynamic crop with great potential for young people who seek to work in agriculture.

Evangelos Soufleros (Domain Petit Oineonas)

Mr. Evangelos Soufleros is an oenology professor in Agriculture faculty of the Aristotle University of Thessaloniki and is distinguished for his love and his professional career in viticulture and enology. When he met and married Christine-Marie Jardel, which because of French origin and the engagement of her family with viticulture, wanted to continue the family tradition. So in 2002 initially installed a small vineyard and later in 2008 created the winery "Domaine petit oineonas". The area is ideal for new farmers to deal with viticulture due to the particular soil-climatic and topographic characteristics of the area.

Euripides Katsaros (Domain Katsaros)

Domain Katsaros is a small family enterprise, located in the traditional vine country of Krania, Mount Olympos, in Northern Greece. The first vineyard was established in 1981 by the father Dr. Dimitrios Katsaros and his wife. Dr. Dimitrios Katsaros is a doctor in profession but his devotion for wine led him to the decision to establish the vineyard (planted varieties were cabernet sauvignon and merlo) and later on (in 1987) the winery. Wine was produced for the first time in 1987. His son Euripides Katsaros took over the lead of the vineyard and the winery since 2007. The vineyard today covers an area of 9 hectares. Most of the cultivation and growing practices are made by hand. The practice of green harvesting is used in order to control the yield of grapes and the quality of wines. Because of some changes in the consumer habits the white wines are consumed in larger quantities. So, perhaps young people who aim to enter in the sector should think to start with planting white wine grape varieties.

Vangelis Gerovassileiou

Mr. Vangelis Gerovassileiou descends from an agricultural family. He graduated from the School of Agriculture at the Aristole University of Thessaloniki and was specialized in Oenology, Viticulture, Wine Degustation and Technology of Oenological Equipment at the University of Bordeaux. From 1976 to the beginning of 1999 he worked as an oenologist at Domaine Porto Carras, where some of the most renowned wines of Greece were produced. It was there that he first vinified, revived

and rescued from oblivion the long forgotten Greek variety of Malagousia. In 1981, Vangelis Gerovasileiou began the renovation of the family vineyard (about 2.5 hectares) in Epanomi Thessalonikis and established the winery Domain Gerovasileiou, which is now stretching over 56 hectares. New farmers should be organized in groups. The first and the most important step, for a young person who seeks to get involved with viticulture, is to get trained on how to manage the vineyard.

Producers of table grapes

Athanasios Chaloulis

Mr Chaloulis is a producer of wine and table grape varieties. He is the president of the association of ASEPOP TYRNAVOU. He has learned to cultivate the vineyard from his father and although he has not graduated from a technical school, he has his personal experience of so many years cultivated the vine. It is a dynamic cultivation with many development potentials and but he would recommended combining the production of wine and table grapes.

Nikolaos Goulis

Mr. Nikolaos Goulis is an agronomist and has agricultural supplies store in St. Pavlos - Chalkidiki. He is a professional farmer for 35 years. He first dealt with the table grape in 1985 when he installed the vineyard. A vineyard percentage belongs to his wife, which is new farmer and deals also. The art of viticulture learned it from his father, later on developed it with his studies and today applies that knowledge together with his wife. It is a dynamic culture in which many are involved in the area.

Athanasios Katsaridis

Mr. A. Katsaridis is a technologist agronomist and is working in Tsantalis. Having the knowledge from his studies and experience from his work in TSANTALI decided and planted 15 acres in 2013 and 40 acres in 2015 of table grapes of the black magic N variety in the area of Maronia. From 2000 he is a professional farmer. Therefore exist a gap market and is very promising the occupation with the cultivation of table grapes in the area.

Kiriakos Grilakis

He is a professional farmer and produces only table grapes and specifically the sultanina variety. After finishing school and his military service all he wanted to do was to become a winegrower. The art of viticulture learned it from his father and later with his brother they continued the family tradition. He did not stop though there, as he followed the advice of agronomists, participated in seminars and exchanges views with other producers in the region in order to improve his skills. He has noticed that after the financial crisis the youth of his area turned to the agricultural sector and more and more professionally engaged in agriculture and particularly in the cultivation of table grapes.

Zisis Manossis (zeuskiwi)

The company ZEUS is acclaimed in the export of kiwifruit. Doing research found a lack on the market of England, for a certain period of time, a variety of table grape which was imported from America. Having the advantage of reputation and experience of the company, the soil and weather conditions of the area and creating a perfect business plan, managed to conquer and fill the market gap. Mr. Manossis is one of the owners. Cooperating farmers are required to follow certain rules, just consult the Zeus and install protective net. Young people working in business sectors affected by the economic crisis through cooperation with Zeus managed to find their feet and have a good supplemental income.

George Katsagiotis

Mr. Katsagiotis is a producer since 1978. At 1981 started processing and packaging four table grape varieties. At 18 he left abroad to study but because of family problem returned and took over the vineyards. His production (100%) is exportable by his company and he has all the necessary certificates, CIFS / BRC / GLOBAL GAP. He considers that it is a very dynamic growing this variety, because it has many nutrients and has an economic surplus value.

Athanasios Sotiropoulos

As soon as he finished the basic education and military service, he took over the vines from his father. In 1982 made a replanting and started the production of black currants. His love for the vine and the fact that he likes to stay in the province were determining factors for his occupation with agriculture. He is one of the first organic

farmers in the region, certified since 1983 by a Dutch company, since he there was no certification in Greece. Difficulty in finding clergy in the area for install cultivation, but it's a very hopeful production.

Vasilis Tassou

Mr V. Tassou, has studied agriculture and holds a master degree in master. In addition his father is also an agronomist, so he has a strong background in crop cultivation practices and crop management systems. Apart of his occupation in cultivating the vineyards for wine production, Mr. Vasilis cultivates table-grapes as well. In table wines (in contrast with the wine grapes) fertigation is used in order to increase the production of table grapes. Mr. Vasilis believes that table grape cultivation has great potential for the area of Maronia. The climatic and soil condition in the area are favorable for the cultivation and provided that a young farmer is willing to work, success is guaranteed

4.2.2 Major Problems faced by growers

The most common problems faced by growers of wine and table grapes, are: First of all the is no stable production and often fluctuates due to climate and extreme weather events, such as frost, microclimate of the region and the problems with the coloring and the sugars of the grapes.

All growers complained that there is no support from the Greek governments. These problems started from the beginning, when they established the vineyard, as they could not find easily certified propagation material from Greek varieties and continues later, when the government did not regulate wholesalers, to protected the producers from ones that were not complying with legislation and were unreliable,. Another think that many growers faced with the Greek government, is the difficulty to process exports because of the paperwork. The low prices in wine and table grape is another think that many growers believe that the government should help them to increase the prices or set a minimum price. Limited programs existed from the Greek governments from the financing side for wine promotion events.

The major problems with the Greek farmers are that they do not know : a) how to use new technology, b) properly use of agrochemicals, c) cultivate with new techniques and d) do not have skills in marketing and e-commerce. These problems existed, due to most of them being middle-aged people and they have learned to cultivate traditionally and do not want to change their cultivations habits.

In addition, one more problem for a new grower or the one who wishes to make the vineyard quite contemporary or replanting, is the large initial cost of establishment in combination with the limited cash flow due to the capital controls and economic crisis in Greece.

In some areas, there is no good timing between consumers demand and offering table varieties of the local producers, due to the changing of consumer habits. For example before many years the consumers used to eat red grapes and this time they like to eat white seedless table grapes (Soultanina).

One more common problem for the table and wine grapes producers, is the lack of skilled/trained part-time workers (pruning etc), the time that the growers want them.

Finally, the biggest difference between table and wine grape production is the limited planting rights for wine grapes, which complicates and increased the problems for all wine grape producers.

4.2.3 Critical Success Factors

Prior experience in agriculture. There are two types of new farmers; those who continue their parents work relying on their land and machines and those who have a previous experience, in cultivating other agricultural products and they decide to start winemaking.

Scientific support – business plan. Farmers who decide to deal with winemaking seriously, should ask help from someone who is specialist on table and wine grapes or from an agriculturist in order to have good results. In addition, before a producer started to establish the vineyard, he should go to someone specialist to make him a business plan, concerning the product he wants to cultivate.

Market research and identification of potential buyers. New farmers should make market research, especially on table grapes because is very competitive in the world market. This research should be taken place in order for wholesale to be avoided and new farmers find potential buyers in abroad.

Available capital to invest. The cultivation of vines is very expensive due to the high initial cost of the vineyard and the special agricultural machinery that he has to buy. Consequently it is necessary for farmers to fine ways in order to have a very good capital to invest. The ways are: financing from banks or the financial support from the government or from programs of E.U..

"Know-how" in cultivation and processing techniques. Producers and especially new ones are based on their parents knowledge (traditional cultivation) and they try or should try to upgrade it with studying and taking part in seminars.

Intensive research on Greek wine grape varieties. adaptability and requirements. Farmers should learn how to cultivate Greek wine grape varieties in order to make them more competitive in the world market. This intensive research could strengthen

Greek wine against to the cheaper ones in price and taste which are sold worldwide creating new tastes and new habits for the consumers.

Availability of skilled and trained personnel. Producers, who want to deal with this type of cultivation seriously, should ask help from skilled people (such as agronomist specialist in viticulture and enology).

Planting Rights present a difficulty for new farmers to establish new vineyards. Planting rights are a limiting factor because only few hectares are given to new producers in order to start cultivation. If there is a chance for new farmers to have more area, then their products will be more competitive.

Main obstacle for new farmers is the high initial cost. The program of new farmers (under the age of 40) gives the chance to new ones to have a capital to invest in area and machines.

Lack of expertise and knowledge in marketing and e-commerce. This can be improved by seminars that can be taken by farmers in order to learn how the market and e-commerce work and help them to find new customers to sell their products.

Difficulties in finding skilled/trained part-time workers for pruning, thinning etc. This can be addressed by online portals, where there the names of skilled/trained workers who can help farmers are listed.

New recent taxes imposed on, wine could affect wine consumption. Up to now studies have shown that crisis that takes place in our country the past 5 years has not affected the wine consumption singificanltly. Although new recent taxes could force consumers to turn in bulk wine which is cheaper.

Only winemakers expressed interest for wine tourism. According to our study, producers who have wineries are interested in and could implement wine tourism. The majority of the others producers, expressed their interest to implement wine tourism, but they do not know how to do it.

Production of table grapes has high profitability prospects and would be very attractive to new growers. According to our key studies, older table grape producers recommend new ones to become involved with this kind of product. This recommendation appears in SWOT analysis with more details.

4.2.4 Identification of training needs of new farmers

All wine and table grape producers, expressed their opinion that all the new young farmers they have to make some steps, before the establishment of their own vineyard.

First of all, young people should be scientifically trained and skilled in agricultural techniques (cultural practices, farming systems etc). Training both in theory and practice is absolutely necessary for anyone (and especially for young people) who seeks to occupy in viticulture and oenology.

Furthermore, the new farmers should go to work in the vineyard with someone experienced producer or agronomist, in the same area, where they're going to establish their vineyard, so they will be able later to gain the real experience. It is very important to have an experience in their area, so that new farmer will be able to learn more about their regional varieties and the soil and climate conditions.

Training can also take place in institutes specializing in viticulture, where the new growers should participate in seminars in order to learn the latest developments in the cultivation techniques of the vine. Also, they have to learn about marketing so that they can promote on the market their products.

In addition, if a new farmer wanted to establish a winery, he could go to other countries, to try different vine harvest and farming techniques.

Finally, the new farmer, after training, should make his practice and learn near to an experienced producer how to manage the vineyard, then he could start professionally and establish a vineyard. In the beginning the new farmer, should have at his side an agricultural consultant who will inform and support them in every step.

5. Future Prospects

5.1 SWOT analysis

Although Greece has a long tradition in wine and table grapes, in recent years due to the economic crisis they created problems for the sector. Demand is decreasing and is appearing replacement trends with cheap imports and substitutes. The lack of funding and education and the need to modernize the sector remain key issues. Finally the investigation of consumption trend of healthy products (Currants) was a question yet to be answered. For all the above and more was created the need for research.

SWOT analysis for wine and table grapes

Strengths

Favorable Climate and soil conditions: The soil types that exist in Greece and their specific physicochemical properties combined with the variation of temperature, precipitation and sunshine have a positive impact on the quality of the produced wine. Long tradition and experience on vine cultivation: Greece is in the 13th in the world areas under vines. The cultivation of vine has been an important part of Greek culture for over 4000 years.

Established organic and integrated farm management systems: The implementation of such quality system give added value to the final product.

Possession of specialized cultivation equipments: As viticulture in Greece passes from generation to generation and it consists a part of the family tradition almost always there is the availability of such equipment.

Weaknesses

Small size and large number of fields per agricultural holdings: Restricting distribution of planting rights prevents the transition and creation of large-scale vineyards. In 2012 about the agricultural holdings of small or medium average size (5.8 hectares) were estimated at 717.000 (Tsiforos, 2015).

Lack of skills in marketing and trading: Very few producers consider important market research and marketing. Even those who so desire, lack the skills and knowledge to perform.

Aged rural population: According to statistics, the majority of farmers are aged between 40-64 years old (66,7%).

High initial cost of land, vineyard establishment and required equipment: It is a major deterrent to the creation of large-scale, modernized vineyards, equipped with the necessary agricultural machinery, especially at times of economic crisis we are experiencing.

Long period to reach full production: In nature, the vine takes 3-4 years to deliver maximum production.

Insufficient resources for viticulture education: Producers rely on their own empirical knowledge and their parents knowledge, rather than new cultivation techniques.

Limited cash flow: Capital controls imposed by the Greek Government such as transaction taxes, other limits, or outright prohibitions that regulate flows from capital markets into and out of the country's capital account restrict the availability of cash.

Opportunities

Interest by potential new farmers: Young people who want to get involved with the cultivation of wine and table grapes are: on the one hand farmers who produce other agricultural products and are disappointed by the yields or sales prices of the products and on the other hand the children of the vine grape producers.

New emerging markets for wine and table grapes (Russia, China): To achieve penetration into new emerging markets, the products need to have the necessary certificates in order to be accepted, in the phase of cultivation (integrated and organic agriculture) and then at the stages of packaging and standardization.

Decreased Euro exchange rate favors Greek exports to other non-European countries: Due to the fall in the price of wine, the Greek wines and table grapes, have become more competitive on other continents.

Increased popularity of Mediterranean cuisine: The Mediterranean diet combined with the nutritional value of wine (polyphenols) has a positive effect against cardiovascular disease and combat cholesterol. Table grapes are an integral part of the Mediterranean diet.

Threats

Climate change: Climate change such as extreme temperatures and extreme weather conditions adversely affect the biological cycle of the plant and therefore the yield and quality of the final product.

Limited access to financing: it is fact that for someone to enter the sector needs considerable amount money because of the high initial installation costs. Therefore due to the economic crisis in Greece funding through banks has become very difficult. Registration of Greek vine varieties by other nations and importation of certified propagation material: to replace the imported, the state must create an organization to start the Greek certification of propagation material for grapes.

SWOT analysis specialized for Wine grapes

Strengths

Established brand name of Greek wine grapes: many Greek wines have won awards and distinctions in many international competitions.

Weaknesses

Lack of certified propagating material of native wine varieties: As in Greece there is no national propagation material registry it is impossible to certify the native wine varieties. Although there are non desirable, the solutions are to import them from other countries or use those who have been produced in non approved nurseries. *Opportunities*

Increased tendency to appreciate native wine varieties: The range and quality of local varieties are very remarkable and should exploit, because the foreign varieties to a large extent they may be replaced.

Synergies with agro tourism: Agro-tourism is a specialized type of tourism and especially wine tourism, has a great impact in many peoples in the world. The interviews of wine producers indicate that only those who have wineries are involved in wine tourism, but great part of the others producers, expressed their interest to do it. Emerging on-line services for wine grapes: wineries not pursue retail sale through their website, because they conflict with the interests of wholesalers.

Threats

Restricted planting of new vineyards for wine grapes: The distribution of rights in hectares per producer should be increased, especially for young farmers, in order to allow the sector to develop further and extend.

Reduction of domestic and European wine consumption: Because of the economic impact, consumption of wine has stabilized, with a downward trend however, and possibility for further decrease due to VAT increases.

Increased taxes on wine: It is a negative fact which directly affects the demand for the consumption of wine and draws consumers to cheaper beverages such as beer and bulk wine.

Imports of cheaper wines competitive products from non-European countries: We should highlight the Greek varieties in order to give the consumer an incentive to try and to prefer them instead of imported.

SWOT analysis specialized for Table grapes

Strengths

Proven health benefits of currants: It is a product of high nutritional value due to the high content of valuable nutrients such as antioxidants / polyphenolic components and fiber, but also the role that appears to play in maintaining health and preventing chronic diseases.

High yields for table grapes: The particular soil and weather conditions in Greece favoring the high productivity and yield, in combination with the special cultivation techniques used by growers by region.

Strong export activity of table grapes: The table grape varieties, especially the variety sultanina has an extremely positive trades balance.

Established brand name of Greek table grapes: The high export rates combined with years of tradition and culture and the certificates they hold, have created a strong brand name.

Weaknesses

Low level of vertical integration for table grapes: Due to lack of knowledge and limitation of funding, the producers are unable to undertake the vertical integration of production, "from field to shelf".

Threats

Reduction in domestic consumption of table grapes due to the economic instability. The domestic consumption in Greece, from 2005 until 2011, seems to increased, but if the economic crisis continue, probably it will be decreased.

SWOT analysis with rating of each factor

The SWOT analysis was constructed as a matrix and was populated with a correlation analysis of each internal factor (strength or weakness) with the external factors (opportunities and threats). This was determined with the following method. When examining the correlation of a strength with an opportunity, if the strength enhanced the ability to take advantage of the opportunity, a (+) score was assigned, while if it had a negligible correlation with the opportunity a (0) score was assigned. In examining the correlation of a strength with a threat, if the strength protected against the threat, a (+) score was assigned, while if it had a negligible correlation with the threat a (0) score was assigned. Similarly, when examining the correlation of a weakness with an opportunity, if the weakness compromised the ability to take advantage of the opportunity, a (-) score was assigned, while if it had a negligible correlation with the opportunity a (0) score was assigned. In examining the correlation of a weakness with a threat, if the weakness made the sector more susceptible to the threat, a (-) score was assigned, while if it had a negligible correlation with the threat a (0) score was assigned.

After populating the cells of the matrix with the scores (0, - or +), the sum of each factor is obtained (horizontally for the internal factors and vertically for the external factors) by adding all (+)'s and subtracting all (–)'s. The total obtained horizontally gives an indication of the relative importance of each strength or weakness for a given sector.

The total obtained vertically for each opportunity, gave an indication on how well the sector was poised to take advantage of available opportunities, and for each threat, how susceptible was the sector to existing threats.

The analysis of the scores was used as a tool for deciding which of the internal factors (weaknesses) were good candidates for developing actions that would minimize these weaknesses. In addition, the effect of each action on increasing the score of the opportunities and reducing the threats was determined. Similarly, significant strengths were identified for utilization.

Wine Grapes

After populating the cells of the matrix with the scores (0, - or +), the sum of the total opportunities a (-) score was assigned and especially at the external factor "interest by potential new farmers". The same (-) score was assigned at the sum of the total weaknesses "lack of skills in marketing and trading" and at "limited cash flow".

From all the above, we conclude that in the sector of wine grapes is not ready to accept intervention (Table 29).

Table grapes

In the sector of table grapes the sum of the total opportunities with the highest score are: "interest by potential new farmers", "new emerging markets for table grapes" and "increased popularity of Mediterranean cuisine". All the above imply that according to the assessment these are the features of the sector, which would attract mostly to do it.

However, from the weaknesses the highest (-) score are "lack of skills in the marketing and trading", "limited cash flow" and insufficient recourses for viticulture education", which could be drawback and our effort should focus on them in order to find action which could eliminate them.

So our SWOT analysis indicates that this sector is ready to accept intervention. (Table 30).

Table 29 SWOT analysis for wine grapes.

	Total opportunities							Total threats								
	-2	0	0	-2	0	0	-2	-2	0	-1	-2	-4	3	-2		
S1-Favorable Climate and soil conditions	+	+	+	0	+	+	0	0	0	+	0	0	0	0	6	Total strength
S2-Long tradition and experience on vine cultivation	+	+	+	0	0	+	0	0	+	+	0	0	+	+	8	
S3-Established organic and integrated farm management systems	+	+	+	+	+	+	+	0	+	0	0	0	+	+	10	
S3-Possession of specialized cultivation equipments	+	+	0	0	0	0	0	0	0	0	0	0	+	0	3	
S4-Established brand name of Greek wine grapes	+	+	+	+	+	+	+	0	0	0	0	0	+	+	9	
W1-Small size and large number of fields per agricultural holdings	0	-	-	-	0	0	0	0	0	-	0	0	0	0	-4	Total weakness
W2-Lack of certified propagating material of native wine varieties	-	-	0	0	-	0	0	0	0	-	0	0	-	-	-6	
W3-Lack of skills in marketing and trading	-	-	-	-	-	-	-	0	-	0	-	0	0	-	-10	
W4-Aged rural population	0	-	-	-	0	-	-	0	0	0	0	0	0	0	-5	
W5-High initial cost of vineyard establishment and required equipment	-	0	0	0	0	0	0	-	0	0	0	-	0	-	-4	
W6-Long period to reach full production	-	0	0	0	0	0	0	-	0	0	0	-	0	0	-3	
W7-Insufficient resources for viticulture education	-	-	-	0	-	-	-	0	0	-	0	0	0	0	-7	
W8-High cost of land suitable for vineyard establishment	-	0	0	0	0	0	0	0	0	0	0	-	0	-	-3	
W9-Limited cash flow	-	0	0	-	0	-	-	0	-	0	-	-	0	-	-8	

O1	O2	O3	O4	O5	O6	O7	T1	T2	T3	T4	T5	T6	T7
Interest by potential new farmers	Increased tendency to appreciate native wine	New emerging markets for wine grapes (Russia, China)	Decreased Euro exchange rate favors Greek exports to other non-European	Increased popularity of Mediterranean cuisine	Synergies with agro tourism	Emerging on-line services for wine grapes	Restricted planting of new vineyards for wine grapes	Reduction of domestic and European wine consumption	Climate change	Increased taxes on wine	Limited access to financing	varieties by other nations and importation of certfied propagation	Imports of cheaper wines competitive products from non-European countries

Table 30 SWOT analysis for table grapes.

	Total opportunities									
	2	2	0	3	0	1	-2	4		
S1-Favorable Climate and soil conditions	+	+	0	+	0	+	0	0	4	Total strength
S2-Long tradition and experience on vine cultivation	+	+	0	0	0	+	0	+	4	
S3-Established organic and integrated farm management systems	+	+	+	+	0	0	0	+	5	
S4-Possession of specialized cultivation equipments	+	0	0	0	0	0	0	+	2	
S5-Proven health benefits of currants	+	+	+	+	+	0	0	0	5	
S6-High yields for table grapes	+	+	+	0	0	+	0	0	4	
S7-Strong export activity of table grapes	+	+	+	+	+	0	+	0	6	
S8-Established brand name of Greek table grapes	+	+	+	+	0	0	0	+	5	
W1-Small size and large number of fields per agricultural holdings	0	-	-	0	0	-	0	0	-3	Total weakness
W2-Lack of skills in marketing and trading	-	-	-	-	-	0	0	0	-5	
W3-Aged rural population	0	-	-	0	0	0	0	0	-2	
W4-Low level of vertical integration for table grapes	-	-	-	0	0	0	0	0	-3	
W5-High initial cost of land, vineyard establishment and required equipment	-	0	0	0	0	0	-	0	-2	
W6-Long period to reach full production	-	0	0	0	0	0	-	0	-2	
W7-Insufficient resources for viticulture education	-	-	0	-	0	-	0	0	-4	
W8-Limited cash flow	-	0	-	0	-	0	-	0	-4	
	Interest by potential new farmers	New emerging markets for table grapes (Russia, China)	Decreased Euro exchange rate favors reek exports to other	Increased popularity of Mediterranean cuisine	Reduction in domestic consumption of table grapes due to the economic	Climate change	Limited access to financing	vine varieties by other nations and importation of certified propagation material		
	O1	O2	O3	O4	T1	T2	T3	T4		

5.2 *Stakeholder Analysis*

A matrix of major stakeholders is presented in Table 31. The most significant stakeholders are: a) the consumers which are the moving power of the whole system whose demand the sector has to satisfy, b) the banks to give the capital to the farmers to establish a vineyard, c) the Wholesalers, which have from the great influence on the sector due to they set the prices,

c) farmers, labor, pesticides and fertilizers supplies, machinery and equipment supplies and propagation materials supplies, collaborate in order to realize primary production, d) the certification bodies are major stakeholder since most of the crops are organically cultivated,

e) Ministry of the governments, play important role are as they the legislative mechanisms that define the rules of the system (planting rights), while they supervise the implementation of the rules by all parts.

Other stakeholders with high influence especially for processed products are the processing units who, as it has already mentioned, could attempt to low price of grower in order to maximize their profit and some times that happens deliberately. In cases when the grower also processes the grapes on his own he has to comply with the health safety regulations.

The stakeholder's category equipment suppliers, packaging materials suppliers and consultants contribute to the processing of table grapes and wine, in order to have end products ready to be bought by consumers.

Finally, there are some other stakeholders (hotels, restaurants, Cellars, Environmental and Agricultural authorities etc) with no or some importance, which have some or no influence and are integral part of the sector of viticulture, table and wine grapes.

Table 31 Stakeholder analysis

		Importance of stakeholder			
		Unknown	Little / No importance	Some importance	Significant importance
Influence of Stakeholder	Significant influence	-	-	• Food Safety Authorities • Processing units • Retailers	• Banking • Ministries • Consumers • Wholesalers • farmers • Certification bodies • Labor, social security etc. • Pesticides & fertilizers suppliers • Machinery & equipments suppliers • Propagation materials suppliers
	Some influence	-	• Environmental Authorities	• Agricultural authorities • Cellars • Wine festivals	• Consultants • Equipment suppliers • Packaging materials suppliers
	Little / No influence	-	• Hotels • Restaurants • Tavern	• Supply providers • Equipment suppliers • Public services	

5.3 *Future Markets*

First of all, Greece exported all over the world table grapes (Fig.32) and wines. Greek table and wine producing companies declare that they want to successfully export their products to good expensive market in order to create the desired profits and add value to the sector. This should be done though under a well-designed long term strategy allowing them to mature both in products specifications and experience. There is a set of factors that should be taken

under account and appropriate decisions should be made so that the products will be successful in target markets.

Quality meaning is a complex one and although all people around the globe use it, it does not mean the same for all of them. However in globalized economy and common market there is an urgent needs for common language describing a commonly understood minimum set of qualifications.

In this sector, we have done 23 interviews, which include 8 wine grape producers who have Winery, 7 wine grape producers and 8 table grape producers. On one hand, the major of table producers gives the whole production to Wholesaler and does not know the country exported. The same happens with the major of wine producers, which they give their production to Wineries and does not know the country or the area exported. On the other hand, the other part of interviewers are: Wineries owners, members of cooperatives and we have information from the Wholesalers and we informed where the exposed the products and where are the future markets.

Depending to the study and the results that we have from the interviews indicate that the future markets are the Russia and China. Some of the companies (e.g. kiwi) and Wineries (e.g. Gerovassileiou), they have started processes to investigate what certificates are required to penetration in these markets. There are many problems to exported table grapes to China, due to the complicated certificates for the health safety regulations.

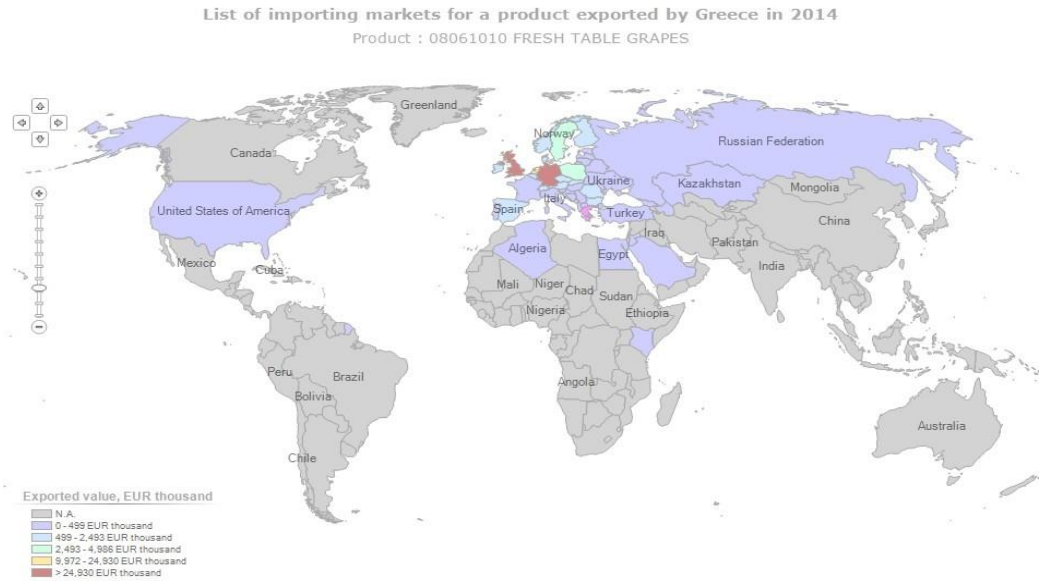


Figure 32 List of importing markets for table grape by Greece in 2014. Source: ITC (2015).

5.4 Synergies with other sectors

The sector of viticulture, table and wine grape, will be able to have synergies with other two sectors, which are wine tourism and e-commerce.

5.4.1 Agro tourism opportunities

In a number of European and global countries, efforts have been made to link organic farming to a special type of environmentally friendly agro/rural tourism. At a European level, ECEAT – the European Centre for Ecological and Agricultural Tourism, holds records of, and publicizes, a number of organic farms that offer organic accommodation and food. At a national level, Austrian Farm Holidays have for a long time produced special marketing materials for organic farm members. In a global level, in Korea and to some extent in Japan, an organization marketing organic farm holidays to the buyers of organic food is working successfully as a two-way marketing synergy (Choo & Jamal, 2009).

Agro touristic businesses can combine touristic and agricultural activities or collaborate with agricultural businesses in order to enrich their touristic product.

Wine tourism has been defined as 'visitation to vineyards, wineries, wine festivals and wine shows for which grape wine tasting and/or experiencing the attributes of a grape wine region are the prime motivating factors for visitors' (Hall et al., 2000).
According to our study, all winemakers expressed interest for wine tourism or they are doing wine tourism. The majority of the others producers of wine and table grapes, expressed their interest to do wine tourism, but they do not know how to do it.

5.4.2 E-commerce opportunities

E-commerce is the "new" way to trade goods and is expanding widely and globally. Using e- commerce there is a chance to sell your products in places the you could not reach otherwise.

Table 32 Results of the use of e-commerce and e-shop by questionnaires.

E-commerce and e-shop questionnaire	
1. Regarding company web site	
a. We don't have a company web site	27,27 %
b. We have a website and we use it for (you can select more than one) :	
1. Information regarding products and services	63,64 %
2. Customer feedback	45,45 %
3. Online sales options	27,27 %
c. It is optimized for mobile browsing	9,09 %
d. It is multilingual (more than three languages)	9,09 %
e. It offers options for online sales	0,00 %
2. Do you use a Smartphone or tablet?	72,73 %
3. Select the e-marketing tools you use if any (you can use more than one) :	
a. Email marketing (Newsletters)	63,64 %
b. Video marketing (YouTube promotion)	63,64 %
c. SMS marketing	0,00 %
d. Social media marketing	63,64 %
e. PPC advertising (Search engine advertising)	18,18 %
f. None of the above	36,36 %
4. Would you use a web based platform to sell products directly to the customers?	54,55 %
5. Would you use a web based platform to sell products directly to your business partners?	45,45 %
6. Would you use a web based platform for purchasing production related goods?	72,73 %

Our first finding from the questionnaires (table 31), is that almost one out of three doesn't own a company site and those who do are focused mainly on the informative aspect, displaying product and services related information; also less than half of them have invested on customer support and less than one third on e-commerce aspect. Our results from this aspect are that most follow the common practice of a site with basic functionality, without investing properly or utilizing its potential and they facilitate in a small degree integrated customer support.

On the other on future usage question regarding b2b and b2c sales as well as b2b purchases the percentages where highly positive, ranging from forty five up to seventy two percent. This finding coupled with the fore mentioned, leads us to conclude that professionals

have grasped the utility of such tools and are willing to incorporate them into their business model, despite the fact that they haven't done extendedly so far.

This can also be seen by the fact that seventy two percent uses a smartphone and for the ones who are using digital marketing tools, we found high percentages for social media, video and newsletter methods integration. The latter has an increased significance since corporate structured news used in newsletters are not often used in Greek agribusiness especially through such channels, so we conclude that the underlying structure as well the belief for their usefulness has already grown.

6. Guidelines and Indicative business plan

Technical systemic approach to Integrated Crop Management.

To create a successful rural business is longer necessary the combination of a traditional agriculture to modern methods. These include the right preparation, the creation business plan the organization and administration. For grapes we have distinguished 5 phases (Fig. 33- 37):

1. Phase 1: From idea to Decision. . In this phase a well structured research should be conducted in order to investigate what would be the best choice in terms of cultivated varieties, what are the optimum soil and climate conditions and which is the range of values of the above mentioned parameters that permit the viable production of specific plant varieties. A master plan must be scheduled and this will be followed during the investment realization.
2. Phase 2: Preparation for cultivation: This phase includes all necessary actions for legal and financial arrangements as well as infrastructure construction so that everything will be taken care for the installation of plantations. In this phase land must be made available for the plantation and other facilities such as roads, irrigation networks, nurseries and other facilities must be programmed and/or constructed.
3. Phase 3: Installation of cultivation to harvest. This phase starts with the preparations for agriculture practice like soil analysis before seeding. In or planting terms of a modern knowledge based agriculture all major issues concerning agriculture should be arranged, programmed and all plants' needs and alternative actions to meet them should be written down in the form of management plans. Therefore there must be at least the following management plans:

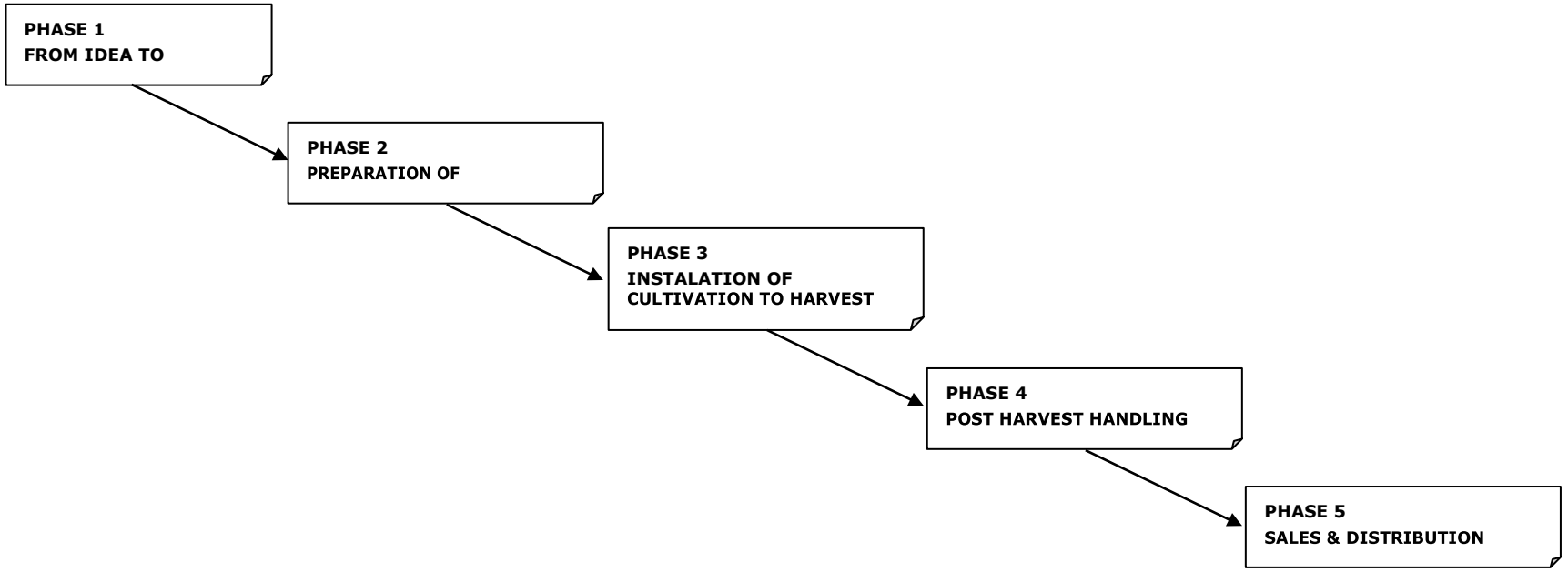
   - Soil Management Plan, which describes the soil structure, its contained levels of nutritional elements and handling of soil via specific practices in order to protect from factors such as erosion or compaction and moreover to improve it in terms of mechanical or nutritional composition.
   - Propagation Material Management Plan which will describe what is the propagation material used by the company, how it is produced or purchased, what are the desired qualities, how they are assured and other technical issues like what is the time, manner, distances etc. of seeding or planting.
   - Irrigation Management Plan which describes the demands in irrigation, irrigation timing, quantity of water and means for irrigating the plants.

- Cultivation techniques Management Plan, which describes the works done in the field (tilling, pruning etc.), when how and by whom they are done.
- Fertilization Management Plan which describes the kind, timing, quantity and method of fertilizers and other substances used for plant nutrition
- Plant Protection Management Plan which describes the exact actions that should be taken in the appearance of a pest or disease in the plantation, what plant protection product should be used, how, when, in what dosage etc.
- Harvesting Management Plan which describes what it the optimum stage for harvest of the product, how the harvest should be done, by whom, so that the company would assure that it gets the best of plant qualities in the harvested product.
- Infrastructure, Tools and Machinery Management Plan which describes maintenance, adjustments, calibration and verification of the used machinery and tools in the company.
- Personnel Health, Safety and Training Management Plan which describes all the precautions taken by the company for the safety of personnel during work as well as the training activities for the personnel so that it is highly qualified in order to "do the job right".
- Emergency Management Plan should describe standardized operational procedures that should be applied in case of some emergency situation. This plan should include cases of extreme weather conditions, accidents that personnel is involved, cases like fire or even cases like changes in legislation or customer demands or even financial related issues (capital controls!)
- Environment Management Plan should describe all necessary procedures applied by the company in order to make sure that basic environmental legislation is met and its operation does not harm the environment.
- Economics and Finance Management Plan should be designed so that cash flow in critical periods of the season should be available for the smooth operation of the company. This because unlikely other business in agriculture everything must be on time because plant follow the rhythm of nature, so all works must be done when they must be done and should not wait for later.

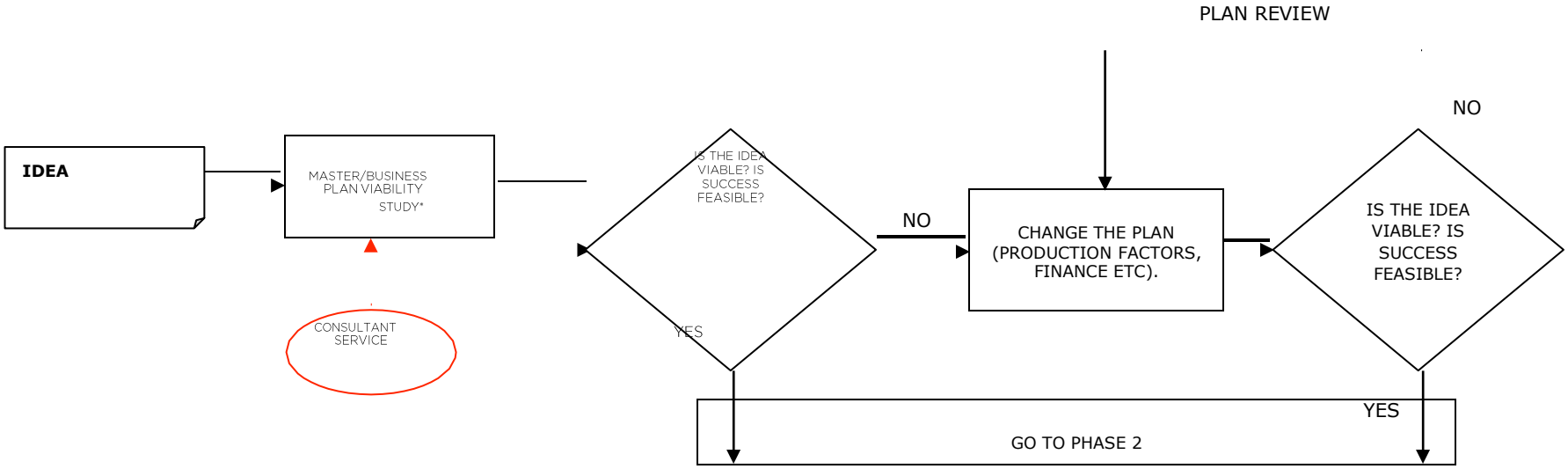
4. Phase 4: Past harvest product handling. This phase starts right after harvest and includes all the processing of the harvested plant materials and the production of semi-finished and final products. These can be as first materials in the industry or as ready to use products by the consumer.
5. Phase 5: Sales and distribution. This phase include all necessary actions that take place from the moment that a product is ready after processing to the final consumption by the customer.

VITICULTURE, TABLE AND WINE GRAPE VARIETIES *Figure 33 Process Plan (Phase 1)*

5 SEPARATE PHASES FROM IDEA TO INVEST A VINEYARD TO THE REALIZATION OF A SUCCESSFUL BUSINESS



PHASE 1. FROM IDEA TO DECISION MAKING



* FACTORS TO BE TAKEN UNDER CONSIDERATION

WHAT: CAPABILITY, INDUSTRY INVESTMENT, MARKET

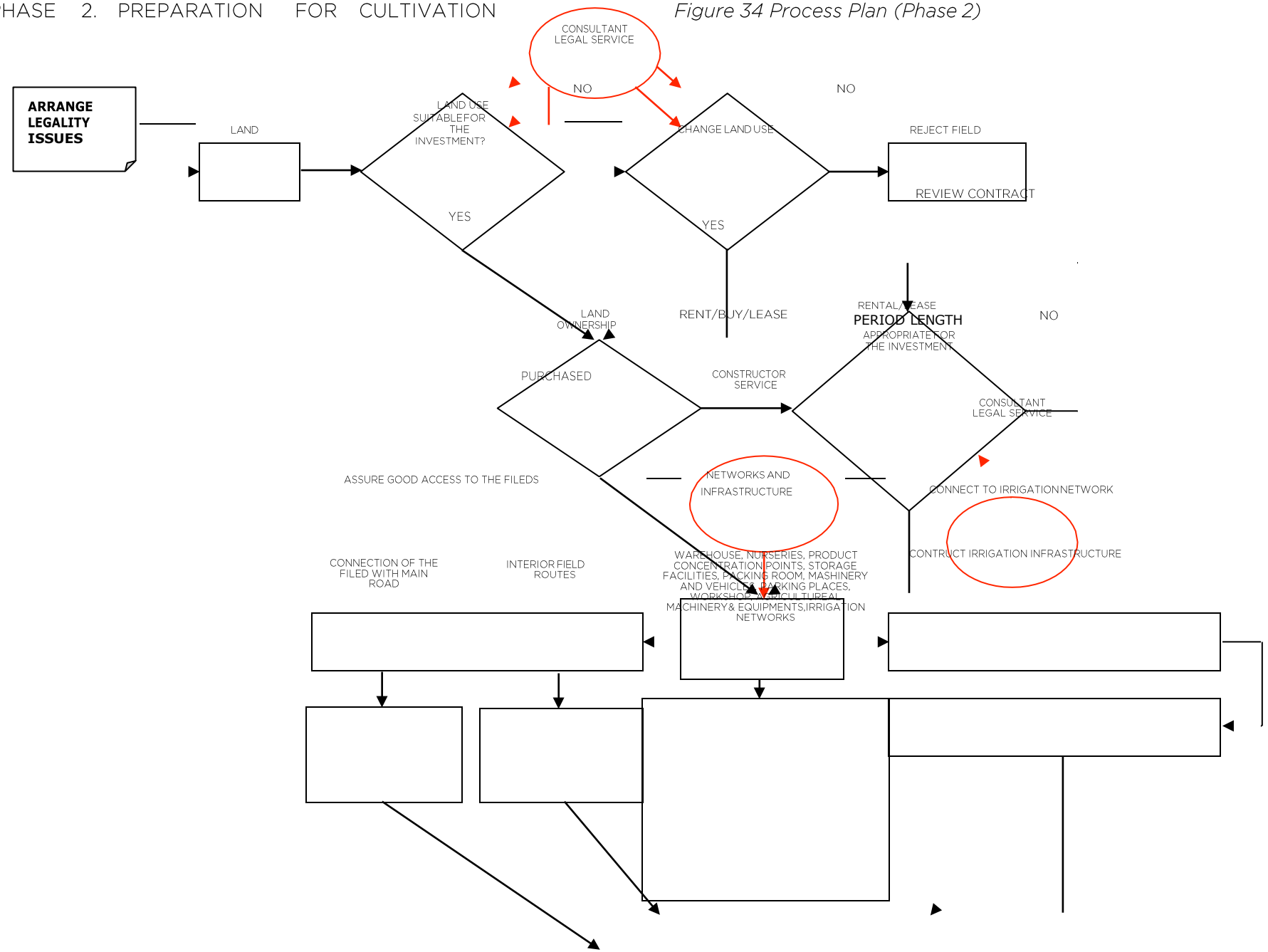
NEEDS WHERE: LAND USE, LOCAL CONDITIONS

HOW: ACCESS TO WATER, CLIMATIC CONSIDERATIONS

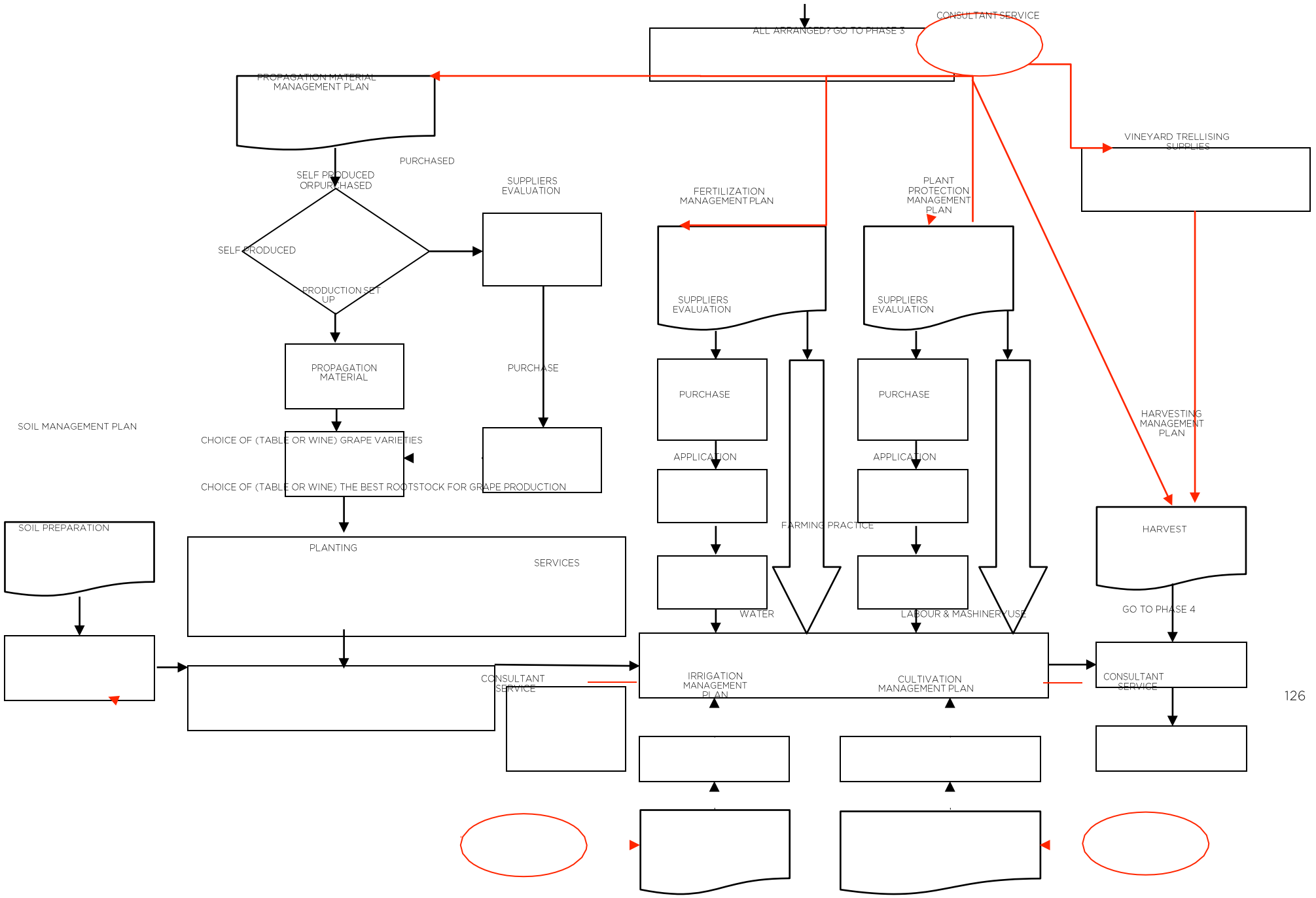
WHEN: TIME TO START

PHASE 2. PREPARATION FOR CULTIVATION

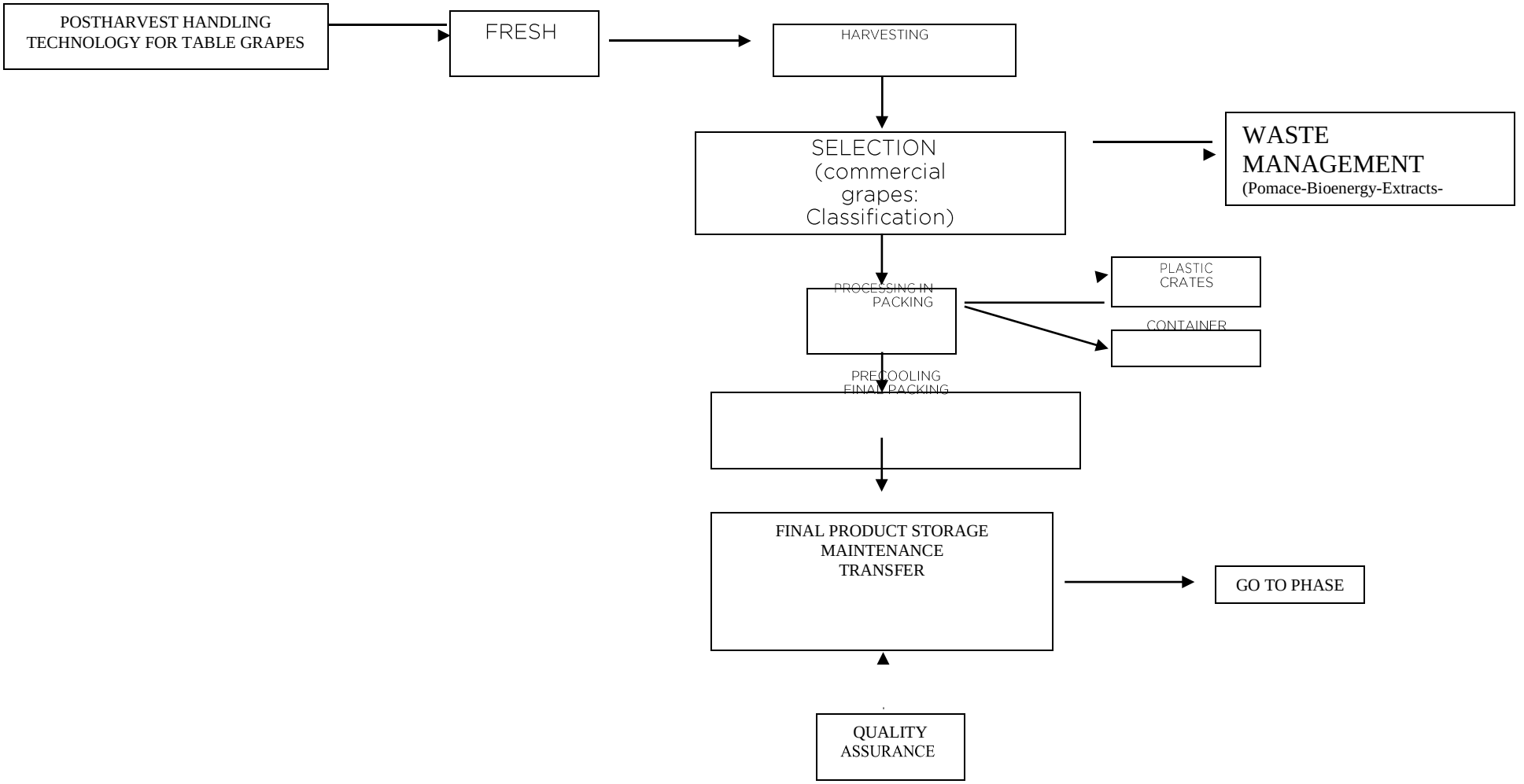
Figure 34 Process Plan (Phase 2)



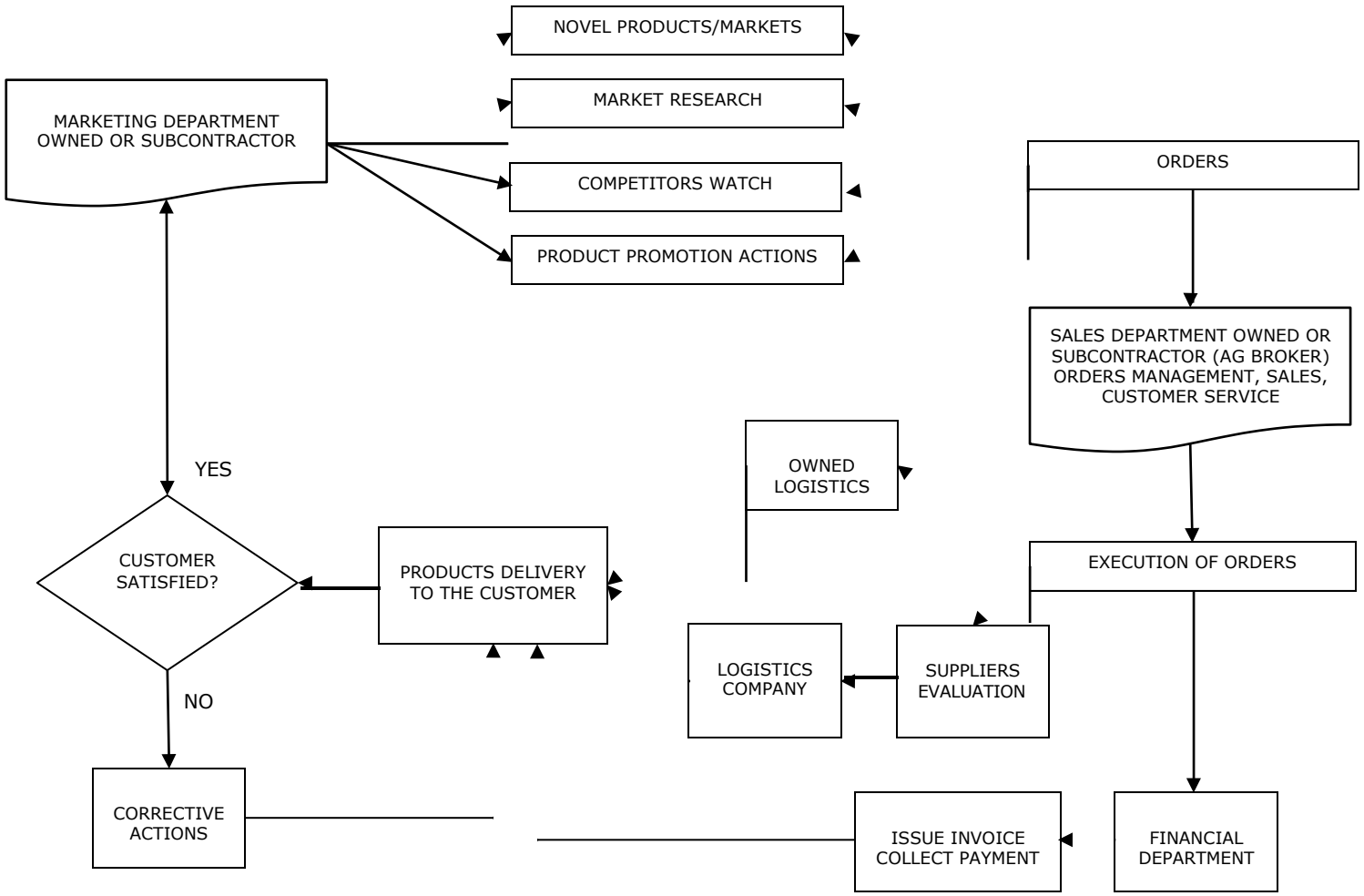
PHASE 3 INSTALATION OF CULTIVATION TO HARVEST *Figure 35 Process Plan (Phase 3)*



PHASE 4 POST HARVEST HANDLING *Figure 36 Process Plan (Phase 4)*



PHASE 5 SALES & DISTRIBUTION *Figure 37 Process Plan (Phase 5)*



6.1 *Guidelines & Indicative Business Plan*

Selection of variety

A number of varieties used in the production of wine and table grapes, each one having distinct properties and special gifts, are used and each one requires an appropriate soil-climate environment.

The local climate of a region depends also on the topography and this may be the main factor for the satisfactory adaptation of a variety.

For the choice of wine varieties, determining factors are:

1. The size of the grape fruit (low - medium) associated with the dry residue.
2. Moderate robustness.
3. The particular characteristics of the must (sugar acids).
4. The characteristics of the bark – seeds (phenols, aromatic compounds, etc.).
5. The resistance to pathogens.
6. The marketability.

There are over 400 indigenous Greek varieties with many advantages (eg resistant to dry and hot conditions) and disadvantages (for example low acidity and coloring). In addition there is a high quality potential of exotic wine varieties (Cardonnay, Cabernet – Sauvignon, etc)

For the selection of table varieties determinants are:

1. The characteristics of the fruit (color, size, flavor, etc.)
2. The commercial demand
3. Seedless or not
4. The curing time
5. The production potential
6. The annual cost of agrochemicals and specialized in agricultural machinery
7. The sensitivity to transportation and maintenance

Selection of the best rootstock

The choice of suitable rootstock is based on the satisfactory growth of plants in the vineyard and the production of quality products. In areas that are prone to phylloxera

(a major grape disease), the vine cultivation involves the grafting of rootstock varieties resistant to phylloxera. The choice of the rootstock is subject to the following conditions:

a) good genetic compatibility with the variety of production,

- effect on robustness
- effect on earliness

b) satisfactory adaptation to soil conditions

- moisture resistance (110R, 1103P, 140Ru)
- resistance to calcium carbonate (110R, 1103P, 140Ru, So4, 41B)
- resistance to saline soils (1616C, 1103P, 140Ru)
- resistance to acidic soils (Gravesac)
- cohesive resistance and heavy soils (11-14)
- resistance to nematodes (SO_4, 5BB)

Planting density

The characteristics of the soil and climate of an area directly related to the number of plants per unit area and specific provision. The proper density and arrangement result in the satisfactory installation of the root system, the better use of solar radiation and better exploitation of the soil volume by plants. In Mediterranean climates, the density is between 1500-5000 plants/ha.

Specifically, we have:

a) The calculation of the per ha density is calculated by the formula: 10000 / (between-line distance times the within-line distance between plants) The distance between the lines range from 1.5 m to 3 m. and the distance between plants varies from 0.8 meters to 2 meters.

b) The planting density should adjust the size of the stumps depending on soil characteristics.

- In poorer soils increase the density .
- In fertile soils reduce density.

c) The solar radiation utilized by appropriate orientation of planting lines.

- The orientation N-S achieves: i) exploitation of light from both sides, ii) more favorable conditions as conducive to early photosynthesis and shading noon.
- The orientation E-W uniformly exploit solar radiation.

Establishment of a Vineyard

1) Topographic map

a) Obtain a plan of the parcel where the vineyard will be established.

b) Provide pathway-space for the machines, to access in the field.

c) Observe the prevailing slope, the exposure and orientation of the planting line.

d) Track and record the flow and direction of rainwater, closed basins and drainage.

f) Record native vegetation.

2) Removal of plant residues from the field

If the field is cultivated first time for a vineyard, you need to remove native vegetation and most of the root system of plants that existed. It could be a deep plowing a fallow or crop rotation (especially in resettlement).

5) Determination of slope

Identify the inclinations of the surface, in order to decide how to settle the planting lines.

slope <10% cultivation in all directions

10% <slope <20% during the cultivation time of inclinations or larger

terraces 20% <slope <40% terraces in regions with little precipitation

slope> 45% micro-terraces (<1 meter) or on contour lines

6) Soil Analysis

Make soil excavation for soil profile in order to identify:

- the effective depth of the root growth
- impervious horizons (Clay, calcareous, compact parent material)
- underground water level
- drainage and infiltration

In addition, a soil sampling is required for the determination of physicochemical properties of the soil.

Planting preparation

The producer should start in the summer, doing the following activities

- Remove previous vegetation.
- Fallow land or crop rotation for 1-2 years (in the case of resettlement).
- Deep plough at 50 - 100 cm.
- Drain projects-establish drainage system (if necessary). In the autumn we have:

Deep plowing to 50 - 70 cm and incorporating basic fertilization and organic matter. In the spring:

It is recommended to make a rotary tiller to incorporate and invert soil in shadow depth (0-15 cm).

Planting (March - May)

Open pits to 40 - 50 cm and add fine soil texture for better plant growth and supporting stakes.

Propagating materials

Grapevines can be propagated from seeds, cuttings, layers, grafts or by meristem culture (Glen L., Creasy and Leroy L. Creasy, 2009). The choice depends on the availability of labor, plant material and the vines are required (e.g. grafted or own-rooted).

i. Difficult-to-root cultivars can be propagated by layering
ii. A cutting is a piece of a parent plant, from which we are able to develop into a new plant. Cuttings usually made from dormant canes or green shoots. Dormant rooted cuttings, is the cuttings that can be grown in a nursery for one year, dug out in the winter and planted in the vineyard. If own-rooted vines are needed, easy-to-root cultivars can be planted directly in the vineyard. Dormant

unrooted cuttings can be placed into holes made with a steel rod (Glen L., Creasy and Leroy L. Creasy, 2009).

iii. Grafting, normally only used in phylloxera-free regions or with phylloxera-resistant rootstock (Glen L., Creasy and Leroy L. Creasy, 2009).

iv. Green, softwood cuttings can be rooted in mist beds in a greenhouse and also to produce grafted vines. The rootstock is rooted in a mist bed and then a section of the scion variety grafted to the rooted rootstock. These are grown in pots under controlled conditions until acclimated and then planted directly in the vineyard. (Glen L., Creasy and Leroy L. Creasy, 2009).

Supporting system for vineyard

The purpose is to:

- Support stumps.
- To support the weight of the above-ground section.
- To withstand lateral wind.
- To last about 20 -30 years.

Properties of the supporting materials

- Stakes from: wood, cement, iron.
- High elasticity wire, galvanized: 1 single and 2 or 3 pairs of double wires.
- Wire support system in soil: bracket or peg.

Types of pruning

The most popular methods for pruning are cane and spur. In the cane pruning, the fruiting shoots for the next season come from a length of the previous season's shoot, which is laid down and wrapped on the fruiting wire of the trellising system. Spur pruning does away with continued use of canes by establishing a permanent arm, or cordon, from a cane. (Glen L., Creasy and Leroy L. Creasy, 2009).

Training and trellising

Trellising is the way of arranging the vine in space (Glen L., Creasy and Leroy L. Creasy, 2009). The choice of the type of the trellising, depends on: variety, subject, climate, topography, soil fertility, installation costs, possibility of mechanization and legislation. The main goals are to maximize sunlight interception, minimize the

number of additional inputs, provide physical support and be compatible with the management situation (use of special machinery).

- The simplest training systems are staked vines or bush vines (Self- or stake- supported).
- Single wire trellising systems are used for a variety of purposes and the cost for establishment is low, due to only one wire being needed to use.
- Vertical Shoot Positioning (VSP,) is a widely used trellising system for the production of wine grapes and existed two types (Royat and Guyot)

Select height trunk

Small height

In cold mountain regions is to exploit the heat of the

soil Big height

- In warm areas
- in areas with spring frost to avoid damage
- in regions with high humidity to prevent diseases

General annuals vineyard cultivation practices

To balance vegetative and reproductive growth, the following practices are suggested:

a) winter pruning: Distribution liveliness and load. With the aim of developing the vine (maximum increase 7-20 years)

b) summer pruning: canopy management, to control the liveliness and ensure an appropriate microclimate

c) irrigation

d) fertilization

e) weed control

f) plant protection, pest and disease control

Annuals cultivation specific operations

Pruning and training of the vine are two of the most important aspects for quality grape production, whether it is for table, wine or other uses. There are two main types

of pruning that can occur: summer and winter. The purpose of summer pruning (removal of green shoot parts during the growing season) is mainly to open up the canopy, prevent self-shading or just to tidy up the appearance of the vines
The real work in pruning happens in the dormant season, when a decision has to be made as to how much, and which parts, of the previous season's growth must be removed (Glen L., Creasy and Leroy L. Creasy, 2009).

1. Pruning fruiting: Is the winter pruning to remove live lignified plant parts (annual).
2. Summer pruning: We seek to correct errors of winter pruning, and improving conditions for growing.

The aims of pruning are to:

1. Establish the vine in the desired form.
2. Produce fruit of the target composition.
3. Select nodes that will produce fruitful shoots.
4. Regulate shoot number/crop load.
5. Regulate vegetative growth

6.1.1 Indicative business plan

An indicative business plan was developed using technical and economic data from agricultural holdings and the determination of the costs for table grape cultivation. The data were collected for the evaluation of the production cost and the variable and fixed costs of table grape cultivation.

		Table Grapes
COST	Variable costs per ha (€)	
	Fertilization cost per ha	€ 1,800.00
	Pesticide cost per ha	€ 240.00
	Labor cost per ha	€ 210.00
	Reproductive material cost per ha	€ -
	Other cost per ha (Certification)	€ -
	Depreciation	
	Maintenance equipment cost	€ 818.00
	Equipment insurance	€ 327.00
	Building depreciation	€ 379.00
	Equipment depreciation	€ 2,136.00
	Irrigation	
	Total irrigation cost per ha year	€ -
	TOTAL COSTS	€ 5,910

INCOME	Gross annuity	
	Crop yield (kg/ha)	€ 20,000.00
	Average crop price (€/kg)	€ 1.00
	Production value	€ 20,000

NET INCOME	NET INCOME	
	NET INCOME per ha (before taxes)	€ 14,090

7. Conclusions and Recommendations

7.2 Conclusions

Viticulture of table and wine grapes sector from ancient times has always been a significant part of Greek tradition. This results in considerable prior experience in agriculture and viticulture and the "Know-how" in cultivation and processing techniques. Furthermore, the long tradition and experience on vine cultivation is due to the favorable and diverse climate and soil conditions.

The study showed a small size and large number of fields per agricultural holdings. This is due to a large extent to the limited distribution of planting rights and especially for new farmers who are facing the biggest difficulty in establishing a new vineyard.

The problems created by the financial crisis affected negatively the investment sector and cash flow. The high initial cost of land, vineyard establishment and required equipment as well as the new recent taxes imposed on wine has made the sector quite inaccessible. Moreover, there are insufficient funds for education, research and for funding programs that could help the existing producers as well those who desire to entrer the sector.

Further study of the sector revealed significant issues in marketing, trading and e-commerce. Very few producers consider important market research and marketing and even those who so desire, lack the skills and knowledge to perform. Producers who decide to deal with the sector should turn to qualified persons who will undertake a market research and identification of potential buyers and make a business plan and generally have a scientific support.

The lack of certified propagating material of native wine varieties and inadequate research on Greek wine grape varieties are some of the main weakness that minimize the opportunity of the sector becoming more competitive against other countries.

Processing companies for table grapes and vineyards are very small and primarily family businesses. Producers are satisfied with the yields of crops, particularly those of table grapes. However, they complain that there is no support from the Greek governments, they face difficulties in the process of exporting due to the complex paperwork required and are seeking assistance in order to increase the prices or place

low price limit. Finally, they claim that there is no stable production and it often fluctuates due to climate and extreme weather events.

Despite these problems, it is a dynamic sector with high potentials. However, to turn this potential into reality there are some actions to be carried out. The launch must be done by the state with the creation of a Greek certificate organization of propagating material. There is also the need to fund educational programs regarding farming techniques, market research, marketing and familiarizing with technology and e- commerce. Planting rights are a limiting factor because only few hectares are given to new producers in order to start cultivation. If there is a chance for new farmers to have more area, then their products will be more competitive.

Additionally, there is a need to increase the appreciation of native wine varieties as the range and quality of them is very remarkable and should be exploited in order to replace foreign varieties. The establishment of organic and integrated farm management systems, the promotion of nutritional value and proven health benefits of wine, table grapes and currants will make the sector more competitive. Finally, synergies with agro tourism are proven to have a great positive impact on the promotion of the sector especially for the wineries.

In order to fully exploit all possibilities of the sector should be done with an organized approach and management. All stakeholders should adopt a common vision in order to achieve all the targets, reveal the dynamic of the Greek grape and the agricultural production and economy.

7.3 Recommendation for consideration in the implementation Phase

VITICULTURE, TABLE AND WINE GRAPES

A) Opportunities for easy victories:

1. New emerging markets for table grapes (Russia, China).
2. Increased popularity of Mediterranean cuisine.

Strengths to rely on, in order to take advantage of these opportunities

- Favorable Climate and soil conditions.
- Established organic and integrated farm management systems
- Proven health benefits of currants.
- Strong export activity of table grapes.
- Established brand name of Greek table grapes.

B) Opportunities that can be taken advantage of only after redressing the balance of strengths/weaknesses

I. Decreased Euro exchange rate favors Greek exports to other non-European countries.

II. Interest by potential new farmers

Weaknesses to alleviate in order to take advantage of such opportunities

1. Insufficient resources for viticulture education.
2. Lack of skills in marketing and trading.
3. Low level of vertical integration for table grapes.

Overall, most promising viticulture type to place emphasis on: Table grapes.

Proposals for Part B of the Project:

Relevant to A) Opportunities for easy victories:

↘ E-commerce

↘ Marketing

↘ Packaging

Relevant to B) Opportunities that can be taken advantage of only after redressing balance of strengths/weaknesses:

1) Install a network of remotely controlled Automated Weather Stations to be used by extension services for supporting producers on irrigation, soil fertility and disease and pest forecasting. (medium term)
2) Train extension personnel (medium term)
3) Viticulture Training Center (long term)
4) Cultivation with new techniques (long term)

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Appendix I – Economic analysis of the viticulture sector

Fertilization cost per acre

Regarding the fertilization cost per acre the highest costs are covered by compound, organic and basic fertilizer with 39,55 %, 15,66% and 15,47% respectively. The fertilizers that are less used in viticulture are urea and simple superphosphate covering 0,40% and 0,60% of the total costs respectively.

Fertilizer	Participation (%)
Simple superphosphate	0,60
Basic fertilizer	15,47
Foliar fertilizer	0,21
Ammonium sulphate	1,33
Potassium sulphate	1,65
Sulphate	10,31
Potassium	1,31
Fresh manure	2,47
Ammonium nitrate	0,87
Potassium nitrate	0,82
Organic	15,66
Urea	0,41
Compound fertilizer	39,55
Water Soluble	0,70
Ammonium phosphate	7,81
Copper	0,82

Pesticide cost per acre

Regarding pesticide cost per acre in viticulture the highest cost is covered by fungicide and insecticide with 73,76% and 14,52% respectively.

Pesticide	Participation (%)
Acaricide	0,08
Insecticide	14,52
Herbicide	10,95
Sulphur	0,21
Fungicide	73,76
Plant hormones	0,49

Labor cost per time unit per acre

Labor cost in viticulture holdings is mostly allocated to cultivator application (19,23%) and defoliation (14,53%), while other labor costs such as foliar fertilization or fruit thinning represent the 0,37% and 2,05% of the total costs respectively.

Labor	Participation (%)
Defoliation	14,53
Flower thinning	8,04
Fruit thinning	2,05
Fertilization	1,83
De - budding	7,05
General cultivation	6,99
Trellising	1,51
Foliar fertilization	0,37
Cultivator application	19,23
Destroyer application	3,59
Pesticide fertilization	4,41
Pruning	2,94
Fruit pruning	2,14
Tipping	3,67
Tilling	2,08
Cultivating	3,65
Harvesting	6,60
Milling	9,31

Reproductive material cost per acre

The cost of reproductive material per acre is divided between rooted cuttings and seedlings covering the 21,25% and 78,75% of the total cost respectively.

Reproductive material	Participation (%)
Rooted cuttings	21,25
Seedling	78,75

Table 6 Cost distribution percent per reproductive material per acre

Supplies cost per acre

The supplies cost divided between binding material with 57,61% and packaging material with 42,39%.

Supplies cost	Participation (%)
Binding material	57,61
Packaging material	42,39

Other costs

Considering the other costs that take place in a viticulture holding the cost that cover the higher percent is general expenses costs that the farmers could not record, however considering the rest of the costs, marketing costs apply to the 25,99% and fuel costs to the 9,34% of the total costs.

Other costs	Participation (%)
Electricity	2,80
Irrigation fees	5,94
Marketing costs	25,99
Certification cost	6,70
ELGA fee	3,74
Fuel	9,34
Other	45,50

Family labor per time unit per acre

Regarding family labor fruit pruning represent the 27,05% of the total family labor costs while harvesting covers the 25,15% of the total family labor costs.

Family labor	Participation (%)
Defoliation	3,72
Fertilization	0,74
De – budding	8,42
Trellising	3,47
Foliar fertilization	0,12
Cultivator application	0,50
Destroyer application	0,16
Pesticide fertilization	1,29
Pruning	10,26
Fruit pruning	27,05
Tipping	13,26
Tillage	0,99
Cultivating	1,90
Harvesting	25,14
Milling	1,33

Mechanical equipment per acre

The mechanical equipment that most used in a vineyard holding is the diesel tractor (15,62%), while other mechanical equipment that are used are soil working machine (5,68%), disc harrow (3,19%), plow (3,72), milling machine (4,77%) and sprayer (either manual or motorized). The high percent of the car use, either gasoline or diesel can be attributed to the use of the vehicle as a transportation mean to and from the holding.

Mechanical equipment	Participation (%)
Rural car	8,31
Soil working machine	5,68
Pneumatic scissors	0,32
Pump	1,33
Plow	3,72
Cotton gin	7,98
Gasoline car	7,82
Hooks	0,04
Disc harrow	3,19
Diesel tractor	15,62
Electro pump	1,43
Crop duster	0,09
Cauldron	3,19
Cultivator	0,88
Trailer Cultivator	0,91
Trailer	2,49
Destroyer	0,54
Pruning machine	0,29
Tipping machine	1,92
Tire	1,19
Fertilizer spreader	0,34
Wooden barrel	0,32
Diesel pump	1,92
Diesel car	10,83
Platform	0,05
Sprayer	3,05
Weeder	0,32
Crusher	1,17
Plant stem cutter	0,80
Irrigation pipes	2,77
Plow	0,64
Milling machine	4,77
Foliar cutter	1,80
Grass propelled cutter	0,97
Scissors	0,01
Motorized sprayer	2,68

Manual sprayer	0,60

Equipment cost per year

The equipment that is mostly used is the car either gasoline or diesel with the percent of 25,87% and 26,55% respectively. However diesel tractor (10,47%) and soil working machine (8,15%) are also used.

Equipment	Participation (%)
Car	28,95
Soil working machine	8,15
Gasoline car	25,87
Diesel tractor	10,47
Diesel car	26,55

Insurance interest and maintenance cost per year

Regarding the insurance interest the highest expenses applied to the cars either diesel (31,98%) or gasoline (25,58%). However equipment that is used for soil cultivation (10,49%) and irrigation are also participate in the expenses.

Equipment	Participation (%)
Car	10,49
Soil working machine	10,49
Tractor	1,99
Gasoline car	25,58
Diesel tractor	15,05
Trailer cultivator	0,66
Tire	0,23
Diesel car	31,98
Irrigation pipes	0,95
Sprayer	1,33
Manual sprayer	0,35

Procedure of data collection

A questionnaire was used for the collection of technical and economic data from agricultural holdings throughout the country.

The questionnaire was divided in nine sections.

Section 1

Collection of data related to the profile of the owner of the holding and all the people working on it. Moreover this section includes data regarding age, education, income derived from agriculture. Those data are not related to the economic results of the agricultural holding but are considering as necessary for the provision of effective advisory services to the holdings.

Section 2

General data regarding the agricultural holding profile divided in two parts. The first part include information related to plant production and aspects such as cultivation, acres, ownership and type of the holding.

Section 3

In this section information regarding fertilizers, pesticides, reproductive material are recorded. Moreover all the labour, the time spent for the use of the machinery for every cultivation during the year are also registered. Labour is also divided in family or foreign and all the fuel expenditure are also mentioned. Following that, records related to the irrigation are also noted.

Section 4

Data related to the fixed capital of the holding. Machinery used for crop production, purchase year, value, percent and hours of use in the sector, buildings, land reclamation and permanent plantation are recorded.

Section 5

This section referred to the general cost of an agricultural holding (power, fuel, other costs)

Section 6

Data related to the income by the holding. Specifically this part of the questionnaire is related to the collection of information regarding the product output for every agricultural sector and the sale prices. Moreover, the compensation for each sector is also recorded.

Section 8

Data related to the products and sub products and information related to subsidies, insurance claims and products distribution.

Section 9

Data related to subsidies of the holding, Single Payment Scheme in the context of Common Agricultural Policy or any other parameter that influence the farmer's income.

Appendix II - Profiles of interviewed farms and companies

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New Jersey Agricultural Experiment Station

Perrotis College
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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 30/10/2015
Company title:		Company Type: Family
Address: Metamorfosi - Kastoria		Web site:
Contact person: Alexiou Sotiris	Mobile: e-mail:	GPS location N: 40.56404937 E:21.3202647 4
Main activity sector: Production ☐ Processing Packaging & Distribution		Other activities:
Year of establishment: 1947 1977 1985	Management & ownership: Alexiou Sotiris	
Annual turnover: ● Up to 10.000 o 11.000-100.000 o101.000 – 200.000 o 201.000 and over		
Number of employees: Lacing 4 person for 10-15 days vine harvest: 4 persons for 10 days		
Level of activity: local/ regional ☐ national ☐ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Only in Kastoria		
Short company history/ researcher notes: He inherited the cultivation of the vine has learned it from his father. There is no sufficient demand at the time there are ready to harvest.		
Insert photos  		

MINI REPORT

Mister Alexiou Sotiris is professional farmers in the region of Kastoria and the cultivation of the vine has learned it from his father. It is notable that maintained until today the vine which had been planted by father in 1945. From 1.8 ha that he has 1.3 ha are wine grapes and the remaining 0,5 ha are table grapes.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- Some of the varieties he produces are local to its own names.
- The rootstocks used were wild because in 1945 his father did not know where to obtain them.
- He makes soil analysis every 3 years and foliar diagnosis almost every year.
- The vineyard is arid but the region, because of the altitude and microclimate, has a lot of rain so the production is quite good.
- He has learned to cultivate the vineyard empirically, but for the problems arising he is seeking to advise the agronomist.

COMERCIAL POTENTIAL

- 70% of the production from the wine grape sells it to specific customers, private individuals, in order to make their own wine or tsipouro.
- These buyers are usually people over 50 years who have the tradition and the satisfaction that they drink their own wine or tsipouro.
- There is strong competition in the marketing and sale of wine and table grapes, with the area of Tyrnavos, resulting in production quantities remain unsold.

TRAINING NEEDS FOR NEW FARMERS

- The new farmers must go somewhere to study about the cultivation of wine or table grapes.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He thinks that for a new producer to install a new vineyard with wine varieties, the ideal area is 5 ha and the minimum 2 to 3 ha.

- He estimates that the installation cost of a vineyard with wine varieties is approximately 20000 euros per ha.

PROBLEMS FACED BY GROWER

- Some variety grapes that he produces are very sensitive to diseases.
- Because of the microclimate of the area, the production of the grapes is late harvest. This implies that there is no good timing between consumers demand and offering possibilities of the local producers.
- The concurrence of harvest of the grapes and the apples in the area creates the need to place priorities. Apples are his main crop, and the one which brings him the largest profit so the greater division of labor falls in apples. The grapes rot many times before their harvest because of rain.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- It is a good and traditional crop for the youth, however in the area he believes that takes second place and that's because he claims that if one cultivates apples will have a fivefold income than grapes.
- Most of them producers in the area had or have a vineyard in order to produce their own wine or tsipouro.
- The order of priority crops to be proposed to the youth to his region would be the following: apples>beans>grapes>tomatoes>cherries.

GENERAL COMMENTS

- The region traditionally produces wine and table grapes for generations. But the last 15 years have seen acne in the production of new varieties of apples which is of great profit margins.
- Taking into account also the production of beans in the area, produced in large quantities, the vines come in third place of preference.

PROPOSALS FOR SOLUTIONS

- He would like to participate in seminars in order to learn a few things over the cultivation of the vine.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis & E. Topalidou	Date: 27/10/2015
Company title:		Company Type: Family
Address: Rapsani		Web site:
Contact person: Asterios Pazaris	Mobile: 6981117293 e-mail: mic_pazaris@hotmail.com	GPS location N- 39.90359914 E- 22.61930882
Main activity sector: Production ☑ Processing ☐ Packaging & Distribution ☐		Other activities:
Year of establishment: 1989	Management & ownership: Asterios, Michalis and Dimitrios Pazaris	
Annual turnover: o Up to 10.000 ● 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 9 part time		
Level of activity: local/ regional ☑ national ☐ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Rapsani		
Short company history/ researcher notes: He is a professional farmer. He produces wine grape varieties, kiwis, corn, sunflower and olives. He desires to bequeath the vineyard to his two sons.		
Insert photos 		

MINI REPORT

Mister Pazaris Asterios is a producer of wine grape varieties as he continues the family tradition that he inherited from his father and he desires to bequeath the vineyard to his two sons. He is a professional farmer and he also produces kiwis, corn, sunflower and olives. The area in which it is planted the vineyard is protected designations of origin and the entire production is purchased by Tsantalis. He is president of the Association of producers of wine grapes in the region of Rapsani.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- When he started the vineyard the cultivation method had learned it from his father but later he enriches his knowledge with the advice of agronomists and winemakers of Tsantali.
- He has all the machinery and the ancillary products but he would like to buy a defoliant machine.
- The last years he has improved his cultivation methods due to that one of his sons studied technologist agronomist and helps him in all crops.
- The innovation that made him stand out from other producers in the region is that it operates a system fertigation.

COMERCIAL POTENTIAL

- He has a better gain in price than other areas of protected designation of origin.
- He would like to extend the vineyard and planted additional 3 – 4 ha simultaneously with planting white grape varieties.
- He would like to exist and another winery to get even better price.

TRAINING NEEDS FOR NEW FARMERS

- He believes that it is easy for young people of the region to work in the vineyard, after of course studying the subject, because there are many vineyards in the area that they will be able later to gain the experience.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He thinks that for a new producer to install a new vineyard with wine varieties, the ideal area is 4 ha and the minimum 2 to 2.5 ha.
- He estimates that the installation cost of a vineyard with wine varieties is approximately 12000 Euros per ha.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILTY & ATTRACTIVENESS FOR YOUTH

- It is a very good prospect for young people of the area to employable.
- He received the vineyard from his father and now cultivate with the help of his sons.
- His ambition is to purchase more land and plant more grapes so that his sons continue the family tradition.

PROBLEMS FACED BY GROWER

- There is a basic problem concerning the acquisition of new rights so he has a difficulty of buying and planting new vines for his sons.
- The winery gets from his production up to 10000 kg per ha (quality criterion for wine production), but he produces up to 13000 kg per ha and the remaining makes the tsipouro.
- He would like someone to take over the marketing so that he can promote on the market the rest of his production.

GENERAL COMMENTS

- Although grapes are a profitable production, the kiwis are even more and that's the reason he recommends them.

PROPOSALS FOR SOLUTIONS

- He would like to participate in a research program concerning the needs of the crop in irrigation and fertilization.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 22/10/2015
Company title:		Company Type: family
Address: 1st km Tirnavou - Larisas		Web site:
Contact person: Chaloulis Athanasios	Mobile: 6936518544 e-mail: asepop@asepoptirnavos.gr	GPS location N- 39.72542618 E- 22.29377922
Main activity sector: Production ☐ Processing ☐ Packaging & Distribution ☐		Other activities: President of the association and Producer
Year of establishment: 1970 - 2002	Management & ownership: Chaloulis Athanasios & 55 members of Association	
Annual turnover: o Up to 10.000 ☐ 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ☐ national ☐ exporter ☐ importer ☐		
If exporter, main markets: No		
If importer, national origin of main imports:		
In Greece, main geographical Markets:		
Short company history/ researcher notes: Mister Chaloulis is a producer of wine and table grape varieties. He is the president of the association of ASEPOP TYRNAVOU. His involvement with the vineyard dates back to his childhood and reaches up today where he continues the family tradition that he inherited from his father.		
Insert photos  		

MINI REPORT

Mister Chaloulis is a producer of wine and table grape varieties, continuing the family tradition that he inherited from his father. He focuses only on the production, meaning that he does not process further or bottle his product. Furthermore he is the president of the association of ASEPOP TYRNAVOU.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The vineyard is conventional managed.
- He chooses early grape varieties and that gives him the advantage to supply the markets earlier and maximize the profit.
- Concerning the cultivation techniques, declared that he consults the agriculturist of the association especially when a change is need to be done.

COMERCIAL POTENTIAL

- In his opinion there is a need of support from the government.
- More specific, for mentoring and subsidized programs at all stages of cultivation from the selections of the specific varieties, to imposes guaranteed minimum price and in the last stage with channels of distribution and selected merchants.
- Finally, to make an effort to revival the traditional varieties and strengthen the development of the new ones.

TRAINING NEEDS FOR NEW FARMERS

- First of all, the new farmers they have to study the viticulture and then start to cultivate wine grapes

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The stabilization cost for the basics infrastructures ranges from 10000 to 15000 Euros per ha.
- He thinks that for a new producer to install a new vineyard the minimum area is 2 to 3 ha and the ideal, to be optimistic is 4 to 5 ha.

PROBLEMS FACED BY GROWER

- There has been a noticeable change in consumer behavior and preference on the white table seedless grape varieties.
- There is no support from the state.
- It would be useful to make a check of the traders who buy the production.
- There is no stable production and often fluctuates due to, climate and extreme weather events such as frost, microclimate of the region and the problems from the coloring of the grapes.
- The majority of consumers ask for white wine grapes, meaning white variety grape seed but in the region these varieties become sensitive and vulnerable.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- It is a dynamic cultivation with many development potentials and profits.
- For a guaranteed result recommended combining the production of wine and table grapes
- To take into consideration the advice from the older producers and of courses the opinion of qualified agriculturists.

GENERAL COMMENTS

- Traditional method of cultivation of table grapes.
- Guaranteed and certain income from the association who gets 100 % of the production of its member´s.
- He emphasized that before 15 years the proceeds were satisfactory but the last years has been reduced due to the change in consumer behavior and preference on the white varieties of grapes and white raisin.

PROPOSALS FOR SOLUTIONS

- Concerning the cultivation techniques, declared that he consults the agriculturist of the association especially when a change is need to be done.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, I. Kalfas	Date: 16/10/2015
Company title:		Company Type: Family
Address: Agios Paulos, Halkidiki		Web site:
Contact person: Goulis Nikolaos	Mobile: 6944905648 e-mail: nikos_goulis@hotmail.gr	GPS location N- 40.33909268 E- 23.06262328
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ☐		Other activities: Agricultural supply store
Year of establishment: 1998	Management & ownership: Management : Goulis Nikolaos Ownership : Dimitriou Ioanna	
Annual turnover: ■ Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ☐ national ■ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Halkidiki (Domaine Tsantali or Domaine Boutari)		
Short company history/ researcher notes: Goulis Nikolaos planted wine grapes because the area of Agios Paulos (Halkidiki) is traditional grape - growth area due to the ideal climate and soil conditions.		
Insert photos 		

MINI REPORT

Mr. Nikolaos Goulis is an agronomist and has agricultural supplies store in St. Pavlos - Chalkidiki. He is a professional farmer for 35 years. He first dealt with the table grape in 1998 when he installed the vineyard. A vineyard percentage belongs to his wife, which is new farmer and deals also. The art of viticulture learned it from his father, later on developed it with his studies and today applies that knowledge together with his wife.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- He applies conventional farming.
- It has all the necessary agricultural machinery and ancillaries needed.
- He uses the internet for information only on the agricultural machinery.

COMERCIAL POTENTIAL

- The 100 % of his production sells it to distilleries of Tsantali and Boutari.

TRAINING NEEDS FOR NEW FARMERS

- To have a substantial training of young farmers, not only in theory but also in practice.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION.

- The installation costs for basic requirements, he estimates at 15000 to 20000 per ha.

PROBLEMS FACED BY GROWER

- Any problem presented has the knowledge and experience to deal with.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

- It is a dynamic culture in which many young farmers can be involved in the area.
- It is sustainable and outweighs over other crops in the region.
- A new vine grower should be install minimum of 1 ha of wine grape and the ideal 3 ha.

GENERAL COMMENTS

- His comparative advantage over other producers of the region is that he is a professional agronomist and farmer at the same time and has the appropriate acquaintances to promote all its production

PROPOSALS FOR SOLUTIONS

- He would like to have further counseling knowledge, in case there is a problem he will not know how to cope.
- He would like to make chemical analyzes of soil, water, plant material to have a full knowledge of the field.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 23/10/2015
Company title: Producer – wine grapes		Company Type: Family
Address: Maronia - Komotini		Web site: -
Contact person: Katsaridis Athanasios	Mobile: 6976006400 e-mail:maronkom@otenet.gr	GPS location N- 41.11834931 E- 25.40274757
Main activity sector: Production ☑ Packaging & Distribution ☐ Processing ☐		Other activities: agriculturist in distillery of Tsantalis
Year of establishment: 2000	Management & ownership: Katsaridis Athanasios	
Annual turnover: o Up to 10.000 ☑ 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: Pruning: 8 for 20 days Vine harvest: 40 for 3 days		
Level of activity: local/ regional ☑ national ☐ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Tsantali - Maronia		
Short company history/ researcher notes: Disappointment from other crop yields which had in the past. He constantly adds further vineyards when it's possible.		
Insert photos		

MINI REPORT

Mr. Katsaridis is a technologist agronomist and is working in Tsantalis. Having the knowledge from his studies and experience from his work in TSANTALI decided and planted 100 acres of wine grapes. His decision was reinforced by the sense of disappointment he had from other crop yields which had in the past. He constantly submits applications for new planting rights, and whenever they give him, he add further vineyards.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- All 10 ha, that he has are owned and are managed only by himself except for some periods of high demands in working hours as pruning and harvesting, where hires workers.
- All the fields are irrigated.
- The choice of varieties produced is based on the demand of the wineries.
- Soil analysis made prior to installation of the crop and continues to do every three years.
- He has 1 tractor and all the ancillary equipment needed.
- All his cultivation is organic.
- He uses technology (smartphone) and searches the web for objects - components on agricultural machinery, fertilizers, etc.
- He does not make defoliation therefore reduces costs.
- He has adopted his own way of pruning and management of the vineyard from experimentation rather than those applied and recorded in the literature.

COMERCIAL POTENTIAL

- Almost all production is given in TSANTALI (distillery) apart from a small percentage which keeps for himself to produce his own wine.
- He is very satisfied by the production yield and the price received.
- It is the most efficient and profitable crop after the vegetables, but vegetables have greater demands on working hours.
- The demand is greater than the supply of grapes that can offer.

TRAINING NEEDS FOR NEW FARMERS

- For the youth the knowledge can easily get it by going in one institute and practice to someone experienced producer.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He thinks that for a new producer without experience to install a new vineyard the minimum should be 1 ha.
- He estimates that the installation cost of a vineyard of 1 ha is approximately 300000 – 400000 euro including a used tractor with the ancillaries.

PROBLEMS FACED BY GROWER

- He does not have particular problems concerning diseases.
- At the beginning he faced some difficulties to find reproductive material.
- Now the problem is that he wants the state to give more planting rights of those receiving.
- Another problem is the high initial installation cost, especially for a new producer.
- He also considers as a problem the new tax measures.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- He would thoroughly recommend to the youth of his region to deal because he sees strong margins of profit and he believes that it is cultivation with present and future.
- It is a very dynamic culture, especially in the area and this appears by the fact that demand is higher than supply.
- He would suggest to a young man lodge an application for young farmer in order to get a subsidy and to invest in the purchase or lease of land and establishment of vineyards.
- The new grower should have love for the vine but this does not apply for other crops.
- He considers that it would be good for a new producer to have dealt first with another culture and have mainly agricultural machinery and own land.

GENERAL COMMENTS

- After vegetables he considers that the vines have the largest profit.
- The demand is higher than production.
- He considers that the production of wine grapes is great opportunity in the region for anyone who wants to deal with agriculture.

PROPOSALS FOR SOLUTIONS

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 23/11/2015
Company title: Producer - Wine Grapes		Company Type: Family
Address: East Attiki		Web site: -
Contact person: Poulakis Petros	Mobile: 6977235990 e-mail:	GPS location N- 37.963874 E- 23.892271
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ☐		Other activities: Olives & olive oil
Year of establishment: 1960-1963	Management & ownership: Poulakis Petros	
Annual turnover: ■ Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ■ national ☐ exporter ☐ importer ☐		
If exporter, main markets: No		
If importer, national origin of main imports: No		
In Greece, main geographical Markets: Attiki (taverns-restaurants)		
Short company history/ researcher notes: The art of viticulture learned it from his father, who installed the vineyard in 1963, and continues to enrich his knowledge from the interaction with other producers. The region has a long tradition in viticulture. It is worth noting that all the houses at the time were wine presses.		
Insert photos 		

MINI REPORT

Mr. Poulakis worked on various jobs for many years, but his love for the vine made him keep it alongside other occupations. The art of viticulture learned it from his father, who established the vineyard in 1963, and continues to enrich his knowledge from the interaction with other producers. Spata, where the vineyard is established, is one of the larger areas in extent of wine grapes.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The choice of the variety Savvatiano was one way due to the high efficiency it has on area.
- Knowledge of the variety is familiar among the farmers of the region.
- The crop is conventional and employs some seasonal workers when it's needed.

COMERCIAL POTENTIAL

- He has found some restaurants and sells the wine he makes.
- Also sells wine or grape must to anyone wanted for personal use.
- He crushes the production on private pressing tanks or at the partnership of the area.

TRANINING NEEDS FOR NEW FARMERS

- He considers that the steps a young farmer should follow are the followings: education (as does his son), information about what the market wants, starting viticulture.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION.

- The installation cost he estimates that for arid to 25000 euro per ha, and with irrigation system, cost to 30000 euro per ha.
- A new vine grower should be install minimum of 500 ha of wine grape and the ideal 800 ha.

PROBLEMS FACED BY GROWER

- In 1963 there was not someone to buy the reproductive material, thus they isolating the desired selection and grafting onto wild subjects.
- The vineyard is many years and should be replanting.
- The wine press of the partnership sells him the must based on the pounds of grapes delivered and not if the production that is being crushed is his.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- It has been noticed that many young kids, after the financial crisis, follow the occupation of the producer and especially those whose parents engaged in viticulture or had land in the area.

GENERAL COMMENTS

- He maintains the vineyard until his son is ready to take over.

PROPOSALS FOR SOLUTIONS

- I would be interested to be trained, but more his son, to learn new techniques and use them to their vineyards.
- He would like to modernize the culture and with the help of an expert to create a small family winery.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: E. Topalidou	Date: 23/10/2015
Company title: Vine Association of NeaMesimvria (Producer Interviewed: MoisidisValdimiros)		Company Type: Family
Address: Nea Mesimvria		Web site:
Contact person: Vladimiros Moisidis	Mobile: 6977582292 e-mail:	GPS location N:40.754314 E:22.784628
Main activity sector: Production ■ Processing Packaging & Distribution		Other activities: Farmer
Year of establishment: Vineyard 1: 1992 Vineyard 2: 2004 Vineyard 3: 2007		Management & ownership: Vladimiros Moisidis
Annual turnover: o Up to 10.000 ● 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 7 (full time) & 15 (part time)		
Level of activity: local/ regional ■ nation ☐ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Mesimvria, contract with Tsantalis (Winery & distillery)		
Short company history/ researcher notes: He was cultivating wheat previously. He decided to shift to viticulture because the area is suitable for viticulture and offers a good income.		
Insert photos 		

MINI REPORT

Mr. Moisidis is in agricultural production through the whole of his life. He was cultivating wheat initially, but he decided to shift in viticulture (wine grapes) because viticulture thrives in the particular region of Nea Mesimvria and offers a good income for the producer.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The vineyard is organically managed. No particular innovation methods are used.
- Production is exclusively purchased byTsantalis and NeaMesimvria Wineries.

COMERCIAL POTENTIAL

- The commercial potential for quality wine grapes is extensive and promising.
- There are some major issues with the regulation and the legislation of "planting rights", which regulate replantation or establishment of new vineyards.

TRAINING NEEDS FOR NEW FARMERS

- They new producers need to be well trained and skilled in agricultural techniques (cultural practices, farming systems etc).

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The initial cost which is required for buying the land and establishing a vineyard is big and perhaps the major drawback for entering in vineyard production (5-7 ha are necessary for being viable and have an income).

PROBLEMS FACED BY GROWER

- Cash flow shortages due to the crisis in relation with the delayed payments by the wineries.
- The regulation and the legislation "planting rights. He would like to increase the cultivated area but his applications for new plantation rights are not fully approved (he applied for 2,5 ha but he got only 0,5 ha).
- He would like to employ one worker permanently but he cannot afford it.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- Vineyard is a dynamic crop with great potential for young people who seek to work in agriculture.
- Provided that the right strategy is implemented by the state, viticulture provides the potential of an alternative crop with great prospects for the producer.

GENERAL COMMENTS

- Vladimiros attended seminars for new farmers. He alsoattendedthe adult seminars for viticulture organized by the American Farm School.
- He seeks to increase the cultivated area and he believes inthe loyaltyof the collaborations he has already set up with Tsantalis and Mesimvria Wineries.
- He would like to have some consulting services but without an additional cost. For the time being he is getting advices from the agriculturists of his collaborative wineries.

-

PROPOSALS FOR SOLUTIONS

- A better framework of collaboration with the wineries for the producers.
- He believes in cooperatives but this framework failed in Nea Mesimvria for the producers because there were several conflicts between the professionals and the ones who had only small productions (secondary income). For this reason, he believes that is absolutely necessary to distinguish the professionals on the wine-grape production from the non-professionals.
- He believes that the state should regulate the planting rights differently and distribute them in such way so as to serve the ones who are professionally involved in the cultivation of wine-grapes.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis & E. Topalidou	Date: 12/10/2015
Company title: Ktima Chatzivaritis		Company Type: COMPANY SA
Address: Chatzivariti Estate, 6th Km of Goumenissa Kilkis Road, 61300, Goumenissa, Kilkis, Greece		Web site: www.chatzivaritis.gr
Contact person: Evangelos Chatzivaritis	Mobile: 6972200102/2310215259 e-mail: info@chatzivaritis.gr	GPS location N- 40.889349 E-22.477489
Main activity sector: Production ■ Processing ■ Packaging & Distribution ■		Other activities:
Year of establishment: Vineyard : 1994 Winery : 2007	Management & ownership: Evangelos Chatzivaritis Olga Iakovidou	
Annual turnover: o Up to 10.000 o 11.000-100.000 ■ 101.000 – 200.000 o 201.000 and over		
Number of employees: 2		
Level of activity: local/ regional ☐ national ☐ exporter ■ importer ☐		
If exporter, main markets: in many European countries (Germany, Sweden, England, Belgium, Cyprus), USA, Canada		
If importer, national origin of main imports:		
In Greece, main geographical Markets: all over Greece		
Short company history/ researcher notes: It all started with love… when Vagelis Chatzivaritis met his soon to be wife Olga Iakovidou in 1981. She was from Goumenissa, a place with a long tradition in winemaking. Little did he know that this was the place where he would, later on in life, dedicate himself into the creation of a very unique and widely undiscovered Greek wine. Being a wine lover himself, and a man who also appreciated fine food and the simple pleasures of life, he started making his own wine to enjoy with the company of his good friends and close relatives. For Vagelis, wine making was simply a hobby and time-out from his demanding career as a mechanical engineer. In 1994 he planted the first 50 acres vineyard in Bindabla area (light-textured sandy loaw soil). Expansion of the vineyard was inevitable and it was done gradually in the area of Filyria (medium –textured sandy clay soil) Today the vineyard of Domaine Chatzivariti consists of 120 acres . Emphasizing the quality of the grapes , soil fertility and environmental protection organic farming was chosen .		
Insert photos 		

MINI REPORT

The first vineyard was planted in 1994 (5 ha) at the area of Bintabla in Goumenissa. The climate of Goumenissa continental, with many rainfalls during the winter and warm summers.

Today the vineyard of Domaine Chatzivariti consists of 12 ha and in 2007 a winery was built in the vineyard of Filyria. Emphasizing in the quality of the grapes, soil fertility and environmental protection organic farming was chosen. The estate focuses on the Greek varieties of Xinomavro, Negoska, Roditis and Assyrtico. Popular varieties such as Sauvignon Blanc, Merlot, Chardonnay and Cabernet Sauvignon are also cultivated in smaller surfaces.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- Before setting up the vineyard and the winery he and his wife made a business plan, which they actually used as decision-making tool. They got advices on how to set up the vineyards and later on the winery from specialized scientists in the viticulture.
- The vineyard is organically managed
- He is using external consultancy from his collaborators, who are people that he trusts and has established collaboration for several years.
- He tries to have a early harvest of Xinomavro (about a week)
- Thinning leaves is made by hand instead of using machineries
- He is using the method of fruit thinning in order to promote fruit to reach at the desired level of maturation.

COMERCIAL POTENTIAL

" The annual income of the winery is between 101.000-200.000 euro. Fifty percent of the winery production is exported (mainly Germany, Sweeden, UK, USA, Canada, Belgium, Cyprus).

" According to Mr. Hatzivaritis it is extremely important to explore the markets and know their needs. Moreover, he believes that there are great opportunities for the wineries in foreign markets.

TRAINING NEEDS FOR NEW FARMERS

Young people who seek to work in viticulture should be well trained and try to get some practical experience before setting up their own vineyard.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- For setting up a viable small winery it is absolutely necessary to have 15-20 ha of owned vineyards and a production of approximately 80000-100000 bottled wine.
- On the other hand, for entering in the production of wine-grapes without setting up a winery, a minimum of 3-4 ha of cultivated vineyards is a prerequisite. The initial cost for setting up a vineyard is estimated approximately at 25000 €/ha.

PROBLEMS FACED BY GROWER

- No particular problems with bureaucracy where faced back in 1994, when the vineyard was established. However, nowadays the regulation and the legislation "planting rights are a major obstacle for expanding his business.
- Certain problems with using e-commerce. That is mainly because the wine wholesalers and retailers consider this service as unfair competition.
- Lack of skilled/trained part-time workers (pruning etc).

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY & ATTRACTIVENESS

FOR YOUTH

- Vineyard is a dynamic crop for the region and has great potential for young people who seek to work in agriculture.
- There is a lot of space for new producers to enter in viticulture especially in the area of Goumenissa.
- Buying wines from small-boutique wineries is quite fashionable nowadays; Mr. Hatzivaritis believes that this trend can help new people who seek to enter in viticulture and winery business.
- Main obstacles for new farmers are the initial cost and the regulation for the "planting rights".

GENERAL COMMENTS

- He employs two people permanently at the winery and ten-twelve part-time workers at the vineyards. He also has some external collaborators.
- He established the vineyard at Goumenissa (his wife's birth place) because he is passionate with wine.
- He is very willing to participate in research and educational programs.

PROPOSALS FOR SOLUTIONS

- Contract farming is a good option for a young person in order to enter in the wine-grape production.
- Educational institutions which will set up programs for training specialized workers (e.g pruning).
- Research needs: mapping the soil needs of his vineyard and study differentiation of Xinomavro maturation (early ripening).

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 29/10/2015
Company title: Ktima Glivanos		Company Type: S.A.
Address: Monastiri- Zitsa, Ioannina		Web site: www.glinavos.gr
Contact person: Eleftherios Glinavos	Mobile: 26580 22212 e-mail: domaine@glinavos.gr	GPS location N- 39.75447925 E- 20.65412045
Main activity sector: Production ■ Processing ■ Packaging & Distribution ■		Other activities: Distiller
Year of establishment: 1978 – first winery 2003 – new winery	Management & ownership: Eleftherios Glinavos	

Annual turnover:
- o Up to 10.000
- o 11.000-100.000
- o 101.000 – 200.000
- ● 201.000 and over

Number of employees: 16

Level of activity: local/ regional ☐ national ☐ exporter ■ importer ☐

If exporter, main markets: Germany, Belgium, Holland, USA, Canada and Australia.

If importer, national origin of main imports:

In Greece, main geographical Markets: Through wholesaler all over Greece and big wine cellars

Short company history/ researcher notes:
It is a winery located in the region Zitsa of Ioannina. The first vineyard in the area was created in 1978 with a very small winery. The expansion of the vineyard was made in 1993 and since then every year they add small areas. Modern winery was created in 2003 and continues to improve each year. It has a total of 180 acres. It also has a distillery.

Insert photos

MINI REPORT

It is a winery located in the region Zitsa of Ioannina. The first vineyard in the area was created in 1978 with a very small winery. The expansion of the vineyard was made in 1993 and since then every year they add small areas. Modern winery was created in 2003 and continues to improve each year. It has a total of 18 ha. It also has a distillery.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- Before installing the vine they did soil analysis
- They continue to do soil analysis every year and plant tissue analysis every 1- 2 years if problems appear.
- The vines are arid but the area has plenty of rain.
- In the early years of the first winery the production was insufficient to cover the needs so they were purchasing the production from other producers of the region.
- Nowadays in order to achieve the quality of their wines they buy specific quantities and varieties from producers from all over Greece.

COMMERCIAL POTENTIAL

- They are supplying the wines to wholesalers and large cellars in large urban centers.
- The exportation percentage is up to 15 and in countries such as Germany, Belgium, Netherlands, USA, Canada and Australia.
- They would like also extend to Russia and China.
- It has a tradition to sell wines from local varieties and has created a competitive advantage in selling sparkling and semi-sparkling wines.
- They are organized to create innovative products and beverage facilities.
- It takes place tourism through advertising the winery.
- They do not sale through e-shop because they come into conflict with the wholesalers.
- They have a website which provides information for their wines and the winery in three languages.
- They inform their associates with emails and newsletters

- They advertise the winery in magazines, in local ads, in newspapers and of course they participate at expeditions.

TRAINING NEEDS FOR NEW FARMERS

- Education in first phase at the highest possible level.
- Practical training to producers and winemakers not necessarily abroad but interior.
- Learn how to promote their product and explore markets for gaps.

COST OF ESTABLISHMENT, ANNUAL CULTIVATION.

- The original vineyard installation costs he estimated at 20000 Euros per ha.
- For starting of a new winegrower the minimum area believes that is 2,5 ha and the ideal 4 ha.
- To sustain a winery in the area will have to produce at least 50000 bottles of wine a year.

PROBLEMS FACED BY GROWER.

- Particular problems they faced with the rootstocks, which were not well adapted to climatic conditions and created many diseases for varieties that they were selected.
- Now they plant few areas because the government does not give them rights for planting.
- Done little advertising by the government for promotion of Greek wine from areas of special interest.
- Limited programs from the financing side for wine promotion events.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOYTH

- If someone from the youth does not deal with livestock is very good chance his involvement with viticulture.

GENERAL COMMENTS

- He has collaborated in the past with the University of Ioannina in research programs, lasting three years, for isolating and multiplying two strains of yeast of the local variety debina.

PROPOSALS FOR SOLUTIONS

- Practice in all wine-growing regions of Greece to meet the different cultivation tasks which vary according to the different soil and climatic conditions.
- Problems with small and thinly grape berry in some vineyards.
- They would be interested in a soil map.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 20/10/2015
Company title: Ktima Merkouri		Company Type: S.A.
Address: Korakochori Ilias		Web site: www.mercouri.gr
Contact person: Kannelakopoulos Dimitrios	Mobile: 6976633295 e-mail: mercouri@otenet.gr	GPS location N- 37.676672 E- 21.309695
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ■		Other activities: wine tourism, olive oil
Year of establishment: 1870 – vineyard 1930 – winery	Management & ownership: Vasilis & Xristos Kanellakopoulos	
Annual turnover: o Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 ● 201.000 and over		
Number of employees: 14		
Level of activity: local/ regional ■ national ☐ exporter ■ importer ☐		
If exporter, main markets: Cyprus, Germany, France, Switzerland, Belgium, Luxemburg, Norway, Italy, Denmark, U.S.A., Canada, Singapore, China.		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Athens, Thessaloniki, Islands.		
Short company history/ researcher notes: Dimitris Kanellakopoulos belongs to the 4th generation of the Kanellakopoulos family His great-grandfather back in 1870 planted the Italian variety “refosco”.		
Insert photos 		

MINI REPORT

Mr. Dimitris Kanellakopoulos belongs to the 4th generation of the Kanellakopoulos family that continues the tradition of viticulture. His great-grandfather back in 1870 planted the Italian variety "refosco". His grandfather in 1930 creates the initial winery, creates initial winery, which after 1960 was shrinking to grow again after 1985.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The family owns 16 ha of which 4 are olives and the rest is grapes.
- They make soil analysis every 3 years and consult an agronomist.
- During installation of the vineyard they did a business plan.
- They implement an integrated cultivation.
- They mainly prefer the cultivation of different Italian varieties.

COMERCIAL POTENTIAL

- 50% of the wines exported to Cyprus, Germany, France, Belgium, Sweden, Norway, Italy, Denmark, USA, Canada and Singapore. In Greece they supply Athens and Thessaloniki, Messenia, Achaia Crete and some other popular islands of Greece.
- They choose varieties with main criterion the preferences of markets and consumers and trying to promote local varieties.
- They do not sell through internet because they come into conflict with the wholesales.
- They have personal acquaintance and promote their wines in AB Vassilopoulos super markets.
- They participate in wine exhibitions, national and international, and are advertised in print magazines and newspapers.

TRAINING NEEDS FOR NEW FARMERS

- Before someone planting his own vineyard, first he has to learn some things in theory and also experiment while learning how shall treat the vine.
- They should try different vine harvest and farming techniques in other countries.

- To experiment in new varieties.
- To learn how to prune and defoliate the vineyard.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION

- To start a new installation of viticulture the cost range between 20000–25000 Euro per he. However if someone wants to expand by creating a winery too, the costs could reach 2 million euros and the production of wine bottles will range from 5000 to 20000.

PROBLEMS FACED BY GROWER

- They did not face much difficulty to go to Italy and get the variety they wanted.
- Having the experience of all these years in the market of wine gives them the advantage to deal with any difficulties arise.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- He thinks that for a new producer to deal with viticulture the minimum ha should have, are 1 and the optimum 3.
- The most profitable crop in the area is the olive and olive oil and then follow viticulture.

GENERAL COMMENTS / OUTCOMES

- He would like the person who will participate in the program, after the end of it, be able to be absorbed by a winery or to create his own vineyard.

PROPOSALS FOR SOLUTION

- Need for a soil map

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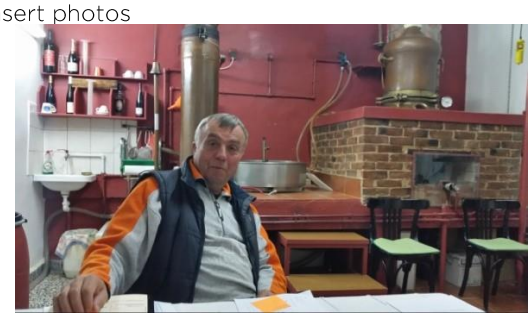
PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 30/10/2015
Company title: Ktima Stergiou		Company Type: Personal enterprise
Address: Metamorfosi Kastoria		Web site: www.ktimastergiou.gr
Contact person: Stergiou Sotirios	Mobile: 6946791340 e-mail: info@ktimastergiou.gr	GPS location N- 40.5628656 E- 22.32110951
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ■		Other activities: wine tourism
Year of establishment: 1910 – vineyard 2000 – winery	Management & ownership: Stergiou Sotirios	
Annual turnover: o Up to 10.000 o 11.000-100.000 ● 101.000 – 200.000 o 201.000 and over		
Number of employees: 1 oenologist 1 worker Other Cultivation Tasks & Harvest: 10-15 people for 10-15 days		
Level of activity: local/ regional ■ national ☐ exporter ■ importer ☐		
If exporter, main markets: Germany (20 %)		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Athens (40 %) , Thessaloniki (20-30%), rest 30-40% Kastoria		
Short company history/ researcher notes: Mr.Stergiou was the one who after persistent efforts succeeded recognized as PGI the wines of the region, as it was the first winery in Kastoria, along with another that was created in recent years.		
Insert photos		



MINI REPORT

Mr. Stergiou after worked in various professions he decided to become a wine grower. In 1992 installed his own vineyard over an area of 6,5 ha in Metamorfosi of Kastoria at an altitude of 680 meters. The winery was established in 2000. Mr. Stergiou was the one who after persistent efforts succeeded recognized as PGI the wines of the region, as it was the first winery in Kastoria, along with another that was created in recent years.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The entire crop is organic and he makes green harvest.
- He has one external partner - oenologist and one consultant - agronomist who guide him each one on his field.

COMMERCIAL POTENTIAL

- The 20% of his production is exported to Germany.
- He cooperates with two sellers who are supplying his wine in Athens and Thessaloniki and the rest of it on the market of Kastoria. Sales made via internet reaching 5%.
- He has a website for consumer information and sending newsletter.
- After several attempts managed to bring to market a dry rosé wine which has earned youth between 18- 30 years old.
- He does wine tourism.

TRAINING NEEDS FOR NEW FARMERS

- The young person who wants to cultivate wine grapes first need to study the object.
- Once trained, need to do practical training, to look, learn and experiment with special Greek varieties.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The installation cost estimates ranges from 18000 to 30000 euro per ha.

PROBLEMS FACED BY GROWER

- At the beginning he faced a big problem to be recognized the region of Kastoria as a wine growing zone (all of procedure lasted over 3 years).
- Local authorities do not support the winery through advertising to visitors of Kastoria.
- Now it is very difficult to get somebody new cultivation rights.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH.

- He thinks that for a new producer to install a new vineyard the minimum ha should be 3 to 4 and the ideal 7. All these on condition that it has its own agricultural equipment.
- It is a profitable and promising crop, although the region is dominated by crops of apples and beans, which bring higher profits.
- But to note that turning the time back many years we will observe that in the area always cultivated vines.
- He could cooperate and even making agriculture under contracts with young people who would enter now in the field of viticulture and had them under his supervision.

GENERAL COMMENTS

- His goal is to create a banquet space for presentations and other social events.
- He is interested in partnerships with specific agricultural advisers.

PROPOSALS FOR SOLUTIONS

- To have support in marketing and the website for the better promotion of wines.

- He would be interested in participate as a trainee in viticulture and marketing seminars.
- To prepare a study so that organic wine to get into a special status and protection treatments, due to the lot of snow and low temperatures in the area.
- He believes to be important a soil map so he could learn when to irrigate.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, E. Topalidou	Date: 15/10/2015
Company title: KIKONES-THRACE		Company Type: Personal Enterprise
Address: 5th km. Komotini-N.Sidirochori		Web site: http://www.kikones.gr
Contact person: Vasilis Tassou	Mobile: 6972860271 e-mail: vtkikones@gmail.com	GPS location N- 41.07288217 E- 25.36793936
Main activity sector: Production ☐ Processing ☐ Packaging & Distribution ☐		Other activities: Farmer
Year of establishment: Vineyard 1: 1992 (establishment by father Tassou) Vineyard 2: 2004 Vineyard 3: 2007	Management & ownership: Vasilis Tassou & Melina Tassou	
Annual turnover: o Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 ● 201.000 and over		
Number of employees: 7 (full time) & 15 (part time)		
Level of activity: local/ regional ☐ national ☐ exporter ☐ importer ☐		
If exporter, main markets: USA, Germany, Denmark, Belgium, France, Cyprus (smaller quantities in UK, Luxembourg, Poland)		
If importer, national origin of main imports:		
In Greece, main geographical Markets: all over Greece		
Short company history/ researcher notes: The first vineyard was established by the father Apostolos Tassou in 1992, who set up an association with Tsantalis in the Maronian area. A few years later Apostolos Tassou withdrew from the association and in 2004 his children Melina and Vasilis founded the Domaine Kikones. Domaine Kikones are located in the far north-eastern corner of continental Greece. Melina Tassou is an Agricultural Engineer - Bordeaux trained Winemaker. Vasillis Tassou is an Agronomist - Dip in Food Economics & Marketing, Reading, U.K. He is the Vineyard Manager of Domaine Kikones' organic proprietary vineyards, planted in beautiful Maronia. He is also the Sales Manager of Domaine Kikones.His main concern is to achieve the best quality possible of the grapes, while his first priority is customer service both in Greece and abroad. Domaine Kikones' main concern is to revive the fame of Thracian vineyards in Greece and abroad. Due to this, the winery has been named Kikones, to pay tribute to the first natives who made wine on Thracian land.		
Insert photos  		

MINI REPORT

The ancient tribe named Kikones lived in the region of Thrace and as referred by the Homer, they were famous for the wine production in ancient Greece. Viticulture (and grape growing) was extinguished totally from the region of Thrace in modern Greece. Only a few years ago (in 2004), Vasilis Tassou with his sister Melina established the domain Kikones which is the only winery in Thrace. The philosophy of the winery is that quality wines are produced only by quality grape-fruits.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The vineyard is organically managed
- Treated with special cultural techniques such as vertical shoot positioning which allows more sunlight to reach the lives, helps the vine to achieve greater efficiency of photosynthesis, allows air circulation around the vine, allows the controlling of microclimate around the fruiting zone (minimizes fruit rots and/or increases wine quality).
- Moreover, the method eases the labor-intensive work of many cultural practices such as leaf and shoots removal, cluster thinning etc

COMERCIAL POTENTIAL

- The commercial potential for quality wines is extensive and promising. However, market research is a prerequisite to start a new vineyard.
- Fundamental steps prior vineyard establishment
  - ↘ Knowing the market needs (ensure the promotion of your product because the demand is big)
  - ↘ Quality is the key factor for establishing your product in the market and build a brand name.
- The most important problem faced in entering into the markets was the introduction of their products to the wholesalers and the retailers and convince them to buy them. Entering in the markets is a successive procedure; you introduce your product in the local markets, then nationally and then internationally.

TRAINING NEEDS FOR NEW FARMERS

- Additionally, they need to be well trained and skilled in agricultural techniques (cultural practices, farming systems etc) and they also need to be determined to work hard.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The initial cost which is required for the establishment of a vineyard is big and perhaps the major drawback for entering in vineyard production (approximately 20000 euro/ ha).

PROBLEMS FACED BY GROWER

- Cash flow shortages due to the capital controls.
- No particular problems are faced in the cultivation and managing of the crop.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

" Vineyard is a dynamic crop with great potential for young people who seek to work in agriculture.

GENERAL COMMENTS

" Vasilis has studied agriculture and holds a master degree in master. In addition his father is also an agronomist, so he has a strong background in crop cultivation practices and crop management systems. Therefore, he is an excellent example of a successful farmer who acquired all the necessary knowledge before setting up and starting a business.

" Vasilis believes that small fields are an advantage for Greece because they give a dynamic potential to the vineyard production. He believes that Wineries should be increased; produce quality wine and build-up a brand-name.

" He is not seeking to increase the cultivated are or expand they winery because he believes that major production is linked to the commercialization of the product which means that you need to lower your product quality. Kikones are seeking to establish brand-name products for people who are passionate with wine and can appreciate their product. Moreover, their dream is to establish the Greek variety limnio among the well-known wine varieties worldwide.

PROPOSALS FOR SOLUTIONS

" He would be interested to make partnerships for experimentation with specialized scientists.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 13/10/2015
Company title: Petit Oineonas		Company Type: Personal Enterprise
Address: Trilofos, Thessaloniki		Web site: https://www.facebook.com/petit.oineonas
Contact person: Soufleros Evangelos	Mobile: 2310315294 e-mail: petitoineonas@yahoo.com	GPS location N- 40.27107 E- 22.57565
Main activity sector: Production ☐ Processing ☐ Packaging & Distribution ☐		Other activities: Professor in Dept. of Food Science & Technology, Faculty of Agriculture (A.U.Th)
Year of establishment: 2002	Management & ownership: Management : Soufleros Evangelos Ownership : Christiane-Marie Jardel-Souflerou	
Annual turnover: o Up to 10.000 ☐ 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0 ☐ ☐ ☐		
Level of activity: local/ regional national ☐ exporter importer		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Thessaloniki and North Greece		
Short company history/ researcher notes: Christiane-Marie Jardel - Souflerou was born in France and her family has a vineyard. Her husband, Soufleros Evangelos, is a professor of Oenology in Faculty of Agriculture (A.U.Th).As a result of their properties mentioned above, they had taken the decision to plant a vineyard and make the Domaine Petit Oineonas.		
Insert photos  		

MINI REPORT

Mr. Evangelos Soufleros is an oenology professor in Agriculture faculty of the Aristotle University of Thessaloniki and is distinguished for his love and his professional career in viticulture and enology. When he met and married Christine-Marie Jardel, which because of French origin and the engagement of her family with viticulture, wanted to continue the family tradition. So in 2002 initially installed a small vineyard and later in 2008 created the winery "Domaine petit oineonas".

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The wine is produced with organic method.
- The knowledge and techniques of viticulture and winemaking acquired them in France during his studies.
- He wanted and managed to combine the French varieties by quality potential in Greek markets.
- During installation of the vineyard consulted, for soil analyzes Professor Soil Science Mr. Misopolino, and for the choice of the rootstock and installation planning the viticulture professor Mr. Stavraka.

COMERCIAL POTENTIAL

- His wines are available in Thessaloniki in large cellars, restaurants and through trader in northern Greece.
- He would like to export but he does not have the appropriate contacts.
- He is thinking to create in the near future a distillery.

TRAINING NEEDS FOR NEW FARMERS

- To educate and create a team of professional farmers who will specialize and know how to perform all the viticulture tasks.
- Trained in the field of marketing.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The installation costs for basic requirements, he estimates at 25000 per ha.
- A new vine grower should be install minimum of 2 ha of wine grape and the ideal 10 ha. Concerning the winery should produce the minimum 15000 to 20000 bottles per year and the ideal 100000 bottles per year.

PROBLEMS FACED BY GROWER

- Time consuming procedure for approving vineyard planting.
- Although he would like to buy other ha and expand the vineyard, the owners of the adjacent parcels sell at a very expensive price.
- He does not have farm machinery, therefore forced to rent some for cultivation. But often he cannot find the person or the agricultural machine the moment which needs it.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY &

ATTRACTIVNESS FOR YOUTH

- The area is ideal for new farmers to deal with viticulture due to the particular soil-climatic and topographic characteristics of the area.

GENERAL COMMENTS

- He would like to participate in research programs through the winery or the experimental vineyard, as a trainer and as a partner.
- Where we would like to focus is the development of methods for the production of organic wine with special techniques.

PROPOSALS FOR SOLUTIONS

- He would like someone to support him in the promotion of his wine, but also in training him how to do it.
- He wants to prepare and configure the space to become a visitation winery.
- He would want a soil map to be trained how to irrigate properly.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, E. Topalidou	Date: 27/10/2015
Company title: Ktima Katsarou		Company Type: COMPANY
Address: Krania, Olympous, Greece and panagouli 6, Larissa, Greece		Web site: http://www.ktimakatsarou.gr
Contact person: Euripides Katsaros	Mobile: 6944352618 e-mail: evkatsaros@icloud.com info@ktimakatsarou.gr	GPS location N- 39.92815528 E- 22.55825228
Main activity sector: Production ■ Processing ■ Packaging & Distribution ■		Other activities:
Year of establishment: Vineyard : 1981 Winery : 1987	Management & ownership: Euripides and Dimitris Katsaros	

Annual turnover:
- o Up to 10.000
- o 11.000-100.000
- o 101.000 – 200.000
- ● 201.000 and over

Number of employees: 1

Level of activity: local/ regional ■ national ■ exporter ■ importer

If exporter, main markets: in many European countries (Germany, G.B., Cyprus, Holland), USA, Canada.

If importer, national origin of main imports:

In Greece, main geographical Markets: in big cities of Greeceand tourist places (island)

Short company history/ researcher notes: Domain Katsaros located in Krania of Olympus and the idea was from doctor Dimitris Katsaros. Evidence about local enviable vineyard the ancient, the Byzantine and younger times existed. So the family proceeded to buy this field on the slopes of the southeastern Olympus. The varieties planted initially on research and experimentation, having as objective the production of high quality wine, was Cabernet Sauvignon and Merlot. The first wine was produced in 1987 and was traded in 1989 with 300 bottles. Now the management and ownership belongs to Euripides Katsaros.

Insert photo

MINI REPORT

Domain Katsaros is a small family enterprise, located in the traditional vine country of Krania, Mount Olympos, in Northern Greece. The first vineyard was established in 1981 by the father Dr. Dimitrios Katsaros and his wife. Dr. Dimitrios Katsaros is a doctor in profession but his devotion for wine led him to the decision to establish the vineyard (planted varieties were cabernet sauvignon and merlo) and later on (in 1987) the winery. Wine was produced for the first time in 1987. His son Euripides Katsaros took over the lead of the vineyard and the winery since 2007. The vineyard today covers an area of 9 hectares.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The vineyard is organically managed
- The vineyard is formed by 22 different land plots, which are inclined, located at an altitude between 650-820 meters. The climate is temperate, with cold and rainy winters and summers with large differences between day and night temperatures. This fluctuation in temperatures allows the grape maturation in slow rates.
- Most of the cultivation and growing practices are made by hand. The practice of green harvesting is used in order to control the yield of grapes and the quality of wines.
- Soil-analysis are made every 3 years.
- The planted varieties were selected according to the soil-type and the climate of the area

COMERCIAL POTENTIAL

- 35% of their wine production is exported to USA, Canada, Cyprus, UK, Netherlands and Germany. In Greece their wines are distributed all over the country but mainly at urban centers and touristic places.
- The distribution takes place mainly through wholesalers. Sales through e-commerce are not easy mainly because it is considered as an unfair competition by the wholesalers.
- The winery is open to visits.
- He participates in wine exhibitions (abroad and within the country) in order to introduce and promote his wines to professionals and to the public.
- It is difficult to penetrate into new markets abroad, especially in China and Russia.

- Through the winery web-page he provides information about the winery and his wines. He is also using newsletter for informing the winery-friends about upcoming events, wine-distinctions etc

TRAINING NEEDS FOR NEW FARMERS

- Training both in theory and practice is absolutely necessary for anyone (and especially for young people) who seeks to occupy in viticulture and oenology.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The initial cost which is required for the establishment of a vineyard is estimated approximately at 20,000 euro / ha.

PROBLEMS FACED BY GROWER

- The area of Rapsani is characterized as PDO and this was initially an obstacle for getting the permeation to cultivate varieties other (such as cabernet sauvignon, merlo, cabernet etc) than the ones allowed within the PDO area. However, at the end he managed to get permeation and characterize his products as PGI.
- The bureaucracy for setting up a vineyard is time consuming.
- No particular problems are faced in the cultivation and managing of the crop although organic farming is a risk in case you face disease and insect problems.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

- Euripides believes that wine grapes is a dynamic crop for the area and has potential for young people. However, it is prerequisite to have at least 1.5 hectares (optimum 3 hectares) of planted fields to start, plus the necessary equipment.
- Nowadays, wine grapes and kiwi are the most profitable crops in the area.
- Because of some changes in the consumer habits the white wines are consumed in larger quantities. So, perhaps young people who aim to enter in the sector should think to start with planting white wine grape varieties.

GENERAL COMMENTS

↘ Euripides grew up among the vineyards and he experienced the wine making procedure with his father Dimitrios since his childhood. He studied General Biology and Oenology in Bordeaux at the University of Burgundy. Therefore, he has strong background, theoretical and practical experience in vineyard cultivation and oenology.

↘ The wines are produced exclusively by his own vineyards. He would consider a cooperation with other grape producers only under certain prerequisites (contract farming) and provided that he can trust 100% the quality of the production.

PROPOSALS FOR SOLUTIONS

↘ He is interested in testing new cultivation practices and oenology methods

↘ He would be interested in getting some professionals advice for marketing

↘ There are certain research topics that he would be interested to experiment with, such as (a) the water potential of grapes in relation to the quality of wines, (b) test new Greek varieties (eg. rompola of Kefalonia) in the area of Krania, (c) phenolic maturation (e.g. xinomayro) etc

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, E. Topalidou & C. Vasilikiotis	Date: 9/10/2015
Company title: Ktima Gerovassiliou		Company Type: COMPANY SA
Address: Epanomi 57 500, Thessaloniki, Greece		Web site: http://www.gerovassiliou.gr
Contact person: Evangelos Gerovassiliou	Mobile: 23920 44567 e-mail: ktima@gerovassiliou.gr	GPS location N- 40.45077074 E- 22.9247395
Main activity sector: Production ■ Processing ■ Packaging & Distribution ■		Other activities: Wine Museum and cafe
Year of establishment: Vineyard : 1983 Winery : 1999	Management & ownership: Evangelos Gerovassiliou and others	

Annual turnover:
- o Up to 10.000
- o 11.000-100.000
- o 101.000 – 200.000
- ● 201.000 and over

Number of employees: 42

Level of activity: local/ regional ☐ national ☐ exporter ■ importer

If exporter, main markets: in many European countries (Germany, G.B.), USA, Canada, Japan, Brazil, Australia and Singapore

If importer, national origin of main imports:

In Greece, main geographical Markets: all over Greece

Short company history/ researcher notes: At Ktima Gerovassiliou the vineyard is cultivated with great care and enthusiasm that leads V. Gerovassiliou to constantly research and experiment with Greek and foreign varieties, both well and less known ones. New technological advances blend well with tradition throughout vine growing and vinification processes. The aim is to produce high quality wines from grapes cultivated exclusively in the privately- owned vineyard; wines that carry all distinct characteristics of the specific microclimate *(terroir)* of Epanomi.

Insert photos

MINI REPORT

Vangelis Gerovasileiou descends from an agricultural family. He graduated from the School of Agriculture at the Aristole University of Thessaloniki and was specialized in Oenology, Viticulture, Wine Degustation and Technology of Oenological Equipment at the University of Bordeaux. From 1976 to the beginning of 1999 he worked as an oenologist at Domaine Porto Carras, where some of the most renowned wines of Greece were produced. It was there that he first vinified, revived and rescued from oblivion the long forgotten Greek variety of Malagousia. In 1981, Vangelis Gerovasileiou began the renovation of the family vineyard (about 2.5 hectares) in Epanomi Thessalonikis and established the winery Domaine Gerovasileiou, which is now stretching over 56 hectares.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The vineyard is cultivated according to the standards of an Integrated Management System that aim to produce wine grapes following a certified procedure according to AGRO 2.1-2.2 in order to ensure that all the relevant quality and safety requirements met.
- Currently he employs 42 permanent staff and about 50 people in part-time jobs. Most of the permanent employees in the Domain Gerovassileiou are young people, thus Mr. Gerovassileiou trusts young people and gives them the chance to put their knowledge, passion and enthusiasm into practice.
- He pays special attention in the cultivation of Greek varieties. The Greek variety Malagouzia was first vinified by Vangelis Gerovassileiou.

COMERCIAL POTENTIAL

- About 30% of the total production is exported in 27 countries (Germany, UK, USA, Canada etc).
- Small quantities are sold through the e-shop which hosted in the web-site of the winery.
- Transactions in European Union are easy and this is an advantage for people who set up or start their business nowadays. Exports outside EU are quite difficult and sales representatives are needed for the promotion of products in those countries.
- He participates in wine exhibitions (abroad and within the country) in order to introduce and promote his wines to professionals and to the public. Moreover, another way for promoting his wines abroad is via the demonstration of his wines in restaurants.

- The winery Domain Gerovasileiou is open to visits and it is worth noting mention that he established the Wine Museum in which a collection of viticulture, winemaking, bottling, cooperage tools and a large collection of corkscrews are hosted.

TRAINING NEEDS FOR NEW FARMERS

- The establishment of vineyard for training needs.
- Young people should be scientifically trained (in theory and in practice), study well the characteristics and special features of regions that they are aiming to establish their vineyard.
- Young farmers should be well trained in cultivating methods and techniques in order to produce quality wines from Greek varieties which will have the potential to compete the international wines.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The initial cost which is required for the establishment of a vineyard is estimated approximately at 200000-250000 euro /ha. The cost of buying the land is also considerable.

PROBLEMS FACED BY GROWER

- Bureaucracy, which is time consuming

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

- New farmers should be organized in groups
- The first and the most important step, for a young person who seeks to get involved with viticulture, is to get trained on how to manage the vineyard.
- It is prerequisite to have at least 3 hectares (optimum 5 hectares) of planted fields to start with, plus the necessary equipment. However, the current status of planting rights in relation the high initial cost consist an obstacle for entering in the sector.

GENERAL COMMENTS

- Mr. Vangelis Gerovasileiou is very satisfied by the prices that he gets for his wines.
- He believes that the consumers of his wines are people aged 30-50 years old

- He believes that the interest of the young Greeks in oenology will bring some new insights to the sector in the near future.

PROPOSALS FOR SOLUTIONS

- Training of young people in vineyard management and in other winery sectors through Educational and Training Youth Programs.
- Fertilization soil map

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 22/10/2015
Company title:		Company Type: Family
Address: 1st km Tirnavou - Larisas		Web site:
Contact person: Chaloulis Athanasios	Mobile: 6936518544 e-mail: asepop@asepoptirnavos.gr	GPS location N- 39.72542618 E- 22.29377922
Main activity sector: Production ☑ Processing ☑ Packaging & Distribution ☑		Other activities: President of the association (30 members) and Producer www.asepoptirnavos.gr
Year of establishment: 1998 - 2006	Management & ownership: Chaloulis Athanasios	
Annual turnover: o Up to 10.000 ☑ 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ☑ national ☐ exporter ☐ importer ☐		
If exporter, main markets: No		
If importer, national origin of main imports:		
In Greece, main geographical Markets:		
Short company history/ researcher notes: He is a producer that follows the family tradition. Mister Chaloulis is a producer of wine and table grape varieties, continuing the family tradition that he inherited from his father. He focuses only on the production, meaning that he does not process further or bottle his product. Furthermore he is the president of the association of ASEPOP TYRNAVOU.		
Insert photos  		

MINI REPORT

Mister Chaloulis is a producer of wine and table grape varieties. He is the president of the association of ASEPOP TYRNAVOU. His involvement with the vineyard dates back to his childhood and reaches up today where he continues the family tradition that he inherited from his father.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- He has learned to cultivate the vineyard from his father and although he has not graduated from a technical school, he has his personal experience of so many years cultivated the vine.
- Nonetheless, he has always been receptive to the advices of the agronomist with whom cooperates many years as well with the agronomist of the association.

COMERCIAL POTENTIAL

- In 2002, in consultation with the agronomists of the association, planted “Syrah”, a new foreign variety for the region, and managed to fill the gap market that existed as regards the demand.
- He believes that the government should subsidize programs that will instruct the producers to choose the suitable variety, the best way to cultivate and to impose guaranteed minimum price of the product.
- Finally he notes the problem that the vineyards request for more quantities of grapes than they can produce.

TRAINING NEEDS FOR NEW FARMERS

- New farmers, should go to have a substantial training and then practice in the vineyard

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He thinks that for a new producer to install a new vineyard with wine varieties, the ideal area is 6 to 7 ha and the minimum 4 to 5 ha.
- The installation cost of a vineyard with wine varieties ranges from 10000 to 15000 euro per ha.

PROBLEMS FACED BY GROWER

- Also he has a problem when he needs to uproot old vines to replace them with new ones.
- In recent years there are mycological problems in the vines.
- The majority of consumers ask for white table grapes, meaning white variety grape seed but in the region these varieties become sensitive and vulnerable.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- Revival and production of local varieties and only a few foreign red varieties in case that the agronomists recommended because of demand.
- To take into consideration advices from the older producers and of course the opinion of qualified agriculturists.
- It is a dynamic cultivation with many development potentials and but he would recommended combining the production of wine and table grapes.

GENERAL COMMENTS

- He has all the machinery and the ancillary products but they all need modernization or buy new ones.

PROPOSALS FOR SOLUTIONS

- If he has any problem with his production, he goes to the agronomist of the association and they help him.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, I. Kalfas	Date: 16/10/2015
Company title:		Company Type: Family
Address: Agios Paulos, Halkidiki		Web site:
Contact person: Goulis Nikolaos	Mobile: 6944905648 e-mail: nikos_goulis@hotmail.gr	GPS location N- 40.33909268 E- 23.06262328
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ☐		Other activities: Agricultural supply store
Year of establishment: 1985	Management & ownership: Management : Goulis Nikolaos Ownership : Dimitriou Ioanna	
Annual turnover: ■ Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ☐ national ☐ exporter ■ importer ☐		
If exporter, main markets: Through wholesaler Poland		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Kavala (Wholesaler)		
Short company history/ researcher notes: Goulis Nikolaos planted table grapes because the area of Agios Pavlos (Halkidiki) is a traditional grape - growth area, due to the ideal climate and soil conditions.		
Insert photos 		

MINI REPORT

He is an agronomist and has agricultural supplies store in St. Pavlos - Chalkidiki. He is a professional farmer for 35 years. He first dealt with the table grape in 1985 when he installed the vineyard. A vineyard percentage belongs to his wife, which is new farmer and deals also. The art of viticulture learned it from his father, later on developed it with his studies and today applies that knowledge together with his wife.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- He follows integrated management in the cultivation of table grapes.
- It has all the necessary agricultural machinery and ancillaries needed.
- Criterion for selection of varieties was the knowledge of a variety that thrives in the region.

COMMERCIAL POTENTIAL

- He sells his production to a wholesaler, who exported abroad, mainly in Poland.
- He uses the internet for information only on the agricultural machinery.

TRAINING NEEDS FOR NEW FARMERS

- To have a substantial training of young farmers, not only in theory but also in practice.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION.

- The installation costs for basic requirements, he estimates at 15000 to 20000 per ha.

PROBLEMS FACED BY GROWER

- Restrictions on the distribution of new planting rights.
- Any problem presented has the knowledge and experience to deal with.
- Low price in wine grape

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

- It is a dynamic culture in which many are involved in the area.
- It is sustainable and outweighs over other crops in the region.

- A new vine grower should be install minimum of 10 acres of table grape and the ideal 30 acres.

GENERAL COMMENTS

- His comparative advantage over other producers of the region is that he is a professional agronomist and farmer at the same time and has the appropriate acquaintances to promote all its production

PROPOSALS FOR SOLUTIONS

- He would like to have further counseling knowledge, in case there is a problem he will not know how to cope.
- He would like to make chemical analyzes of soil, water, plant material to have a full knowledge of the field.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 23/10/2015
Company title: Producer – table grapes		Company Type: family
Address: Maronia - Komotini		Web site: -
Contact person: Katsaridis Athanasios	Mobile: 6976006400 e-mail:maronkom@otenet.gr	GPS location N- 41.11834931 E- 25.40274757
Main activity sector: Production ☑ Packaging & Distribution ☐ Processing		Other activities: agriculturist in Winery Tsantali
Year of establishment: 2013	Management & ownership: Katsaridis Athanasios	

Annual turnover:

- ☑ Up to 10.000
- o 11.000-100.000
- o 101.000 – 200.000
- o 201.000 and over

Number of employees: Pruning: 8 for 8 days
Vine harvest: 8 for 8 days

Level of activity: local/ regional ☑ national ☐ exporter ☐ importer ☐

If exporter, main markets: Through wholesaler – Does not know where

If importer, national origin of main imports:

In Greece, main geographical Markets:

Short company history/ researcher notes: He is a professional farmer and technologist agronomist and is working in Tsantalis. He planted 15 acres in 2013 and 40 acres in 2015 of table grapes of the black magic N.

Insert photos

MINI REPORT

Mr Katsaridis is a technologist agronomist and is working in Tsantalis. Having the knowledge from his studies and experience from his work in TSANTALI decided and planted 15 acres in 2013 and 40 acres in 2015 of table grapes of the black magic N variety in the area of Maronia. From 2000 he is a professional farmer.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS.

- The vineyard is conventional. He has 1 tractor with the ancillaries and also a freezer.
- The grape variety that has planted is early and the harvest is the 1st or 2nd fortnight of July.
- He has made by himself the business plan as well as the grower's calendar that he keeps and records everything manuscripts.
- Before installation he made a soil analysis to check the soil fertility and choose the suitable subject.
- In the selection of the variety of grape, besides the precocity and the preference of traders, has played an important role his knowledge of climatic and topographical characteristics of the region.

COMMERCIAL POTENTIAL

- All the grape production is sold to a merchant in Komotini.
- The earliness of the variety helps the producer to achieve best price on the market.
- Before judgment in the selection of grape variety, he contacted dealers of the region to agree the disposal of his production.
- The demand is greater than supply.
- He uses some applications of the smart phone that he has as well the internet to search information relative to his professional interests.

TRAINING NEEDS FOR NEW FARMERS

- He teaches in seminars taking place in the region of Komotini, with topics such as cultivation of wine and table grape and olive growing and in this way educates young people in the region.

- Very essential to train young people in as many cultural practices on the vine and make practice to producers all over Greece.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He estimates that the initial installation cost of a vineyard is ranges from 10000 to 40000 euro/ha.
- The annual maintenance cost is 9000 euro per ha for arid vineyard and 12000 euro per ha for an irrigated one.

PROBLEMS FACED BY GROWER

- He has not faced a particular problem because the vineyard is newly established (2013 and 2015).
- New tax measures will be a problem.
- The large initial cost of installation especially if one wishes to make the vineyard quite contemporary.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FORM YOUTH.

- He thinks that for a new producer to install a new vineyard with table grapes the minimum ha should be 2 and the ideal 10. All these on condition that it has its own agricultural equipment, owned land and based on family labor, with the exception of seasonal workers employment in periods of increased demands at work.
- The demand is greater than supply – production because in the area they do not produce many table grapes , though it is near Kavala where they are taking place many exports on table grapes.
- Therefore exist a gap market and is very promising the occupation with the cultivation of table grapes in the area.

PROPOSALS FOR SOLUTION

- He has not any at the moment.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: E. Topalidou	Date: 19/11/2015
Company title: Producer		Company Type: Family
Address: Ano Archanes, Heraklion- Crete		Web site:
Contact person: Grilakis Kiriakos	Mobile: 6937004770 e-mail:	GPS location N:35.227948 E:25.156853
Main activity sector: Production ☐ Packaging & Processing ☐ Distribution		Other activities: Farmer
Year of establishment: 1980 1990- 1995 : Replanting	Management & ownership: Grilakis Kiriakos	
Annual turnover: o Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: full time: 1(brother) Part time: vine harvest 15-20people for 10-20 days and rest cultivation tasks 4 people for 4 months ☐ ☐ ☐ ☐		
Level of activity: local/ regional ☐ national ☐ exporter ☐ importer ☐		
If exporter, main markets:100% of production, through wholesalers, exported in Germany, Holland, England, Scandinavia.		
If importer, national origin of main imports:		
In Greece, main geographical Markets:		
Short company history/ researcher notes: He is a professional farmer and produces only table grapes and specifically the sultanina variety. The art of viticulture learned it from his father and back in 1980 he made raisins from the grapes.		
Insert photos		

MINI REPORT

He is a professional farmer and produces only table grapes and specifically the sultanina variety. After finishing school and his military service all he wanted to do was to become a winegrower. The art of viticulture learned it from his father and later with his brother they continued the family tradition. He did not stop though there, as he followed the advice of agronomists, participated in seminars and exchanges views with other producers in the region in order to improve his skills.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- He produces 5 ha of sultanina variety.
- All 5 ha are owned, irrigated and help him his brother and the whole family.
- Apart from his family, for 4 months employs 4 people and for other 2 months 3 people as seasonal staff.
- The variety that cultivates had engraft himself on a wild subject
- Soil analysis made during installation and continues to do every three years
- Plant tissue analysis does when a problem appears.
- He updates from internet, newspapers and magazines for agricultural issues.
- He would like in the future to make a packing station so that he could himself sell the product.

COMMERCIAL POTENTIAL

- All his production is sold to a local merchant who exports to countries of Europe such as Germany, Holland, England and Scandinavia.
- The demand is greater than supply and that’s the reason he wants to increase his acreage by 1 ha.

TRAINING NEEDS FOR NEW FARMERS

- He considers that a young farmer should at first study the subject, secondly to learn near to an experienced producer how to manage the vineyard and then start professionally.
- Take advantage of the technology and the internet to promote their products.
- Be informed and advised by agronomists and their trainers.
- Learn to apply new technologies through market research to find the market gaps and possible new markets.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He estimates that the installation cost of a vineyard in the area is 30000 euro per ha and this value will increase if you install an irrigation system and antihail net reaching 40000 euro.
- The cost of fertilizers and pesticides per year stands at 5000 euro per ha, but without included the cost of seasonal employees, oil, agricultural equipment and personal and family work.

PROBLEMS FACED BY GROWER

- At the beginning he could not find a reliable subject that is why he engrafted a wild one.
- The grafting- vaccinations did them all by himself because he could not find anyone to help and guide him.
- The plants of the variety planted purchased them from those who sell reproductive material but many plants already had diseases something that he did not realized.
- Many times the production ranges from 15000 to 32000 per ha due to climate conditions.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY &

ATTRACTIVENESS FOR YOYTH

- He has noticed that after the financial crisis the youth of his area turned to the agricultural sector and more and more professionally engaged in agriculture and particularly in the cultivation of table grapes.
- He highly recommend to all young people in the region to deal professionally with this culture since it is one of the largest regions in producing sultanina grapes.
- He thinks that for a new producer to install a new vineyard the minimum ha should be 1 owned. However if he wishes to reach the ideal level of profit he thinks that requires 2 ha.

GENERAL COMMENTS/OUTCOMES

- Since some of the vines are over 25 years he would like to do a replanting and install anti hail net and apply new technologies.
- The order of priority crops according to the profit, that the farmers produce in the area are the following: table grapes > olive > wine grapes.

PROPOSAL FOR SOLUTIONS

- His biggest problems is to find:
- Certified propagating material guaranteed for its hygiene condition
- Subjects adapted to the climatic conditions of the region
- New local varieties to isolate and multiply with his production.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 14/10/2015
Company title: zeuskiwi		Company Type: COMPANY SA
Address: ZEUS KIWI SA, KARITSA PIERIA 60100, GREECE		Web site: http://www.zeuskiwi.gr
Contact person: Zisis Manossis	Mobile: 6972822051 e-mail: zisis44@yahoo.it zisis.manossis@zeuskiwi.gr	GPS location N-40.17675829 E-22.45140865
Main activity sector: Production ☐ Processing ☐ Packaging & Distribution ☐		Other activities:
Year of establishment: 2000	Management & ownership: Management : Zisis Manossis and others Ownership : many persons	
Annual turnover: o Up to 10.000 o 11.000-100.000 o 101.000 – 200.000 ☐ 201.000 and over		
Number of employees: 15		
Level of activity: local/ regional ☐ national ☐ exporter ☐ importer ☐		
If exporter, main markets: in many European countries (Germany, England, Belgium, Holland)		
If importer, national origin of main imports:		
In Greece, main geographical Markets:		
Short company history/ researcher notes: ZEUS had made a business plan and found that England was a big market, who wanted this specific variety of grapes that until that time all the quantities were imported from USA. The secret of the excellent quality of ZEUS products lies in the idyllic soil and climate conditions of the area as well as the correct and optimum management of cultivation by experienced and specialized personnel.		
Insert photos		

MINI REPORT

The company ZEUS is acclaimed in the export of kiwifruit. Doing research found a lack on the market of England, for a certain period of time, a variety of table grape which was imported from America. Having the advantage of reputation and experience of the company, the soil and weather conditions of the area and creating a perfect business plan, managed to conquer and fill the market gap.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- The company has 15 owned ha and with agriculture under contracts reaches 150.
- They follow integrated management.
- Cooperating farmers are required to follow certain rules, just consult the Zeus and install protective net.

COMMERCIAL POTENTIAL

- The grape is 100% exportable. The largest proportion is introduced in England but also in Holland, Germany, Belgium and Nordic countries.
- 90 % of it is channeled to super market chains of the above countries.
- A company's success is due to the market research but also of knowledge from the company's experience in the field of the distribution of kiwifruit.
- Finally, it is the only one exporting the period November – December.

TRAINING NEEDS FOR FARMERS

- They need education, especially change in mentality and way of thinking of young people and especially young farmers and new producers.
- After training and at their beginnings they should have beside them an agricultural consultant who will inform and support them in every step.
- Be trained to discover distribution channels and how to promote and dispose of the products.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The installation cost estimate to 20000 euro per ha and the company requires from the cooperating producers to place, during the installation of the field, safety net that costs 10000 euro per ha.

PROBLEMS FACED BY GROWER

- There were not farmers in the area who know how to cultivate vines.
- At the beginning faced major problems with the state on planting rights and the selection of the variety.
- The variety was brought from Spain because they did not exist in Greece. They gave it in a nursery garden, which they multiplied and promoted only in Zeus Company.
- The cooperating farmers do not make good use of technology and agrochemicals.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILTY & ATTRACTIVENESS FOR YOUTH

- In the area thrives this specific variety so a new producer who is interested can sign a contract with the company so it is able to support the installation, the education of cultivation techniques and to buy all his production.
- Young people working in business sectors affected by the economic crisis through cooperation with Zeus managed to find their feet and have a good supplemental income.
- A new vine grower with no experience can manage an installation of 1-3 ha, yield from 10 to 15 ton / ha. Unlike an experienced vine grower, with installed protective net can manage 5 -6 ha yield from 18 to 20 tons / ha.

GENERAL COMMENTS

- They make efforts to export to China, but there are many phytosanitary barriers and many procedurals and cooperation protocols, which should be signed by the two states.

PROPOSALS FOR SOLUTIONS

- They would like to be informed of when and how much they can irrigate the vines.
- Be substantiated experimentally the advantages of the use of the net protection to convince the farmers to its necessary use.
- Compose an experiment of a different choice for a plant subject, besides that they already use.
- To investigate how is being affected the coloring of the variety and whether and how it is possible to control and influence it.
- A soil and fertility map of their own area.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 26/11/2015
Company title: G. Katsagiotis		Company Type: Family
Address: Myrtofyto 64007, Kavala, Greece		Web site:
Contact person: George Katsagiotis	Mobile: 6973219081 e-mail: katsagiotis@yahoo.gr	GPS location N- 40.820096 E- 24.197688
Main activity sector: Production ■ Processing ☐ Packaging & Distribution ☐		Other activities: Management & ownership of a Company SA (www.katsagiotis.gr)
Year of establishment: Vineyard : 1982	Management & ownership: G. Katsagiotis	

Annual turnover:
- o Up to 10.000
- o 11.000-100.000
- ● 101.000 – 200.000
- o 201.000 and over

Number of employees: 1

Level of activity: local/ regional ☐ national ☐ exporter ■ importer ☐

If exporter, main markets: Germany, Great Britain, Poland, Finland, Czech Republic etc.

If importer, national origin of main imports:

In Greece, main geographical Markets :

Short company history/ researcher notes: Mr Katsagiotis, had gone to study abroad but because of the sudden death of his father, he come back to Greece and take over the production of table grapes in 1978. In 1981, the company
G. Katsagiotis SA was founded by George Katsagiotis, concerning the grading and packaging of fresh fruit.In 1986 it was built the first privately owned premises of the company based in Myrtofyto, Kavala. In 1996, it was implemented the first program to extend the company's premises. In 2008 it was implemented the second program of extension of premises of the company. The company now has its own space, 12,000 sq.m. , in which there are buildings of 4,500 sq.m.

Insert photos

MINI REPORT

Mr. Katsagiotis is a producer since 1978. At 1981 started processing and packaging four table grape varieties. At 18 he left abroad to study but because of family problem returned and took over the vineyards.

COMERCIAL POTENTIAL

- He exports the 100% of its production through the public limited company that he created in Countries such as Germany, England, Poland, Finland and Czech Republic.
- The criterion of the selection of the rootstock was the soil analysis and the selection of variety was based on the demand from the market.
- Given that the production his 100% exportable he has all the necessary certificates, CIFS / BRC / GLOBAL GAP.
- He exports in large supermarkets in England (tesko) and Germany (enteka).
- The promotion of the product is done through agent (with contract), seeking partnerships.

PROBLEMS FACED BY GROWER

- He did not face particular problems due to the crisis because it has developed partnerships for over 35 years.
- He believes that the Greek state has lost credibility especially in promoting new crops.
- Little clergy - the state is not supportive as far as concerns the taxes.
- At the beginning of his work, 25-30 years back, could not find a refrigerator truck.

PRODUCTION AND TECHNOLOGY IMPROVEMENTS

- He owns 15 ha, of which 80% of the production is Soultanina and the rest consists of Victoria, Grimson and Italiano.
- He holds all agricultural machinery and ancillaries needed a winegrower.
- He made soil analysis in the beginning to decide what subject will put and since makes every 3 years.
- All the fiels are irrigated and uses fertigation.

TRAINING NEEDS FOR NEW FARMERS

- He considers that a young farmer should at first study the subject, secondly to learn near to an experienced producer how to manage the vineyard and then start professionally.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION.

- The installation costs estimated from 20000 euros per ha for the main equipment and reaches up to 50000 ha with shelter and other equipment.

ALTERNATIVE CROP FOR YOUTH – ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH.

- The minimum number of acres in order to start someone this cultivation are 2-3 ha and the ideal 4 ha.
- To have farm machinery and own facilities.
- He considers that it is a very dynamic growing this variety, because it has many nutrients and has an economic surplus value.

GENERAL COMMENTS

- He started from production, passed in processing and exports and created a brant name in the field.
- He also has quality products and achieves this with constant controls by the certifying company.

PROPOSALS FOR SOLUTIONS

- He would like to apply precision farming in the production of table grapes.
- To make soil map of his larger parcel.
- To learn irrigate correctly.
- To operate the vineyard as a pilot for youth education and experimentation for new table grape varieties (US) in the region.

GENERAL COMMENTS

- He started from the production after the processing and then to exports. So he created a Brad Name in the market. Additionally, he has quality characteristics which achieves them with constant controls by the certifying company.
- He would like to apply precision farming in production of table vineyard.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis	Date: 1/12/2015
Company title: Athanasios Sotiropoulos		Company Type: Personal
Address: S. Konstantinos, Achaia, Greece		Web site:
Contact person: George Katsagiotis	Mobile: 6973343945 e-mail: sales@pesunion.gr	GPS location N- 38.13421 E- 22.06180
Main activity sector: Production ☑ Processing ☐ Packaging & Distribution ☐		Other activities: President of the association AGRICULTURAL COOPERATIVES AEGHION SA and Producer
Year of establishment: Vineyard : 1982	Management & ownership: Athanasios Sotiropoulos	
Annual turnover: o Up to 10.000 ● 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 5 part time		
Level of activity: local/ regional ☐ national ☑ exporter ☑ importer ☐		
If exporter, main markets: he gives the 95% of his production to the Association and then exported to Great Britain, France, India etc.		
If importer, national origin of main imports:		
In Greece, main geographical Markets : All over Greece (5%)		
Short company history/ researcher notes: Athanasios Sotiropoulos is a producer of currants (VOSTIZZA P.D.O.). He is the president of the association of AGRICULTURAL COOPERATIVES AEGHION SA. His involvement with the currant because he loved to stay in this area and produce this product.		
Insert photos		

MINI REPORT

As soon as he finished the basic education and military service, he took over the vines from his father. In 1982 made a replanting and started the production of black currants. His love for the vine and the fact that he likes to stay in the province were determining factors for his occupation with agriculture.

PRODUCTION AND TECHNOLOGY IMPROVEMENTS

- He owns 3 ha for growing currants (PDO).
- He is one of the first organic farmers in the region, certified since 1983 by a Dutch company, since he there was no certification in Greece.
- He has all the agricultural machinery needed.
- The choice of the subject was based on the soil analysis and selection of the variety was one way.
- He procured the cuttings from the organization SKOS.
- 30 years after the first installation usually appear wood diseases.
- It is an irrigated cultivation.

COMERCIAL POTENTIAL

- All his production is promoted to the association and from there 97% is exported to 38 countries including the UK (50%), France, India, etc. The remaining 3% is promoted in supermarkets (Masoutis, Sklavenitis, Marinopoulos).
- Raisins are one of the first products exported by Greece and helped after the wars to be back on track.
- The cooperative is making efforts to find new markets such as the United Arab Emirates.
- The price is generally very good and has high profit margins for the producer.

TRAINING NEEDS FOR NEW FARMERS

- Very essential to train young people in as many cultural practices on the vine and make practice to producers in the area.

COST FOR ESTABLISHMENT, ANNUAL CULTIVATION

- He estimates the installation cost at 25000 euro per ha.

- He calculates the cost of maintenance, only for cultivation, fertilizers and pesticides, at 4000 euros per ha.

PROBLEMS FACED BY GROWER

- They face problems that difficult the process of export because of the paperwork of Greece. By contrast, in other foreign countries have not so hard to deal with because of the certificate the have as cooperative.
- Difficulty in finding clergy in the area for install cultivation.
- Arid farmland and sloping ground that want special skills in cultivation.
- There should have been a raisin institute in the region and work with its producers.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY & ATTRACTIVENESS FOR YOUTH

- To become substantial and continuous updating of young farmers.
- To held seminars in the region for continuous update of developments in old and younger farmers.
- To be in constant communication with the agricultural advisor.
- The minimum number of hectares to enter a new farmer in the area believed to be 4 and the ideal 5.
- The cultivation of currants is the first choice of youth in the region, followed by olive and citrus.
- He considers that financial gain is certain of his involvement with the particular crop but also has a high cost of installation and maintenance, and required many hours of work.

GENERAL COMMENTS

- For 10 years they have developed partnerships with educational institutions in order to demonstrate the beneficial properties of currants (super food).

PROPOSAL FOR SOLUTION

- To persuade young people to get involve with the cultivation by motivating them.
- Try different ways of fertilization and irrigation.
- To learn more effective ways of cultivation work due to steep slope in there are.

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PRODUCTION ENTERPRIZE		
Study No & title: #3 - Viticulture, Table & Wine Grapes	Researcher/s: K. Zoukidis, E. Topalidou	Date: 15/10/2015
Company title: Table Grapes		Company Type: Family
Address: Komotini		Web site:
Contact person: Vasilis Tassou	Mobile: 6972860271 e-mail: vtkikones@gmail.com	GPS location N- 41.07288217 E- 25.36793936
Main activity sector: Production ☑ Processing ☐ Packaging & Distribution ☐		Other activities: Vineyard Manager of Domaine Kikones
Year of establishment: 2013	Management & ownership: Vasilis Tassou	
Annual turnover: o Up to 10.000 ☑ 11.000-100.000 o 101.000 – 200.000 o 201.000 and over		
Number of employees: 0		
Level of activity: local/ regional ☐ national ☑ exporter ☐ importer ☐		
If exporter, main markets:		
If importer, national origin of main imports:		
In Greece, main geographical Markets: Kavala		
Short company history/ researcher notes: Vasillis Tassou is an Agronomist - Dip in Food Economics & Marketing, Reading, U.K. He is the Vineyard Manager of Domaine Kikones' organic proprietary vineyards, planted in beautiful Maronia. He is also the Sales Manager of Domaine Kikones. After all this, takes the decision to planted table grapes because he is the only one in the Komotini who do it.		
Insert photos 		

MINI REPORT

Vasilis has studied agriculture and holds a master degree in master. In addition his father is also an agronomist, so he has a strong background in crop cultivation practices and crop management systems. Apart of his occupation in cultivating the vineyards for wine production, Vasilis cultivates table-grapes as well.

PRODUCTION AND TECHNOLOGICAL IMPROVEMENTS

- Two verities of table grapes in an area of 3.2 hectares are cultivated.
- Vasilis is in charge of the vineyard management and about 10 workers are employed during the harvesting period.
- In table wines (in contrast with the wine grapes) fertigation is used in order to increase the production of table grapes.
- Grape harvesting is made twice and the leftovers are sold for tsipouro production.

COMERCIAL POTENTIAL

- The 90% of table grape production is exported through wholesalers which are located in Kavala.
- The rest of the production (10%) is sold for tsipouro production.
- Conventional management is used mainly because organic table grapes are not in demand; the bureaucracy and the extra cost which are involved in the certification of organic products.

TRAINING NEEDS FOR NEW FARMERS

- Young people should be scientifically trained (in theory and in practice) and they should work in the field before the establishment of their own vineyard.
- Vasilis believes that cultivation of table grapes is a very dynamic crop, especially for the particular area of Thrace and he is very willing to help young people who are willing to occupy with the cultivation of table grapes.

COSTS FOR ESTABLISHMENT, ANNUAL CULTIVATION

- The initial cost which is required for the establishment of a table grape vineyard is estimated at about 20,000 euros / hectare

PROBLEMS FACED BY GROWER

- No particular problems faced. The procedure is much more simplified for the establishment of table grape vineyards compared to the wine grape vineyards.
- It was easy to obtain the propagating material.

ALTERNATIVE CROP FOR YOUTH–ACCESSIBILITY &

ATTRACTIVENESS FOR YOUTH

- Vasilis believes that table grape cultivation has great potential for the area of Maronia. The climatic and soil condition in the area are favorable for the cultivation and provided that a young farmer is willing to work, success is guaranteed.
- Vasilis estimates that a new farmer has to enter to the cultivation of grape tables with at least 1 hectare of planted vineyard.

GENERAL COMMENTS

- In the area of Maronia and in general in Thrace there are not many producers of table grapes. This in relation to the demand of table grapes is a great advantage for crop expansion in the area.

PROPOSALS FOR SOLUTIONS

- Research on the propagation material of table grapes
- Fertilization soil map would be very helpful
- Early maturation of grapes would be an interesting research topic. Early maturation would be very helpful for the producers because it would allow the earlier promotion of the fruits in the market.