

OLIVE CULTIVATION IN CRETE AT THE TIME
OF THE OTTOMAN CONQUEST

Evangelia BALTA

*To Father Yorgis Anagnostakis,
priest at Gouves, of Candia*

Our knowledge of olive cultivation in Crete in Ottoman times has so far been based on the texts of travellers and the documents of the *sicil defterleri* which were translated and published by the late Nikolaos Stavriniadis¹. The latter refer mainly to the price of oil in the Candia market and to fiscal ordinances that regulated the conditions of its export. On the contrary, the material in the French archives concerning the conditions of purchase and transport of Cretan oil to markets in France in the eighteenth century, is both richer and continuous. Those studies concerned with oil-production and soap-making in Crete during the Ottoman period rely mainly on the above sources². It should be noted however that, on account of the specific information in the sources, these studies focus their interest on the oil available for trade as an export product or as a raw material for the soap factories.

Investigation of the state of olive cultivation in Crete before its product was made available for trade remains an open question for historiography. This does

¹ N. Stavriniadis, *Translations of Turkish Documents Concerning the History of Crete* (in Greek), Herakleion Crete, vol. 1 (1975), vol. 2 (1976), vol. 3 (1978), vol. 4 (1984), vol. 5 (1985) (in Greek).

² Yolanda Triandaphyllidou-Baladié, *The Trade and Economy of Crete (1669-1795)* (in Greek), Herakleion 1988, p. 133-166 and V. Kremmydas, *The Soap-Factories of Crete in the 18th Century* (in Greek), Athens 1974.

not apply only to Crete but to the whole of Greek lands during the Ottoman period. The existing information on olive cultivation and its place in the agricultural economy of the period has not been gathered together. So a study of the geography of the olive is a desideratum, and any quantitative data gathered on the number of olive trees, the production of olives and of olive oil in Greek lands during the Ottoman period are therefore valuable.

These were the sectors in which I orientated my research regarding Crete. I considered it necessary to examine first the situation that the Ottomans took over when they conquered the island (1645-1669). As is well-known, the economy of Crete in the sixteenth and seventeenth centuries was based on viniculture, as dictated by the colonial policy of the metropolis, Venice, from early on³. Wine was considered to be the island's prime product throughout the period of Venetian rule and was replaced by oil in Ottoman times. This is the view held by P. Masson and Tr. Stojanovitch, and accepted by Triandaphyllidou-Baladié⁴. The last attributes the decline of viniculture firstly to the protracted Veneto-Turkish war, which ended in the Ottoman conquest of Crete, and secondly to the subsequent lack of Ottoman interest in wine. It should be mentioned however that in the late 16th century, according to the report of Alberto Loredan (1590), oil production in Crete was sufficient for the needs of two years and that there were possibilities of increasing production so that in 10-15 years the island would become a second Apulia⁵. In the same year

³ On the colonial policy of Venice towards Crete see F. Braudel, *La Méditerranée et le Monde Méditerranéen à l'époque de Philippe II*, vol. I, Paris 1979, p. 143. On the subject see also the recent studies by M. Gallina, *Una società coloniale del trecento Creta fra Venezia e Bisantio*, Venezia 1989, and U. Tucci, "Il commercio del vino nell'economia cretese", *Venezia e Creta*, Atti del Convegno Internazionale di Studi (Iraklion-Chania, 30 settembre-5 ottobre 1997) ed. Gherardo Ortalli, Venezia 1988, p. 183-206. On Venice's policy towards oil, see Ch. Gasparis, "The olive tree and oil. Production and trade in Medieval Crete (13th-14th century)" (in Greek), *Olive and Oil*, IVth Three-day Workshop: Kalamata, 7-9 May 1993, Athens PTI-ETBA, Athens 1996, p. 151-158. On the wine of Crete, see Fr. Thiriet, "Villes et campagnes en Crète vénitienne aux XIVe-XVe siècles", *Etudes sur la Romanie gréco-vénitienne (X-XVe s.)*, Variorum Reprints 1977, XV, p. 450 and M. Papadakis, "Contribution on the study of agriculture and viniculture of Crete in 15th and 16th Centuries", *Kretologia* 4 (1977), p. 5-25.

⁴ Discussed analytically by Molly Green, "Commerce and the Ottoman Conquest of Kandiye", *New Perspectives on Turkey* 10 (Spring 1994), p. 95-118.

⁵ Maria Dourou-Eliopoulou, "Candia in the second half of the 16th Century based on the unpublished reports of Venetian Government Officials", *Parousia* 7 (1989), p. 52.

the inhabitants of Candia accused the Rectors of Siteia and Hierapetra of illegal trading in olive oil⁶. Consequently, during the Venetian Occupation not only did the production of olive oil in Crete cover local needs, but there were also excellent prospects for its further development.

The present investigation of the state of olive cultivation on the morrow of the Ottoman conquest utilizes the information contained in the censuses conducted by the new masters as soon as their rule began. Specifically, in August 1999 I processed the data in the registers Tapu Tahrir 820 and Tapu Tahrir 825, which are in the *Başbakanlık Arşivi* of Istanbul.

Tapu Tahrir 820 inventories the tax-payers and the tax levied on the production of the villages distributed in 17 *nahiyes*⁷. The tax on cereals, oil and wine was a tithe and is recorded in kind and in monetary value. "They pay a tithe for the oil" is recorded in the *kanunname* accompanying the census, in which the proportion is also defined; tithe and *salariye* corresponded to 2/15 of the yield⁸. Consequently, on the basis of this proportion, it is possible for us to deduce an indicative size of yield.

From this same source I collected the monetary sums that the villagers paid as tax on the wine and the oil they produced. By correlating these sums with the population data and the total tax obligation, it is possible to estimate the percentage participation of the production of these commodities in the income of the Cretan peasantry in the late seventeenth century, at least in those regions where the new masters of the island had consolidated their position.

⁶ *ibidem*.

⁷ This is a 703-page register which Ersin Gülsoy dated around 1650. See Ersin Gülsoy, *Girit'in Fethi ve Adada Osmanlı İdaresinin Tesisi (1645-1670)*, Istanbul 1997, p. XXVI- XXVII (unpublished doctoral thesis, Marmara Üniversitesi).

⁸ TT 820, 4.

Table I. *Tithe on oil and wine*

Nahiye	Popula- tion	oil tax		wine tax		total tax aspers	mean oil tax	mean wine tax
		aspers	%	aspers	%			
Candia	236	9720	8.5	10320	9.0	115000	41.2	43.7
Pediada	3743	123800	9.8	103960	8.2	1268102	33.1	27.8
Monofatsi	2786	64600	6.9	63380	6.7	940703	23.2	22.7
Kainourya	1960	30560	3.9	37120	4.7	783649	15.6	18.9
Pyryotissa	575	15160	6.2	15760	6.4	245100	26.4	27.4
Temenos	793	25900	6.9	28160	7.6	370900	32.7	35.5
Malevizi	800	14600	5.9	15840	6.5	244999	18.2	19.8
	10893	284340	7.2	274540	6.9	3968453	26.1	25.2
Siteia	2041	87580	10.7	69320	8.5	816177	42.9	34
Hierapetra	601	14200	6.9	13280	6.4	205950	23.6	22.1
Merambelou	2065	57800	13.2	41680	9.5	436890	28.0	20.2
Lasithi	710	21400	4.7	27360	6	456000	30.1	38.5
Rizou	2847	87300	8.6	96700	9.6	1009903	30.7	34
	8264	268280	9.2	248340	8.5	2924920	32.5	30.1
Sfakia	759	11800	5.8	12160	6	202000	15.5	16
Vakif villages	2050	70800	9.5	68400	9.1	748550	34.5	33.4
Rethymnon	1718	49940	7.9	53920	8.5	632000	29.1	31.4
Mylopotamou	2824	69440	8.6	61072	7.6	802500	24.6	21.6
Hagh. Vasileios	296	13280	8.1	14600	9	163000	44.9	49.3
Amari	2022	54920	7.5	55680	7.6	727900	27.2	27.5
	6860	187580	8.1	185272	8	2325400	27.3	27.0
Chania	1295	55440	10.4	41600	7.8	534910	42.8	32.1
Apokorona	1299	28400	5.7	31740	6.4	494400	21.9	24.4
Kissamo	2340	56320	6.5	56040	6.4	869950	24.1	23.9
Selimou	887	51080	9.1	45520	8.1	562000	57.6	51.3
	5821	191240	7.8	174900	7.1	2461260	32.8	30.0
TOTAL	34647	1014040	8.0	963612	7.6	12630583	29.3	27.8

We observe that at the level of *livas* the percentage tax on oil exceeds by a small margin the corresponding tax on wine. Consequently, already in 1650 –if we accept this as the date of the account– the results of the Serinissima's policy of disseminating olive cultivation were beginning to show. Photis Baroutsos is

right in arguing that the Cretan olive grove was flourishing before the outbreak of the *Guerra di Candia*⁹. Well known is the Venetian Decree of 1623 which emphasizes that in order to avoid her dependence on other countries, the Serenissima should take advantage of the suitability of the soils in its possessions for the propagation and proliferation of the olive tree¹⁰. This is the period in which Corfu turned towards olive cultivation. According to Ph. Baroutsos, it is not unlikely that there was a change in land use in Crete at this time, particularly since this island was an exporter of oil –with tendencies to increase– from the early sixteenth century; indeed, he notes that if economic incentives existed, then the cultivation of the olive possibly developed at the expense of the vine. This transformation continues, of course, to be a hypothesis, since no specialist studies have been made of the issue. Nevertheless there is one testimony on the turn towards olive cultivation in Crete from the late sixteenth century, in the report of the *provveditore generale del regno di Candia*, Zuanne Mocenigo¹¹. This is noted by Molly Green in her study¹². The *provveditore generale*, commenting in 1589 on the poor yields of cereals in Crete, notes the following:

The most important cause of the reduction in grain-growing over the past years was, undoubtedly, the low price of grain and the lack of demand for it. On the contrary, wine, which is exported to various lands, sells at good prices, and consequently everyone takes care to plant vines. Today, if this state of affairs changes so that the [demand for] wines falls and the price of grain rise, it is obvious that grain-growing will increase as much as vine-planting has already increased and as much as the planting of olive trees is apparently increasing now. This planting of olive trees was increased after the prohibiting of viticulture and they continue to increase in such a way that I am afraid the need will arise to take measures on this issue, that is to halt the planting of olive trees, because otherwise this will end up to the detriment of

⁹ Ph. Baroutsos, "Per il viaggio de ponte, Cretan wine beyond Gibraltar, 16th century)" (in Greek), *Proceedings XI Symposium of History and Art* (Monemvasia 23-25 July 1998), in press. I wish to express my gratitude to the author for allowing me to consult his study prior to its publication.

¹⁰ M. Constantini, "The mercantile policy of Venice towards its possessions in the Eastern Mediterranean" (in Greek), *Proceedings of the International Conference Corfu, a Mediterranean Synthesis: Insularity, Networks, Human Milieux, 16th-19th c.*, Corfu 1998, p. 76.

¹¹ S. Spanakis, *Monuments of Cretan History* (in Greek), vol. I, Herakleion 1940, p. 185.

¹² Molly Green, "Commerce", *op. cit.*, p. 103.

grain-growing, exactly as happened with viticulture. Because today they are planting olive trees not only in other good fields, but even in the *soccori*, which are the best of all, primarily in the province of Siteia.

There is thus no doubt that the Cretans had already turned to olive cultivation in the closing decades of the sixteenth century and register TT 820, which was compiled in the years of the Cretan War, verifies this turn with numbers. Examination of Table I shows that the percentage of tax on oil is higher than that on wine in 10 out of the 22 administrative districts covered by the census. The deviation observed in the values of the two percentages in the *nahiyes* of Pediada, Siteia, Merambelou, Mylopotamou, Chania and Selimou points to their development into olive growing regions in the following years.

According to the data in the Ottoman register TT 820, the oil production of Crete was 190,132.5 measures; the source notes that one measure of oil is priced at 40 aspers. The 'measure' should be identified as the *mistato*, which was used for measuring oil and wine from the years of Venetian Rule and was of capacity 10 okas and 9-12 okas respectively, depending on the region¹³. Consequently the oil production of the island reached 1,901,325 okas, that is about 2,500 tonnes¹⁴.

The second document I studied, TT 825, is a register made for taxation purposes, immediately after the Fall of Candia¹⁵, in which the inhabitants of East Crete and their property, that is the fields, vineyards, orchards, gardens, olive trees owned by each villager are recorded in minute detail. This census of the land property of the inhabitants of the village is followed by information on the overall area of cultivated land (fields, vineyards), the area of uncultivated land –which was also taxed– and the number of olive trees. It concludes with the taxes reckoned in kind and in monetary values.

The importance of this particular source as well as the difficulties encountered in reading it were mentioned in the late nineteenth century by

¹³ N. Stavrinidis, *Translations, op. cit.*, vol. I, p. 5.

¹⁴ E. Gülsoy estimates 185, 654 measures or 1, 904, 067 litres. See E. Gülsoy, *op. cit.*, p. 243.

¹⁵ For details on the dating of the register see Molly Green, *Kandiye 1669-1720: the Formation of a Merchant Class*, 1993, p. 166 n. 17 (unpublished Ph.D., University of Princeton). See also E. Gülsoy, *op. cit.*, p. XXVII-XXVIII.

Andreas Androulidakis, a Cretan literatus, Secretary General of the General Administration of Crete and later Governor of Samos. He was the first to publish in Greek a study of the Ottoman taxation system in Crete¹⁶. In his short essay he writes:

These cadasters have an historical importance whose significance should not be underestimated, since apart from the description, albeit incomplete, of the fields, both public and private, it is possible to acquire from the two long preambles at the beginning of them, exact knowledge of the taxation system introduced on Crete in the first years of its conquest, and of the reforms subsequently introduced, as well as of the exemptions, through which this Great Island henceforth became a privileged province of the Ottoman Empire.

For this reason I considered it good to publish various interesting data extracted from the said cadasters, which kept in Candia for over two hundred years, were unknown to the people of Crete and particularly to the Christians, since they are written in the Turkish language, of which few Christians in Crete have knowledge, and in old Turkish script, so illegible and cryptic (in a note he adds: This kind of script is called *siyakat* by the Turks and has its own special, alphabet) that even of those Ottomans who knew the language well, few were able to read it.'

Androulidakis-Kopasis mentions that a census was made of the 'taxable population and the lands subject to taxation were recorded after the conquest of Crete'¹⁷ and that 'the first cadaster was prepared in two volumes, one of which was lost, where and when is unknown'. The one volume that survived in his day contained 'the inventory of those properties lying in the districts of Pediada, Merambelou, Rizou, Malevyzi, Kainouryo, Siteia, Hierapetra, Mesa Lasithi,

¹⁶ Andreas Androulidakis, *The Taxation System Introduced in Crete During the First Years of Its Capture by the Turks* (in Greek), Chania 1882 . I am very grateful to my colleague Kostas Tsiknakis for his willingness to provide me with a photocopy of this rare pamphlet, which I had been seeking for years. Extensive excerpts from this booklet are published by N. Stavrakis, *Statistics of the Population of Crete*, (in Greek), Athens 1890 (reprint by N. Karavias 1978), p. 149-152. On Andreas Androulidakis-Kopasis' work as an author see J. Strauss, "The Millets and the Ottoman Language: The Contribution of Ottoman Greeks to Ottoman Letters (19th-20th Centuries)", *Die Welt des Islams* 35/2 (1995), p. 240-243.

¹⁷ It is noted in the *kanunname* accompanying census TT 825 (205) that a census was made of the population liable to harac and a census of the taxable land-holdings. On the publication of the said *kanunname* see below. It seems that there were also *kanunnames* in the copy seen by Androulidakis-Kopasis in Chania, because this is implied by the phrase "it is possible to acquire from the two long preambles at the beginning of these, exact knowledge of the taxation system introduced on the island in the first years of its conquest ...". See A. Androulidakis-Kopasis, *op. cit.*, p. 3.

Temenos, Pyryotissa and Monofatsi¹⁸. Antonis Sifakas¹⁹ refers to the fate of this codex in one of his studies, declaring that it existed until 1898 and was destroyed by fire, in the mansion housing the General Administration of Crete, in Chania. Sifakas also notes that it included the districts of Pediada, Temenos, Malevizi, Pyryotissa, Kainouryo, Monofatsi, Rizou, Mesa Lasithi, Merabello, Hierapetra and Siteia. By cross-checking this information I deduced that the codex to which the two nineteenth-century scholars refer was the copy of the original register which is nowadays kept with the cote Tapu Tahrir 820 in the Presidential Archive of Istanbul.

The second volume of the cadaster, the one already lost from the Archive of the General Administration of Crete in Androulakis-Kopasis's day, is a copy of the register Tapu Tahrir 822, which I did not manage to study during my three-week mission to the Ottoman Archive of Istanbul. It is of the same type as TT 825 and includes the livas of Chania and Rethymnon. that is the west part of Crete²⁰. The processing of the data in this register would of course have given a full picture of the geography of the olive tree in newly-conquered Ottoman Crete²¹. For this reason the present article should be considered a preliminary study, the aim of which is to point out the possibilities of the sources and the

¹⁸ A. Androulidakis-Kopasis, *op. cit.*, p. 10.

¹⁹ Antonis G. Sifakas, "The taxation system introduced in Crete under the Turks" (in Greek), *Annual of the Society of Cretan Studies* 3 (1940), p. 166, describes the information-yielding potential and comments on the importance of this cadaster as a historical source. I yield to the temptation to cite the relevant excerpt: "In conclusion I remark that these cadasters were compiled mainly in order to facilitate the collection of taxes, and consequently neither the locations of the various fields nor the boundaries limiting them are described in these, and that these were therefore incomplete, and that it was impossible apart from the above significant information concerning the taxation system they contained, and that was unknown until the publication of the relevant study by Andreas Androulidakis, to be used also as a guide to find a) the number of Muslim and non-Muslim property owners in that period, from which it would be possible to estimate approximately the population of the island then, because the books of the census made of the taxable population of the island have not survived: b) the area of land-holdings then cultivated and the number of fruit-bearing trees, and it is therefore impossible to deduce also the state in which local agriculture was then, and c) the amount of the taxes collected by village, by province and by the whole island", see *ibidem*, p. 173.

²⁰ E. Gülsoy, *op. cit.*, p. XXVII.

²¹ E. Gülsoy gives in his thesis the total numbers of olive trees in the livades of Candia, Siteia, Chania and Rethymnon. According to his calculations, the total of olive trees on the island, on the basis of the two registers, was 666, 105, see *ibidem*, p. 224.

prospect of results, so that a research project can be funded to complete the work begun here.

I close this excursus concerning the content of the two registers compiled after the Fall of Candia and return to the census of East Crete as presented in TT 825, in order to examine the picture of olive cultivation in this part of the island in 1670, the time when the Ottomans succeeded the Venetians²². As mentioned above, the number of olive trees in each village was recorded. It is therefore possible for us to present graphically the spatial diffusion of the olive tree in this period as well as to estimate approximately the production of oil and to correlate it with the production of cereals and viticulture. The testimony of the Ottoman registers on the number of olive trees in this early period is invaluable, particularly our only other information on the number of olive trees in Crete is for the late nineteenth century. According to Androulidakis-Kopasis's estimates, there were 6,000,000 olive trees on the island in the late nineteenth century²³, while the number had reached 8,000,000 by the early twentieth century²⁴.

A total of 255,686 olive trees is inventoried in the 11 *nahiyes* included in TT 825²⁵. But the information in this register does not stop at the number of trees. Noted alongside is the oil production (*mahsul*) in each village, the result of multiplying the number of trees by five. Consequently the Ottoman state had estimated the mean oil yield per tree as 5 okas and the tax that corresponded to 1/5 of the production was 1 oka of oil. Also entered unflinchingly in the register is the monetary value of the tax, determined by the taxation price of the oka: 3 aspers. The ratio of tax to production, one oka to five, is also entered in the kanunname that accompanies TT 825 and which was published by Ö. L.

²² The invaluable information on the population and the crops cultivated in the villages recorded in the census will be presented in a study being prepared by the author.

²³ The information is drawn from the doctoral dissertation by A. Nukhet Adıyeko, *Osmanlı İmparatorluğu ve Girit Bunalımı (1896-1908)*, Smyrna 1994, 116 ff., which will soon be available from Türk Tarih Kurumu publications.

²⁴ I. Kokkinakis, "Coin and society in Crete (1899-1906)" (in Greek), *Historika* 13, fasc. 30 (June 1999), p. 95.

²⁵ According to E. Gülsoy's calculations, the olive trees in the provinces of Candia and Siteia numbered 160, 430. See E. Gülsoy, *op. cit.*, p. 244 (Table XLII).

Barkan²⁶. The text of this fiscal legislation entered in a religious judiciary codex in Candia was translated into Greek by N. Stavriniadis in 1947²⁷. The tax of one oka of oil per tree seems to have been levied until 1705, when a new census of the island was carried out²⁸. Then the peasants were obliged to pay one-seventh of the yield. This information is drawn from a firman of 1711, which was entered in the *sicil defter* no. 2 in the Turkish Archive of Herakleion²⁹.

So on the basis of the data in TT 825, I relied on the average production of five okas per tree –which was accepted by the Ottoman state– in order to estimate the volume of oil produced in the administrative provinces of Candia and Siteia.

Table 2: *Olive trees and oil yields in East Crete*

Nahiye	olive tree	oil yield
Pediada	22.091	110.455
Monofatsi	6.270	31.350
Siteia	27.051	135.255
Hierapetra	78.017	390.085
Lasithi	138	690
Temenos	622	3.110
Pyryotissa	11.437	57.185

²⁶ O. L. Barkan, *XV ve XVIinci As_rlarda Osmanl_ _mparatorlu_unda Zirai Ekonominin Hukuki ve Mali Esaslar_, I: Kanunlar*, Istanbul 1943, p. 350-353. According to the text of the kanunname, the land-holdings of Crete were considered *araz-i haraciye* and the Ottoman state collected one kile for every five of their incomes. On the vineyards they imposed *harac-i mukata'a* of 120 aspers per *tzerip* (=60 square cubits). Comments on and an interpretation of the fiscal ordinances of the text of the kanunname are given by Molly Green, *Kandiye, op. cit.*, p. 76 ff. The transcription of the kanunname, excluding the introductory text which is in Arabic, is published without reference to Barkan's publication of it, by E. Gülsoy, *op. cit.*, p. 266-268.

²⁷ N. Stavriniadis, *op. cit.*, vol. I, 307-311.

²⁸ This census (H 1117) is kept, like the previous one of 1080 (1671), in two volumes in the Archive at Ankara (Tapu ve Kadastro Genel Mudurlu_u): The register Tapu Kadastro 1 includes the livas of Chania and Rethymnon, and Tapu Kadastro 4 the livas of Siteia and Candia.

²⁹ S.N. Stavriniadis, *op. cit.*, vol. III, p. 377-378.

Malevizi	2.533	12.665
Merambelou	64.139	320.695
Rizou	30.231	151.155
Kainourya	13.157	65.785
TOTAL	255.686	1.278.430

According to my calculations, the production of olive oil in East Crete on the morrow of the fall of Candia was around 1650 tonnes. This figure is an accounting estimate of the production for taxation purposes only, which means that the assumed 1650 tonnes was the minimum production that was used as a basis for collecting the tax. It is known that the olive tree gives a good yield of oil every other year and what interested the Ottoman state was collecting at least one oka per tree.

The census of the land property of the peasants in Pediada and Malevizi in the province of Candia, and Merambelou and Hierapetra in the province of Siteia (see Appendix) shows clearly that in the villages of the liva of Siteia, where plantings were made from the mid-sixteenth century –according to the testimony of the provveditore generale Zuanne Mocenigo, there was systematic cultivation of the olive in olive groves, as opposed to dispersed trees. On the contrary, in Pediada and Malevizi, villages renowned for their vineyards and wine production in the period of Venetian Rule, there were few to hardly any olive trees. The following table presents the total numbers of population and olive trees in the four districts selected.

Table 3: *Ratio of olive trees per inhabitant*

Nahiye	inhabitants	olive trees
Pediada	8.657	22.091
Malevizi	2.412	2.533
Merambelou	5.206	64.139
Hierapetra	4.292	78.017

To summarize, the Ottoman registers examined in this preliminary study not only provide an *ad hoc* description of the particular time they were compiled, but also permit us to follow the development of olive cultivation over time. They give us the possibility of evaluating the scattered information on olive cultivation in the years of Venetian Rule or the data on the production and exports of oil in the eighteenth century. In other words, the processing of the two registers of 1671 as well as the corresponding ones of 1705 is an essential precondition for furthering our research on the history of olive cultivation and oil production in Crete during the Ottoman period.