

**Title**      **The Evolution of Malta's production of Olive oil from Antiquity to-date.**

Student name and surname	Joanne Gatt
Student ITS number	1901503/1

HND in Tourist Guiding  
January 2023

## Abstract

<b>Author</b> Joanne Gatt		<b>Date – January 2023</b>
<b>Programme Level – HND</b>		
<b>Research/Project Title</b> The Evolution of Malta's production of Olive Oil from Antiquity to-date.		<b>Number of Words:</b>  4,814
<p>Various artifacts and olive press machines found at archaeological sites abroad and even in Malta, give evidence of the importance of this trade for the Roman Empire. Archaeologists argue that olives have been domesticated in the Mediterranean basin since circa 4000BCE. However, the process of pressing olives to extract the oil, is currently documented not earlier than 2500BCE. The significant increase in olive oil production is thought to have been brought about by the Romans. This study will focus on the history of the production and consumption of olive oil in Malta during the times of the Romans and the changes and progress achieved in oil extraction techniques to-date. The information gathered in this study will be used to contribute further to the knowledge on the topic of Olive Oil production on the Island and specifically in the Village of Zejtun, and to explore the fact that despite its small size, Malta might have exported its own olive oil.</p>		
<b>Keywords</b> Olive oil, Roman villas, Zejtun.		

## Declaration of Authenticity



**Student Name and Surname:** Joanne Gatt

**Student ITS Number** : 1901503/1

**Programme** : HND in Tourist Guiding

**Research Title** : The Evolution of Malta's production of Olive Oil from Antiquity to-date.

### Declaration:

I hereby declare that this research study is based on the outcome of my own research. I, as the author, declare that this research study is my own composition which has not been previously produced for any other qualification.

The research study was conducted under the supervision of Mr. Vincent Zammit.

*26.01.2023*

---

Date

*Joanne Gatt*

---

Student's Signature

## **Acknowledgements**

I would like to dedicate this essay to my husband Chris, daughter Erika, family and friends who have been of great support all throughout this course.

I would also like to express my deepest gratitude to my supervisor Mr. Vincent Zammit for his support and mentorship throughout this study.

**And a special thanks also goes** to Mr. Ruben Abela o.b.o. *Wirt iz-Zejtun*, who has patiently answered a lot of my questions about the Zejtun Roman Villa; Mr. Adrian Galea, Head of School – St. Thomas Moore College Zejtun for letting me use one of the classrooms for my Long-essay tour presentation, and last but not least, Mr. Karmenu Desira from Ta' Katrina for hosting my group for an olive oil tasting session.

## Table of Contents

1.1	Research Background .....	2
1.2	Research Aim, Objectives and Hypothesis or Question.....	2
<b>2.</b>	<b>Literature Review .....</b>	<b>3</b>
2.1	Roman Villas in the Maltese archipelago .....	3
2.2	Houses beyond Melite .....	4
2.2.1	Agricultural Villas .....	4
2.3	Zejtun Roman Villa .....	4
<b>3.</b>	<b>Methodology .....</b>	<b>5</b>
3.1	The role of the agrarian villa. ....	5
3.2	Zejtun, its environs and toponomy.....	6
3.3	Transportation for export. ....	7
3.4	Production after Byzantine rule. ....	8
<b>4.</b>	<b>Results, Analysis and Discussion .....</b>	<b>9</b>
4.1	Table 1. Past and present production.....	10
4.1.1	Analysing the preceding table - Productivity.....	11
4.1.2	Analysing the preceding table - Export.....	11
4.2	Present day cultivation.....	12
<b>5.</b>	<b>Conclusions. ....</b>	<b>12</b>
	<b>Reference list: In-Text and End-of-Text.....</b>	<b>13</b>
	<b>Appendices .....</b>	<b>14</b>
	<b>Appendix 1: Location of the olive pressing equipment and farms in the Maltese islands.....</b>	<b>14</b>
	Appendix 2: HND TG Long Essay Tour Itinerary - <a href="#">Malta's Liquid Gold</a> .....	15

## **1. Introduction – The Olive tree in a Historical context.**

Although its use may have begun even earlier, the cultivation of the olive as a food and oil source is deeply entrenched in the beginning of farming at the western margin of the Fertile Crescent. Ancient Egypt, Greece, Phoenicia, and Rome all had highly sophisticated systems for growing and processing olives. The history of the olive tree is obscured by the growth of the Mediterranean civilizations, which over thousands of years ruled human destiny and left their mark on Western culture.

“In Pliocene sediments at Mongardino in Italy, fossilized olive leaves have been discovered. At the Relilai snail hatchery in North Africa, Upper Paleolithic layers have been uncovered along with fragments of wild olive trees and stones have been discovered in Spanish excavations from the Chalcolithic and Bronze Ages. Thus, the olive tree has been around since the 12th millennium BC. The olive was introduced to the Greek mainland between the 14th and 12th centuries BC, where cultivation increased, and it eventually gained significant importance in the 4th century BC when Solon issued laws governing olive planting”, (International Olive Council). The Phoenicians first began spreading the olive throughout the Greek isles in the 16th century BC. The olive tree began to spread over the Mediterranean nations in the sixth century BC, reaching Tripoli, Tunis, and the island of Sicily. The Phoenicians brought olive growing to Spain circa 1050 BC, but it wasn't until the arrival of Scipio (212 BC) and Roman administration that it became very significant (45 BC). Olives took over a sizable portion of the Baetica valley after the third Punic War and began to spread to Portugal and other central and Mediterranean coastal regions of the Iberian Peninsula. The Arabic language is the source of the words for olive (aceituna), oil (aceite), and wild olive tree (acebuche) in Spanish, Portuguese, and other languages. The Arabs took their variety with them to the south of Spain and had a significant impact on the spread of cultivation.

Olive trees were brought to Malta by Phoenician Sea traders in the seventh century BC. “The Phoenicians were probably the first to introduce systematic cultivation for food and oil in the Maltese Islands, a practice continued by the Romans”, (Buhagiar, 2020). Due to their significant economic importance during the Roman and Byzantine periods, olive trees continued to flourish. Ancient Maltese landscape was nearly entirely covered in olive trees. Pliny the Elder, a Roman naturalist and author, made mention of how many miles he had travelled while strolling through the Maltese Islands countryside under the shade of olive trees.

## **1.1 Research Background**

The number of olive oil processing facilities identified is unquestionably substantial given the limited size of the islands, and it seems reasonable to suppose that there are more out there that have either already been destroyed or are still undiscovered. The magnitude of some of these agricultural crops and the significant amount of industrial machinery that has been thus far documented lead to two preliminary interpretations: the first is of a general ecological character, while the second is merely economic. The frequent occurrence of these complexes suggests that olive tree agriculture was widespread on the islands, much more so than it is now. “One of the most striking aspects of the Maltese archaeology of the Roman period, is the comparatively large number of villas or rural houses on the Maltese archipelago”, (Bonanno, 1977) – see *Appendix 1*. It also suggests that the production of the olive and its by-products contributed significantly to the Maltese economy. From an economical perspective, it is unclear if production was meant to meet only local demands or if there was enough extra to export this liquid gold.

## **1.2 Research Aim, Objectives and Hypothesis or Question**

The objective of this study is to discuss the relation between the number of Roman Villas in the Maltese archipelago, on such a small territory, and their contribution in the industrialization of olive oil production in antiquity, when this activity was at its peak. “The expansion of Villas in the Mediterranean was an important aspect of Roman economic presence and organization to the supply of food for cities and armies”, (Marzano & Metraux, 2018). So, what was Malta’s role in this expansion? Was the production, big enough to support the exportation of “Malta’s green gold?”. Malta’s location along Roman trade routes, especially the one connecting Rome to Carthage, must have been crucial for the creation of market-oriented olive oil production. “Which raises the question, if the allocation of a large part of the island’s territory of a small archipelago, was a calculated strategy, directed towards external markets”, (Davide Locatelli).

## **2. Literature Review**

Olives and olive oil were a staple diet for the ordinary populace in ancient Greece and Rome. The olives themselves or their products could be maintained for a long time without deterioration because they are rich in oil and antioxidants. In addition to being used as food, olive oil also had a variety of additional purposes, such as in soap, skin lotions, perfumes, and therapeutic ointments for conditions like excessive sweating, stomach problems, and hair loss. For lamp illumination, fuel, or lubrication, rancid oil and oil made from spoiled or fallen olives were both employed. All these applications substantially enhanced both personal and public life, which had a tremendous impact on the quality of human life. "It is therefore no surprise that olive oil became an important item of commerce, with tax payable to Rome, either in kind, or from the revenues generated from its sale", (Buhagiar, 2020). Olive farming in Roman Malta is tangentially related to villas, where, for some at least, a portion of the complex acted as both a place of abode and an agricultural enterprise or factory. The proof comes from artifacts connected to machinery used to crush olives and extract oil, some of whose more resilient components have endured the test of time and been kept for posterity.

### **2.1 Roman Villas in the Maltese archipelago**

The Romans encountered a wide variety of climates, topographies, and indigenous traditions in their quest to rule over Europe and the Mediterranean region, but they also brought with them some universal ideas about what houses in urban areas, rural areas, and coastal areas should look like in terms of amenities and decoration. In Roman times, only Malta (Melite), the bigger of the two Islands that make up the Maltese archipelago, was completely populated. Though less developed than the Island of Gozo, sometimes known as Gaulos, the two islands collaborated to establish independent administrative units within the Province of Sicily. While these are urban domus rather than villas, notable buildings have been found during archaeological investigation in Melite, the bigger island's principal town in Roman times. The most magnificent of these houses (the Domus of Rabat) clearly had the appearance of a villa suburbana due to its near-suburban environment, vistas, plan, and extremely excellent furnishings and goods.



## 2.2 Houses beyond Melite

Beyond the city, the entire Island of Melite was marked by various-sized properties, with agricultural activity concentrated on about a score of well-built villas of various sizes and complexity dispersed throughout the Maltese landscape, some on a sandy shore at the water's edge, others in various inland settings to take full advantage of the regional hydrology and topography. We are unaware of the names and places of origin of the owners and occupants of these homes. Their proprietors were unquestionably a cut above the average person who resided in mud-brick homes in a city or the country.

*“In Roman Malta, there were primarily two sorts of villas: the simply residential one, designed for the owner's pleasure (otium), and the agrarian villa, which combined a major portion of the residential area (pars dominica or pars urbana), with an area largely used for agricultural operation (pars rustica). (Bonanno, 2018). The villas in the Maltese archipelago are huge while not being as luxurious as those elsewhere. Both the owners and their slaves had plenty of living space.*

### 2.2.1 Agricultural Villas

In the Maltese archipelago, agricultural villas are much more prevalent than residential ones. The better-preserved ones contained rooms for living, but the presence of one or two pieces of the machinery for pressing and producing olive oil distinguishes the home as a villa. The anchoring counterweight stones for the press or the mill's basin (*trapetum*), used to separate the olives' pulp from their stones, both remain in place due to their size and weight. Three examples of agrarian villas can be used to demonstrate them: the biggest and most intricate (San Pawl Milqi); the one with the most distinctive characteristics (Tad-Dawl); and the villa in Zejtun.

## 2.3 Zejtun Roman Villa

On the highest point of a long, relatively level ridge that spans for nearly a kilometre, the remnants of the Zejtun Roman Villa are located. This observation aims to consider the potential factors that went into the villa's location selection. But one should also consider additional factors and limitations that might have influenced this decision, such as who owned the property, whether there were water supplies nearby, and whether a pre-existing structure might have existed. *“All three Roman agricultural villas in Malta that have been excavated to modern archaeological standards since the beginning of the twentieth century, have provided important evidence of occupation prior to their existence in Roman times. Malta had been taken over by the Romans in 218 BCE from the Carthaginians whose ancestors, the Phoenicians had occupied the Island since the late eight century BCE.”, (Bonanno, 2018). In fact, a cooking pot fragment discovered in 1976 at the Zejtun Roman Villa contained an inscription honouring*

*Ashtart* that was comparable to those discovered in the nearby *Ashtart/Juno* shrine, which is located about a mile away. Both the Zejtun site and the Punic sanctuary include dedicated ceramics, which shows that the farm and land may have belonged to or were managed by the religious center.

### **3. Methodology**

The focus of this research is based on olive oil production in Malta from antiquity to-date. The following sub-sections include the procedure used by the author in an attempt to answer the question of whether there was enough production of olive oil on the Maltese Islands to be exported to other parts of the Roman Empire, with specific . This study employs a wide array of bibliographic literature from various academic sources and local historians who have studied archaeological sites on the Maltese Islands where artifacts related to this subject have been found, both on land and at sea.

#### **3.1 The role of the agrarian villa.**

This study first assesses the relationship between the rural Roman villa and the role it played in the production of olive oil. The farmhouse villas in Malta and Gozo and other archaeological findings suggest that agricultural exploitation played a significant economic role. The culture of olive trees, which was likely the principal crop, required constant attention because the island's unpredictable rainfall made it sustainable only over the long term, thus there must have been some initial investment in Maltese agriculture. During the early imperial period “the most important technological change affecting agricultural productivity, involved the dissemination of olive and wine presses throughout the Roman Mediterranean. The Maltese villas appear to have been places with a strong connection to agricultural use for the most part. Large presses required a significant investment and would have needed extensive pressing to make up for it.” (Gambin, 2012). In fact, one would conclude that villa owners must have been from the higher strata of Roman society as a substantial amount of investment was needed to equip the villa with a pressing mill. It is true that at one time, huge portions of the island were transformed to make room for vast olive fields. By putting together, the evidence for oil-producing tools including press beds, crushers, and counterweights, this conclusion has been established. These tools were most definitely not made only for home usage, based only on their size. These presses' large-scale capacities might possibly be a sign of communal pressing, when proprietors of nearby smaller groves would bring their harvest in for pressing. (Gambin, 2012).

### **3.2 Zejtun, its environs and toponomy.**

The secondary focus of this study is the consideration of the connection, if there was any, between the toponomy of some place names, (particularly Zejtun), and the size of production. Some consideration has been taken into the importance of the area, and what historians had to say about this. According to topographical information and recent history, there was ample vegetation in the region between Marsascala and Zejtun. The neighborhood was widely recognized for its olive trees in addition to the oak tree. According to historian Abela, oil from the region was exported off the island. In fact, he points out several circular tar-line trenches around Marsaxlokk's coastline that, in his day, were thought to have served as vats for storing Zejtun oil meant for transportation. The archaeological data largely confirms this attribution of thriving oil production practices in this region. 'Apart from the Roman Villa at Zejtun, which was equipped with a pressing mill, only 2.5 kilometers away, one finds the Roman Villa of Ta' Kaccatura, where oil-pressing instruments were also found. In the countryside near Marsaxlokk, which is also in the same proximity, another oil-press, which would probably point at being another pressing site' (Bruno, 2009) consolidates the theory that there was substantial production in the area.

"Before excavations on the construction of the Secondary school in Zejtun, in 1961, there were never any finds, or at least none ever documented, which indicated a connection between the name "Zejtun" and an olive oil production activity in the area", (Bonanno/Vella, 2012). The only assumption of a connection with olive cultivation came from the place name of the village. Even though it is often attested that numerous toponyms of Arabic origin on the Maltese Islands, allude to the significant presence of olive groves and production of olive oil in a particular region, town, or village, it is to be noted that this place name, does not reach beyond Arab occupation of Malta as from 870AD, and thus might not be connected to antiquity. In fact, according to Wettinger, who is to-date the authority on Maltese place names, the Arabic name "Zejtun" could mean, "The land, fields or fief) of Zejtuni, someone having some connection with cultivated olives, OR an inhabitant of the Tunisian town of Zeitun" (Wettinger, 2000). The latter argues the same, for "Bir id-Deheb", which we traditionally translate to Well or cistern of Gold, "gold" referring to liquid gold, that is olive oil. "The gold well or cistern, BUT more probably a corruption of Bir id-Dwieb" meaning the mares' well, HOWEVER, it could alternatively mean – The well of the DUB family, since the surname DUB existed in Malta in the 15<sup>th</sup> century" (Wettinger,2000).

### 3.3 Transportation for export.

The next part of the research included the study of how olive oil was transported to be exported. To do this, the author referred to local marine archaeological evidence and contribution from marine historian Timothy Gambin. However, this study also has a direct link with the production of amphorae, which would have been used to carry the olive oil intended to be exported. This link has been tackled by referring to the studies conducted by Brunella Bruno on amphorae found on the Maltese Islands. The manufacture and transportation of huge amounts of goods and luxuries from one region of the Roman Empire to another was a pivotal affair during the Roman era. The sea was at the hub of the shifting of these items. Thousands of amphorae carrying oil, wine, and garum were shipped throughout the Mediterranean and beyond. Islands that were strategically positioned at the intersection of this exchange were in a great position to profit from maritime trade. Malta would have been able to export its own olive oil despite its modest size and closeness to big North African production hubs by making use of the country's dispersed hinterlands. It is important to consider how these items were transported. There were two main modes of transportation in antiquity: terrestrial and waterborne (by rivers and/or the sea). It is clear that ancient civilizations favored marine travel despite the risks involved, which included piracy and the elements. It is acceptable to conclude that the widespread transportation of products from one Mediterranean corner to the next was made possible by shipping.

Although marine archaeological findings give a strong indication of the preferred paths, consideration must be made to the fact that, using shipwrecks to complete the supposed routes would be incorrect if the manufacturing and consuming centres were simply connected with straight lines. The choice of sailing routes was heavily influenced by wind patterns, currents, and other environmental factors. 'However, the absence of amphora evidence, including the complete absence of Roman kilns, is the second issue regarding the large-scale production of olive oil in Malta. The creation and dissemination of the Roman amphora Bruno claimed to have found, which dates to the early imperial period, are not supported by any evidence. The former can be explained by the individuals who amassed antiquated shards to produce *deffun.*' (Gambin, 2012).

The economic and manufacturing setting in which Maltese amphorae were produced must remain poorly characterized because of the lack of archaeological evidence that shows manufacture to have occurred in loco, such as kilns or ceramic fragments. The finding of amphorae clarifies the potential export of the food they held. "The containers' distinctive spike-like ends imply they were not made for local use but rather for trading by sea" (Bruno, 2009). The lack of evidence does not however, exclude the possibility of these structures ever existed on the Island. In his late nineteenth century writings,

scholar Caruana indicates the discovery of kilns in the Marsa district, near Marsaxlokk, Rabat, and Gozo. (Bruno, 2009). The remains of cargo dating to the Late Republic that were unearthed off the bay of Xlendi provide more evidence that the Malta amphora travelled on cargo ships. However, because there have only been a few underwater recoveries, it is challenging to determine whether these containers were part of a cargo or not.

### **3.4 Production after Byzantine rule.**

It has so far been noted that the epitome of this industry happened during Roman rule in Malta. Next this study reviewed what happened after the collapse of the Roman empire, vis-à-vis the cultivation of olive trees in Malta. The existence of numerous toponyms with Arabic roots that denote the existence of olive groves, various sorts of olives, and oil is evidence that the cultivation of the olive continued into the Byzantine and Arabic periods. When the Arabs conquered Malta in 870AD, they introduced the cultivation of citrus and cotton, which was a successful cash crop, to the detriment of the slow-maturing olive trees which were systematically wiped out to make way for cotton and citrus cultivation.

Therefore, it appears likely that by this time, local olive crop production, which had been one of the pillars of Maltese agriculture in classical times, had almost completely ceased. Important grains and other food supplies were imported using the proceeds from cotton exports. Unlike olive trees, which were permanent and required arduous maintenance and protection, cotton was planted and picked, either leaving nothing in the bare fields or allowing for the development of another crop. Additionally, a lot of olive trees were removed for shipbuilding without being restored. Despite this, several towns, and villages with names from the Arab era suggest Malta was associated with the development and production of olive trees. These include "*Bir Zebbugia*", which translates to Well of Olives and "*Bir id-Deheb*", which translates to Well of Gold, referring to the contents of the Well bearing liquid gold as was Olive oil also referred to.

'In the fifteenth century A.D., olive trees once again flourished in Malta. Several local historians attested that significant amounts of olive oil were exported to Europe. The islands were referred to as Caricator d'Olio, or Exporters of Oil, during this time' (Bugeja, 2016). By the sixteenth century, olive trees were once again abundant, and as a result, olive groves produced oil, a valuable commodity that was shipped to Spain and exchanged for silver there. Olive oil production, cease once again in the 18<sup>th</sup> century, when around 80,000 olive trees were felled because of Spain's high demand for cotton. In fact, only a few hundred of trees were kept supplying olives and olive oil to be consumed locally (Bugeja 2016).

#### 4. Results, Analysis and Discussion

An interview was conducted with cultivator F.G. to establish some information regarding olive tree cultivation in the present day.

F.G. has been cultivating olive trees since 1999 and has around a hundred trees, four of which are indigenous to the Maltese Islands and are over 300 years old. The varieties of olive trees in his grove, include the *Carolea* which is of Italian origin, and which has good features for good oil extraction. The second variety which F.G. grows in his grove is the *Biancolilla*. This variety is traditionally found in Central and Eastern Sicily and is particularly noted for its high productivity and resistance to drought. F.G explained that after the planting of the tree, it takes circa four years for the tree to start bearing fruit. When asked what the difference between a table olive and an oil olive is, F.G explains that there are no significant differences except that cultivators like himself who want to produce olive oil, use an olive that is smaller in size but has a higher oil content. The perfect climate for an olive tree, is particularly like the one we have in the Maltese Islands, that is a Mediterranean like climate, with long, hot summers and a cool, but not frigid winter. The best time to harvest the olive in Malta is Mid October, a process which needs to kick off exactly when the fruit has started to ripen, but not too much. The harvesting system used by F.G. is a hand-held harvester, referred to as a “flap”, which separates the fruits from the olive tree by means of vibration and shaking. This method F.G. explains does the least damage to the branches and bark of the tree, when compared to other less labour-intensive methods. As soon as the olives are picked, these are immediately taken to the olive press, which in F.G.’s case is to another cultivator situated in Marsaxlokk, whereby it is pressed within a maximum timeframe of twenty-four hours. When asked about the average yield, for each harvest, F.G explains that some factors like climate, play a very important role in determining the average yearly yield, but on average from 80 trees he gets around 700 kgs of olive oil. When asked what the determining factors to produce good quality olive oil are, F.G. states that at his grove, the olive trees are grown without chemical plant protection products, pesticides, synthetic fertilizers, and herbicides.

#### 4.1 Table 1. Past and present production.

Malta during Roman rule			
	Number of trees @180 trees per Ha <sup>2</sup>	Fruit Yield @25kgs/tree <sup>3</sup>	Oil Yield in ltrs @10% of Fruit Yield <sup>4</sup>
Malta & Gozo			
2500 Ha <sup>1</sup>	450,000 trees	11,250,000	1,125,000
Zejtun Roman Villa			
6 Ha <sup>5</sup>	1,080 trees	27,000	2,700



21st Century Malta					
	Number of trees @ca 720 trees per Ha	6		Fruit Yield  in kgs	Oil Yield in ltrs @12.5% of Fruit Yield
Malta & Gozo - 2019					
65 Ha <sup>7</sup>	50,000			250,000	31,250
Malta & Gozo - 2020					
79Ha <sup>8</sup>	55,000			275,000	34,375
Malta & Gozo - 2021					
82 Ha <sup>9</sup>	57,389	7		300,000	37,500

<sup>1</sup> Gambin.T, A drop in the Ocean

<sup>2</sup> Gambin.T, A drop in the Ocean

<sup>3</sup> Gambin.T, A drop in the Ocean

<sup>4</sup> Gambin.T, A drop in the Ocean

<sup>5</sup> Vella. N,

<sup>6</sup> Ministry of Agriculture

<sup>7</sup> Ministry of Agriculture

<sup>8</sup> Ministry of Agriculture

<sup>9</sup> Ministry of Agriculture

#### **4.1.1      Analysing the preceding table - Productivity**

When comparing the number of trees planted per Ha in Roman times and today, one can see that the number has increased drastically, and this might be attributed to several factors. First, the levels of income achievable with traditional groves, which is usually characterised by large and randomly spaced trees, is often low due to extensive use of labour. In present day, cultivating Olive trees requires modern and economically feasible planting systems that provide timely, plentiful, and regular fruiting. Compared to modern day methods, where trees are planted at a 4-meter distance, the Romans planted olive trees 18 meters apart, which might sound wasteful in terms of land space. This might have in the long run, ended up being more beneficial long-term, as it was less water dependant and less stressful on the soil's nutrient resources. Additionally, an important factor which today's high-density planting methods tend to ignore is the fact that, an olive tree must be exposed to direct sunlight on all sides, and the system used in antiquity would have averted the inter-shading between trees planted near each other.

#### **4.1.2      Analysing the preceding table - Export.**

According to Gambin, the population in Malta during the Roman era was circa 14,000, who would have consumed approximately 140,000 litres of oil for food purposes, and the same amount for lighting and other uses, which gives a total consumption of 240,000 litres per annum. If from the above table, it is estimated that the annual olive oil production was at 1.125,000 litres, the surplus of 885,000 litres could have been exported. Although the production and commercial exploitation of olive oil on the Maltese islands is almost certain, there is so far no conclusive proof as to where this oil was shipped to. This theory is supported by the archaeological evidence in Malta—or lack thereof. Referring to the table, 18,750 (sixty-litre amphorae) would have been used to store 1,125,000 litres of olive oil, however to-date, no terracotta-making facilities or waste-material generated by kilns have been found, which would have supported such a huge production of amphorae. Future excavations of unexplored sites on the island could in the future provide more evidence to this theory.



## **4.2 Present day cultivation.**

On the islands of Malta and Gozo, olive trees are grown in various locations. Many of the trees that support the local olive groves are dispersed, used as windbreakers, or combined with other fruit trees. The main cause of the irregular distribution is the characteristic size of Maltese agricultural land portions, which are small and fragmented, frequently separated by traditional stone "rubble" walls. Since the olive industry has just recovered, olive trees have been planted in groves starting at just 0.1 hectares, with a mean planting density of 300 to 400 trees per hectare.

International cultivars were introduced with the revival of the olive industry in the late 1990s, primarily coming from Spain and Italy. The most popular table types are Uova di Piccione and Bella di Spagna, while the oil kinds include Frantoio, Leccino, Carolea, Pendolino, and Cipressino. The Agricultural Directorate built an organic experimental grove with 20 of the most widely planted varieties in 2003 to examine their adaptability to the local environment. Maltese varieties have also been planted in this grove as a genetic resource to research their traits. The PRIMO project (Project for the Revival of the Indigenous Maltese Olive) was started in November 2006 with the goal of conserving and reviving the Maltese varieties. This environmental project aims to revive native cultivars so that enough local olive oil derived from them may be produced, and eventually gain certification and a Protected Designation of Origin (PDO).

## **5. Conclusions.**

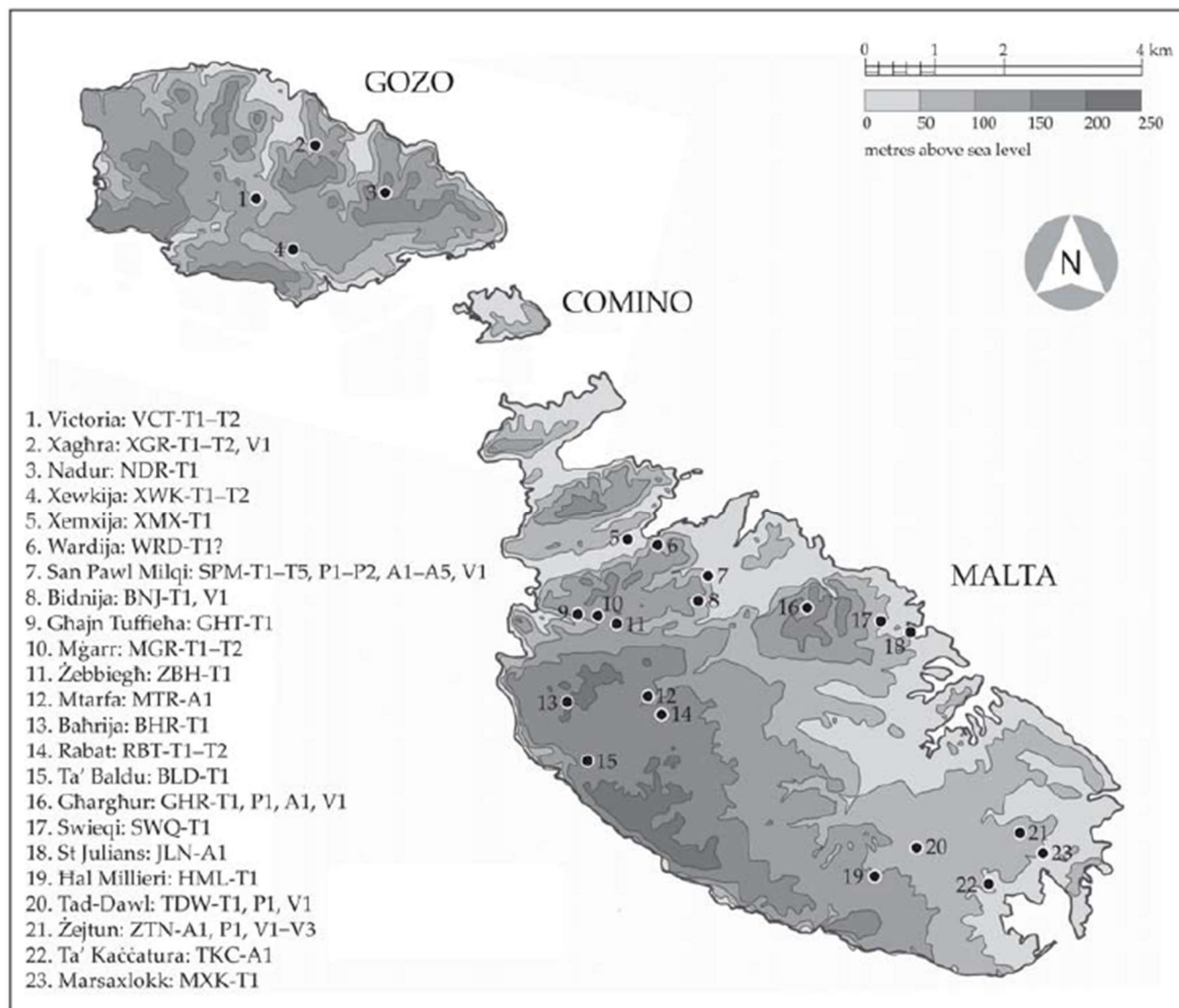
The Maltese have a long history of being discerning and skilled traders, even in Roman times, which does not exclude that a portion of the Maltese population may have engaged in trade, which they may have mastered from the Phoenicians, who were the master seafaring traders of antiquity. The observation made throughout this study certainly points to the hypothesis that amphorae being shipped must have contained oil, which was presumably exported to other shores. Nonetheless, there is all the possibility that, out of sheer convenience amphorae containing oil, could have been transported in small boats or barges, along the coast of the Maltese Islands, berthing in small inlets, rather than cross overland. The culture of olive oil has been through the ages, continuously developing up to the present day, with a direct link to the Mediterranean since the birth and expansion of the Roman Empire. Although, as we have seen in this research, there were long stretches of time, when for various reasons, cultivation and production in Malta took a dip, Maltese landowners are being encouraged to grow native oil species. These initiatives have helped to bring the cultivation of Olive trees and olive oil production in Malta back to some decent numbers. The Olive tree has formed part of the Maltese landscape for thousands of years, and it is crucial that they are preserved and protected to be appreciated by future generations.

## Reference list: In-Text and End-of-Text

- Bonanno, A. (1977) '*Distribution of Villas and some of the Maltese economy in Roman period*'. Journal of the Faculty of Arts, 6(4), 73-81. University of Malta, Faculty of Arts.
- Bonanno, A. (2018) '*Roman Villas in the Maltese archipelago*' in 'The Roman villa in the Mediterranean basin – Late Republic to late antiquity'. Cambridge University Press, pp. 255-265
- Bonanno, A. and Vella, N.C. (2012) '*Past and present excavations of a multi-period site*', in 'The Zejtun Roman Villa'. Guthenberg Press, pp. 8-25
- Bruno, B. (2009) '*Roman and Byzantine Malta- Trade and Economy*'. Midsea Books Ltd.
- Bugeja, I. (2016) '*The Olive Tree in the Mediterranean Basin, Origin and History*'. University of Malta - Institute of Earth Systems, Rural Sciences & Food Systems Division.
- Buhagiar, J.A. (2012) '*Perspectives on Olive cultivation and processing in Maltese Roman antiquity*', in 'The Zejtun Roman Villa'. Guthenberg Press, pp. 98-107.
- Gambin, T. (2012) '*A drop in the Ocean – Malta's trade in Olive oil during the Roman period*' in 'The Zejtun Roman Villa'. Guthenberg Press, pp. 86-97.
- International Olive Council. 'The Olive Tree', <https://www.internationaloliveoil.org/olive-world/olive-tree/> (Accessed December 2022)
- Locatelli, D. 'L'Oro verde di Malta. Stime sulla produzione olearia nella Villa San Pawl Milqi ', pp.12.
- Marzano, A. and Metraux, G.P.R (2018) '*The Roman Villa: An overview*', in 'The Roman villa in the Mediterranean basin – Late Republic to late antiquity'. Cambridge University Press, pp. 1-41.
- Vella, N.C, Frendo A.J, Vella, H.C.R. (2018) 'The Lure of the Antique. Essays on Malta and Mediterranean Archaeology in Honour of Anthony Bonanno'. Peeters Publishers, pp. 278-278
- Wettinger, G. (2000) 'Place-names of the Maltese Islands, ca. 1300-1800. Publishers Enterprises Group (P.E.G) Press, pp. 39 and 630.

## Appendices

### Appendix 1: Location of the olive pressing equipment and farms in the Maltese islands.



Source: (*The Lure of the Antique. Essays on Malta and Mediterranean Archaeology in Honour of Anthony Bonanno*).

## Appendix 2: HND TG Long Essay Tour Itinerary - Malta's Liquid Gold

### Stop 1: 09:00 - Old Parish of St. Catherine – Triq San Girgor – Zejtun.

**Location:** the SE coast of Malta, and which covers the hill that dominates the bays of M'xlokk, M'scala and St. Thomas Bay, which since ancient times have been popular and convenient landing beaches for trade and even invaders.

**Timeline of the area:** 1436 was represented in maps as *Terra Santa Caterina* because of the significant population cluster in the SE region of Malta. Made up of a number of hamlets, extending from the Cottonera bastions up to *Hal Ghaxaq*, *Haz Zabbar*, *Marsaskala* *Marsaxlokk* and even *St. George's Bay*. In the Middle Ages becomes one of Malta's first ten parishes. Till the end of the 17<sup>th</sup> century the inhabitants of Zejtun formed two communities, which were known as Casal Bisqalln nowadays known as the lower village and Casal Hal Bisbut, known as the upper village. In 1797 got the title of "*Citta Bylandt*" by Grand Master Hompesch.

**Old Parish:** Medieval Church dedicated to St. Catherine of Alexandria, standing on the footprint of another church built before 1436. Present building from the 16<sup>th</sup> century – over the years has gone through various remodels. This area is the highest point of a long ridge, so this church was used as a watch tower, overlooking the harbour, which was a favorite landing place for corsairs. Around the dome of the church is a secret passage in a U form- built in thick walls. Sentries watched for landings of pirates in the not-so-distant bays. Then from the roof of this church they warned the garrison at Mdina via smoke signals. 1969 great discovery – considerable number of human bones / skulls. Legend has it that they were buried alive within these passages during the last siege of the Turkish armada in 1614.

**The statue of St. Gregory:** Statue is facing the Cathedral of Mdina – Speak about connection with religious pilgrimage of *San Girgor*, that takes place on the first Wednesday after Easter. Origin of the pilgrimage – when it started and link to Grand Master Perellos who built a house in Zejtun specifically to be able to watch this important procession go by from the comfort of his balcony. Comparison with celebrations today where procession is shorter and locals enjoy a day off, playing tombola and eating *Hobz biz-Zejt* in Marsaxlokk whilst being entertained by *Ghana*.

**Stop 2: 09:10 - Gnien I-Ghannejja Zwieten – Triq id-Dahla ta’ San Tumas.** Short stop next to bust of “Ghannej Zejtuni” to speak about “*Ghana*”, traditional folk singing. Speak about possible origin and how it is still popular in Zejtun.

**09: 15 - Amphitheater in Gnien I-Ghannejja Zwieten** – Look out up to Marsaxlokk Bay. Speak about proximity to other heritage sites in the area. Start in chronologic order from pre-history – *Ghar Dalam* – *Han Ginwi* – *Tas Silg* – Knights of St. John (Watch Towers of San Lucjan & St. Thomas). Whilst talking about the Knights period reference will be made to a short story of how the Great Siege’s first attacks took place within a quaint street here in Zejtun in 1565. Move to French in Malta, the blockade by the Maltese irregulars, which in Zejtun were commanded by Lt. Guze’ Abela. Sir Alexander Ball in 1802 gifted the “Gnien tal-Kmandant Garden” in recognition of the villagers’ participation in the French revolt.

**Stop 3: 09:25 - Gnien tal-Kmandant – Triq id-Dahla ta’ San Tumas.** The garden is full of endemic and indigenous plants and trees and also some olive trees. And speaking of olive trees, guide gives historical background of the cultivation of the Olive tree, in the Mediterranean basin and then introduction of it in Malta by the Phoenicians. Its different uses in antiquity and the direct connection with the Roman Villas in general.

**Stop 4: 09:35 - Zejtun Roman Villa (Secondary School).** Introduction about the different types of Roman Villas in Malta. The simply residential ones, and the agrarian ones, intended for agriculture. In Roman Malta the agrarian ones were more prevalent than the residential ones. So far 23 Villas/ farms/agricultural sites have been discovered in Malta. The layout of the house was one part residential the other for agricultural purposes. Speak about the Zejtun Roman Villa – Start with the accidental discovery 1961 and the various archaeological digs which took place up to 2018. Various artefacts were unearthed and apart from the olive oil pressing instruments, probably the most significant is the piece of pottery with an inscribed dedication to Ashtarte, a Punic Goddess. *Since guests cannot be taken physically on site because area has been backfilled for conservation purposes, a presentation / video of a reconstruction of the Villa will be shown in one of the school classrooms, which is in close proximity to the actual site.* Running commentary by the guide, about the various rooms in a Roman Villa, whilst also a thorough explanation of the olive oil extraction process, starting from the harvest up to the actual extraction of the oil.

**Stop 5: 10:00 – Pjazza Dicembru Tlettax – Pressing mill replica.** Brief information about the Baroque Parish church, designed by Lorenzo Gafa. Feast celebrations for a whole week in the 3<sup>rd</sup> week of June, band clubs, fireworks and xalata. Lastly direct guests to the Olive mill replica and talk about the toponym of the village name “Zejtun”, that there are various lines of thoughts about whether there is a connection between the semitic name and olive oil production (quote Wettinger).

**Coach tour** - Short coach trip to Ta’ Katrin Olive Grove – Tal-Barrani Road – Guide will speak about production after Roman rule. Decline in production during Arab rule due to high demand for cotton which was considered a quick cash crop, compared to the slow growing Olive tree. In the 16<sup>th</sup> century it looks like there was a boost in cultivation again, but 18<sup>th</sup> century it is estimated that around 80,000 trees were chopped again, once more to be replaced by cotton. In the 1990’s there was a drive to entice farmers to start cultivating again and speak about various projects run by the government to revive the Maltese indigenous olive tree.

**Stop 6: 10:15 – Ta’ Katrin Olive Grove – Tal Barrani Road.** Speak about present day data. Number of trees and olive oil produced in the last 3-5 years, the number of farms and number of mills, which have been steadily increasing. Then speak specifically about olive trees being cultivated at Ta’ Katrina, varieties/ number of trees/ harvesting process and some tricks of the trade forwarded by owner Karmenu Desira. Tour ends with an olive oil tasting session from (two varieties of Ta’ Katrina olives), along with Maltese ftajjar, and if we have time, have a short look-around the farm and grove.

- End of Tour -

