THE 19TH CENTURY OLIVE OIL INDUSTRY IN AYVALIK AND ITS IMPACT ON THE SETTLEMENT PATTERN

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ABSTRACT

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Ayvalık which is located on the Aegean coast of the West Anatolia made its main breakthrough in the 19th century and owe this development to olive oil production which was the main economic input of the settlement since the establishment of Ayvalık.

Ayvalık was within the hinterland of İzmir which was gained importance as a regional trade centre in the 19th century. Thus, Ayvalık found the way to improve its trade relations in an international level and eventually increase its olive oil production volume due to the growing demands.

The new form of olive oil production; factories, developed together with the traditional house and workshop productions in the last quarter of the 19th century in Ayvalık. These three forms of production made up the second significant usage within the Ayvalık after the residential areas. The two or more floored, large volumed buildings were especially located on the shore, near to the port and trade facilities, on a flat terrain and became the most dominant and attractive buildings of the settlement.

Besides the impressive industrial buildings, olive oil production itself effected the settlement pattern of Ayvalık. The main transportation axes were formed accordingly to the relationship between raw material areas and production places. The olive oil production also has an effect on the physical development direction of the settlement. The areas influenced from the negative effects of the production i.e., smell and dust were not chosen for development. The development of industrial buildings also blocked the physical relationship between the residential areas and sea. The industrial buildings such as factories, workshops and warehouses along the coast line reflect the industrial character of Ayvalık in the settlement's silhouette.

Keywords: The Ottoman Industry, Ayvalık Settlement Pattern, Olive Oil Production in the 19th century.

ÖZ

19. YÜZYILDA AYVALIK'TA ZEYTİNYAĞI SANAYİ
VE YERLEŞİM DOKUSUNA ETKİSİ

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Ayvalık, Batı Anadolu'nun Ege kıyısında bulunan ve asıl gelişimini 19. yüzyılda gerçekleştirmiş bir yerleşimdir. Bu gelişimi, yerleşimin kurulduğundan bu yana en etkin ekonomik girdiyi sağlayan zeytinyağı üretimine borçludur.

İngiliz Sanayi Devrimi'nden sonra artan ve tüm Dünya'ya yayılan yoğun ticaret, o dönemde yükselen İzmir'in etki alanında bulunan Ayvalık'ı da etkilemişti. Uluslararası ticarette kendini geliştiren Ayvalık, üretim hacmini de buna bağlı arttırmıştı.

Geleneksel atölye üretimi ve ev üretimine ek olarak, 19. yüzyılın son çeyreğinde zeytinyağı, fabrikalarda da üretilemeye başlandı. Bu üçlü üretim yapısına sahip olan zeytinyağı sanayi kentin de konuttan sonra en yoğun kullanımı haline gelmişti. Özellikle kıyı boyunca, limana ve ticari kullanımlara yakın, düz topografyaya sahip alanlara yerleşen iki ve daha çok katlı, büyük hacimli sanayi yapıları, yerleşiminin en baskın ve dikkat çeken binalarıydı. Binaların etkileyici fiziksel yapısına ek olarak, yerleşim dokusu da zeytinyağı üretiminden büyük oranda etkilenmişti. Yerleşimin ana ulaşım aksları, üretim mekânları ile

hammadde bölgeleri (zeytinlikler) arasındaki bağlantıları temel alarak oluşmuştur. Zeytinyağı üretiminin kentin gelişme yönünde de etkisi olmuştur. 19. yüzyıl boyuca gelişim, etkin rüzgâr yönü doğrultusunda üretimin koku, duman gibi olumsuz etkileri altında kalan bölgelerin tersi yönde gerçekleşmiştir. Konut dokusunun denizle olan fiziksel bağlantısı da sanayi alanlarının gelişiminden sonra tamamen kopmuştur. Ayvalık kıyısı boyunca yayılan, fabrika, atölye ve depo binaları yerleşimin sanayi karakterini yerleşim siluetine de yansıtmıştır.

Anahtar Kelimeler: Osmanlı Sanayii, Ayvalık Yerleşim Dokusu, 19.yüzyılda Zeytinyağı Sanayi

To my uncle, Osman Terzi
who never stopped improving himself

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CHAPTER I

INTRODUCTION

"…I like them all, but especially the olive. For what it symbolizes, first of all, peace with its leaves and joy with its golden oil. "

Aldous Huxley

1.1. Theoretical Basis

The olive oil industry at Ayvalık deserves a study that concentrates on the economic and social context of the industrial structures and their impact on the settlement pattern at Ayvalık during the 19th century. There may be two approaches in conducting such a study; Ayvalık can be studied using the methods of Industrial Archaeology or of Plantation Archaeology. Here both methods and their applicabilities will be discussed.

> "Industrial Archaeology is the systematic study of structures and artefacts as a means of enlarging our understanding of the industrial past." (Palmer and Neaverson 1998, 1)

Industrial archaeology analyses functional structure of sites within the economic and social context of industrial revolution (Palmer and Neaverson 1998, 4). In addition, the period with which industrial archaeology is concerned, begins when societies began to be influenced by the technological developments of the Industrial Revolution era and established new forms of organization. This new social organization included a labour class and took its name from the industrial revolution: *the industrial society*. Rather than a chronological definition, the transformation of production from domestic or craft manufacturing to industrial or capitalist style, and transformation from traditional to industrial society better defines the period that Industrial Archaeology examines (Palmer and Neaverson 1998, 14).

The Industrial revolution mainly took place in Great Britain and Western European countries followed Great Britain in industrialization. What happened in Ayvalık was a lot different to what industrial archaeology actually deals with. Ayvalık was a settlement which developed its local manufacturing capabilities into an industry with the indirect effects of global economic, technological and political changes of the 19th century. However, one cannot speak of an industrial growth and a labour class supporting it would also be possible to compare Ayvalık to certain colonies of industrialized countries and analyse the development with the methods of plantation archaeology, however, the Ottoman Empire protected its unity during 19th century and Ayvalık was far from being a colony. Economic privileges were granted to GB and other industrialized countries but the Ottoman Empire did not become a plantation country for GB.

As a result, Ayvalık, as a rural settlement with modern industrial establishments, in the Ottoman Empire during the 19th century is a unique case and needs to be studied with the help of a combination of different study of methods in archaeology in order to reveal the impact of industrial development on settlement patterns.

1.2 The Concept of "Industrial Heritage" in Turkey

The meaning of cultural heritage can change through time and this change occurred for the industrial structures in the second half of the 20th century in England. Functional structures of manufacturing environments transformed into icons of the industrial past (Palmer and Neaverson 1998, 8).

But for Turkey this cultural transformation began within the last decade. Abandoned industrial buildings were considered as redundant spaces especially within urban areas, and most of these were demolished without any documentation being done, in order to create high economic value estates during last 30 years. In İstanbul, the industrial centre of the Ottoman Empire, there were more than a hundred and fifty factories located on the shores of the Golden Horn, most of which were demolished in the 1980s during re-development projects (Köksal and Kargın 2003, 431). Today, there are few factories left on the Golden Horn shore and most of them were restored and are re-used as universities, museums and art galleries (Cengizkan, N.M. 2006, 10). In Ankara however, The Ankara Gas Factory was demolished by the Metropolitan Municipality only in 2006 despite its cultural importance, in order to create new development plots with high economic value.

There are also positive developments in Turkey concerning the cultural heritage. Today, especially architects are interested in industrial heritage and this interest is not limited with the 19th century, but the early republican remains of industry are also examined (Zelef 2006, 5). But the study of industrial heritage has been limited to the recording and restoration of individual buildings. There is a deficiency in the interest of archaeologists in the field of Industrial Archaeology. Assessment of the industrial past within technological, economic and social contexts is left to restoration teams. There is no special regulation, or ascription within a regulation, in Turkish conservation laws.

Industrial archaeology is usually perceived in Turkey as preserving industrial remains as monuments and integrating them into the urban pattern through re-functioning. This approach, like the early periods of Industrial

Archaeology in Europe, led to over-emphasis on the monumental remains of the industrial past (Palmer and Neaverson 1998, 16). But this stance did not provide an opportunity to understand the industrial past; it was mostly interested in the aesthetic values.

Ayvalık provides a protected industrial pattern belonging to the 19th century as a rather exceptional case. But since the Ottoman Empire did not experience an industrial revolution, it is not evocative. This study will discuss the economic, social, technological, spatial, environmental structure of the 19th century olive oil industry in Ayvalık rather than studying preservation and involvement of industrial heritage in modern urban structure. That will be left for further studies.

Ayvalık is unique because it provides ample opportunities with which to evaluate the olive oil industry further than a building scale, in an industrial pattern. This feature of Ayvalık steers the study in an extensive and general character rather than an intensive and specific character.

1.3. Description of the Study Area

Ayvalık is a coastal settlement located on the northern Aegean part of Anatolia (see fig. 1.1) with 22 small islands surrounding its shore and a secure port. Today, there are 363 registered buildings in Ayvalık (Yorulmaz, 2004). In addition to its beautiful Ottoman-Greek houses, the olive oil and soap factories, and the workshops and their warehouses also reflect the brilliant days of Ayvalık in the 19th century

Figure 1.1: Location of Ayvalık within the Northern Aegean.

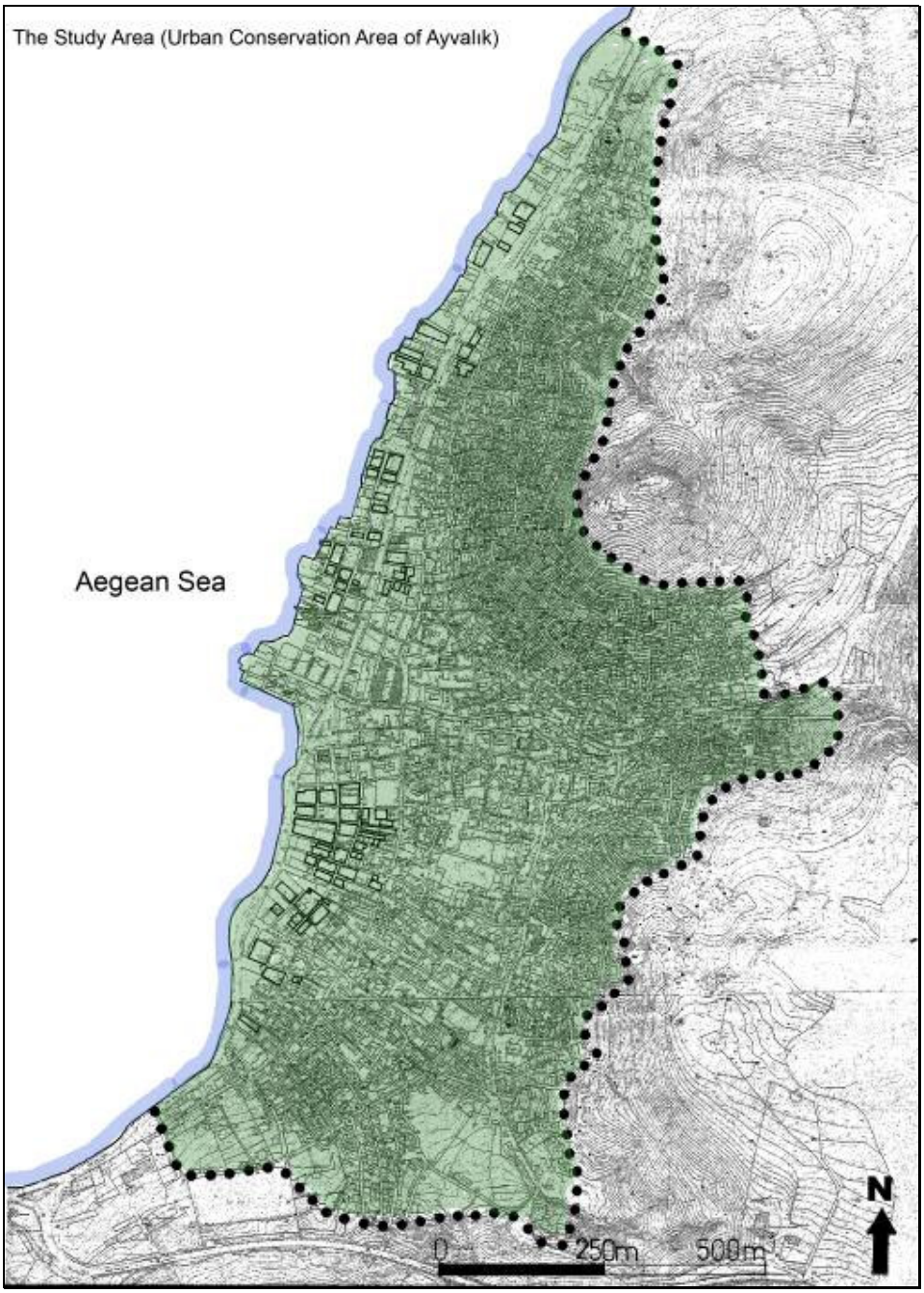

Figure 1.2: The study area (the urban conservation area of Ayvalık).

1.4. Aim

The aim of this study is to reveal how the olive oil industry influenced the settlement pattern of Ayvalık during 19th century. The questions; "Why such an improvement in olive oil industry arose in Ayvalık" and "What was the structure of this industrial improvement" are secondary questions that are intended to be answered.

The industrial buildings from the late 18th and early 20th century relating to olive oil production will be considered within the urban conservation area of Ayvalık centre (see fig. 1.2).

1.5. Method

The methods of this study were designed based on the basic methods of Industrial Archaeology: literature and land surveys. In this frame first of all, state documents such as conventions, records and reports, research studies, travellers' notes, old periodicals, books on modern history and articles were used in order to compose the historical background of the study.

A survey was also conducted in the study area. This survey included locating buildings on 1:5000 scale state maps and recording buildings by writing (this is made by using a field form specially designed by asking specialist's opinion, examining other field forms and text books given in Appendix A), sketch drawings (in buildings which preserve their original plan), and photography (an attempt was made to photograph the exterior and, if possible, the interior of all buildings). Categorising collected data, map analysis, tables, and basic statistic calculations were used after the field study in order to process collected data.

This study consists of six main chapters and the appendices. The first two chapters concentrate on historical background using a deductive method, the next two chapters deal with field-work results, analysis and evaluation.

Chapter 2 attempts a reconstruction of the economic relation between the Ottoman Empire and the world during the 19th century. The industrial revolution was the most significant change during the 19th century and its effect spread all over the world. The economy of the Ottoman Empire was also re-formed according to the revolution. Changes in the Ottoman economy were also defined in this chapter in order to generate a historical background.

Following these, the impact of international economic changes on İzmir and Western Anatolia are examined. Re-organisation of economic relations and the increasing role of the minorities within these processes are also touched upon. Since Ayvalık is located in the western Anatolia region and İzmir was the 'PEARL OF THE WEST' of this area in the 19th century, it will be useful to understand the economic and social structure of the region that Ayvalık belonged.

Chapter 3 concerns Ayvalık; the establishment, development before and during the 19th century, the international economic condition, and social influences of the settlement are the main headings. Economic rise through olive oil industry and the Greek nationalism movement are the most significant developmental issues that are identified Ayvalık.

Chapter 4 concentrates on the industrial improvement's structure in olive oil industry in Ayvalık. This will be discussed under historical and technological development, production structure, and production volume, physical features related with the production process, market relations and social issues titles.

Chapter 5 discusses the determinative role of an improved olive oil industry on the settlement pattern of Ayvalık and also the factors that effect the location selection of these industries.

Finally, in the conclusion, results of the historical survey of the settlement and land survey will be presented.

CHAPTER II

THE OTTOMAN EMPIRE AND WESTERN ANATOLIA DURING THE 19TH CENTURY

Olive oil production has always been the major economic activity of Ayvalık since its establishment. However, the production character changed during the 19th century irregularly compared to the rest of Anatolia. This was a reflection of the impact of global changes on the Ottoman Empire.

19th century represents a regressional period in the Ottoman Empire. Its economy was in disintegrating and its development mostly depended upon European economies. During the 19th century European economy was going through a dramatic change due to the Industrial Revolution.

2.1. The Industrial Revolution

The Industrial Revolution is considered to be one of the most important transformations in the history of humankind (Hobsbawm 1998, 13). It influenced the social and economical basis of the non-industrialized societies and created new concepts i.e., Capitalism, Marxism, labour class, mass production. Although the beginning of the revolution differs in each country across Europe, today 1780 and 1830 are generally accepted dates of the revolution. The reason is that the revolution mainly influenced production technologies from 1780s onwards in Europe and its impact spread to the whole world, directly or indirectly, in the first half of the 19th century (Hobsbawm 1969, 27).

Ottoman Empire was one of the larger countries which were greatly influenced by this movement. Although indirectly, Ottoman Empire, its

institutions, systems, manufacture, trade, agriculture etc. were effected by the Industrial Revolution. Most observable direct influence was the developing foreign trade with the Europeans.

In spite of the fact that the integration process of the Ottoman Empire into the European economy had already started in the 16th century, the main breakthrough[1] was observed between the end of the 18th century and the early 20th century (Quartet 1987, 18). Exportation of goods from GB [2] to the empire had a hundred percent increase between 1827 and 1838 (Kurmuş 1982, 26).

Under industrialized European power, the capitalist economy spread rapidly[3] over non-industrialized countries during the 19th century (Quataert 1994, 770). The industrialized Europe tried to impose practices of capitalist economy on the rest of the world. The primary aim of the European countries was to obtain the economic and political control of all countries under their influence, which means colonization. But the existent economic, political and social structures in the non-industrialised countries reacted in their own way to European capitalist powers. While some lost total control of their independence and became colonies, others continued their political existence, yet totally or partially lost their economic independence.

Although Ottoman Empire could not totally keep its economy self – determined, she continued her political existence due to its rooted system ever since the 13th century. She tried to resist[4] this pressure during 19th century but could not succeed at the end (Quartet 1987, 13). Eventually, the influence of the

[1] The trade volume which was 4,4 million sterling in the 18th century raised to 64 million in the early 20th century (Quartet 1987, 18).

[2] Until the first quarter of the 19th century France, Austria and Sweden were the active in the Ottoman Empire's exportation but after that they couldn't race with the UK's machine based industrial products. Thus UK became the one in the Ottoman market (Kurmuş, 1982:25).

[3] The global trade increases 50 times bigger and 3 times faster compared to its condition in the 18th century (Quataert, 1994: 771).

[4] There were also supporters of the European dominance over the Ottoman economy and the empire's Europeanization. Donald Quartet in his book "Osmanlı Devleti'nde Avrupa İktisadi Yayılım ve Direnişi 1881 – 1908" mention about both of the approaches within the Ottoman Empire (Quartet 1987).

industrial revolution on the Ottoman Empire was totally negative and it had a great role in the fall and decline of the empire in the early 20th century (Clark 2006, 467).

2.2 Entrance of Great Britain's Economy to the Ottoman Empire

The term mass production emerged when new production technologies made processing large amounts of raw material in a relatively short time. More raw materials to feed this production system and more markets to export its surpluses were crucial for the industrialized economies' existence. Thus industrialized countries began to search new areas to provide mass production's needs so that they can extend their economy.

When GB could not find more markets for its accumulated surplus, a crisis arose. Products without any demand are worthless, so GB needed to market her surplus, outcome of mass production. She was producing large amounts of products in relatively short time and in a cheap way as a result of her developed technology. Since there was no other economy that can compete with GB after the industrial revolution, she could easily ruin the industry of any country that she was on trading terms. Therefore, in order to conserve and continue their industrial activities, other west European countries closed their economies to the GB products. Facing with the conservative policies of her neighbours, GB began to search other countries to set trade relations with.

The Ottoman Empire, as an easy accessible country with its large ports and their hinterlands, was a suitable region for GB's aims. İstanbul, İzmir, Salonika, and Trabzon were large port cities and they had access to fertile hinterlands. Most important of all, the Ottoman Empire did not take any precautions like other Western European countries to protect its local manufacture/industry (Önsoy 1988, 12). Thus GB entered the Ottoman market intensively in the last quarter of the 18th century.

2.3 Disintegration of the Ottoman Economy

Until the first quarter of the 19th century, the empire was still in competition with European industry because the Europeans did not have enough power to totally suppress the local Ottoman industry (Sarc 1966, 50). However, European cities became mass production centres and the flow of goods through the non-industrialized regions increased during the 19th century (Clark 2006, 467). Thus, various kinds of cheap European goods dominated the Ottoman market and this caused Ottoman Empire to lose control over its economy (Önsoy 1988, 6). Like other non-industrialised countries, the empire started to increase the import of manufactured goods and based its exportation on raw and semi-processed materials (Issawi 1966, 42). The empire became a complementary market for European economies and a raw material source. This caused a disintegration of the traditional Ottoman economy and made it dependent upon European economies (Ökçün 1970, 12). Starting from the regions[5] that had direct economic connection with Europe, an obvious decline started. The interior land, away from direct European contact, protected its economy and continued its traditional handicraft production (Sarc 1966, 50).

In the second half of the 19th century, European economies began to spread their influence through the interior of the empire like they previously did in Thrace, the Eastern European lands, and the Aegean and Mediterranean coasts of the empire (Sarc 1966, 51). This spread of economic influence was a result of not only political regulations but also infrastructural investments (Kurmuş 1982, 33). Within this disintegrated economic structure, Ottoman Empire did not yield but tried to accord its manufacture to the level of developed European industry.

[5] Before the trade convention, there were 2750 clothier in Istanbul which decreased to 25 at 1880s (Ökçün 1970, 9)

2.4 Industrialization Efforts of the Ottoman Empire

While the Europeans were experiencing the industrial revolution, the Ottoman Empire did not totally ignore this period and survived in a passive position within the world economy (Clark 2006, 467-8). The Ottoman economy was mainly dependent upon the export of raw materials and import of industrial products (Ökçün 1970, 11). But after the end of the crisis in Egypt[6], Ottoman Empire got into a peaceful period, and eventually found enough time to consider its economic problems (Önsoy 1988, 47). It was then realized that modernization of the production technologies was a must in order to take part in the world economy (Sarc 1966, 55). With the purpose of protecting local handicrafts and promoting the establishment of modern industries, Ottoman Empire exercised some effort subsequent to the convention of 1838 (Issawi 1966, 18). Both in private and public sectors, machine-based industry started to flourish (Sarc 1966, 55).

The first industrialization effort against the total control of Europeans was seen in the first quarter of 19th century, yet these movements were mainly aimed at satisfying the needs of the palace. However, lack of experience in the production process caused the failure of these efforts (Clark 2006, 469). Selection of the location, raw material, transportation, labour, production and marketing all had to be considered within the production process. Unfortunately, most of these were overseen and only machinery and specialized labour was brought to the new built factories; eventually, it failed (Martal, 1999).

After this failure, the empire approached to industrialization in a more ambitious way by considering the production process as a whole. With a more professional attitude, numerous factories were built especially around İstanbul in

[6] The most significant political crisis of the Empire was about the lands of Egypt. The governor of Egypt, Mehmet Ali Paşa, became very powerful and even started to threaten Mahmut II's reign in the 19th century. In order to preserve her unity, Ottoman Empire demanded support from GB and GB required some economic privileges in return of this help (Önsoy 1988, 15). As a result of these demands, the Anglo-Turkish Commercial Convention was signed in 1938. GB helped Ottoman Empire to sustain its political existence because a centralized state was much more beneficial than disintegrated multi-unit authorities for commercial relations and also they benefited from the trade conventions (Quataert 1994, 761-62).

1840s (Sarc 1966, 56). The old factories[7] were revised and re-arranged with the new technologies[8] (Clark 2006, 468-9). But except for some examples, these factories served the palace. So the basic problem in fact, was not solved. The main aim of these efforts was to set the country free from the dominance of the Europeans. In fact, almost all[9] of these factories were built up with European machinery and in order to manage those factories European engineers and qualified personnel were hired (Ökçün 1970, 9). In some of the factories, even the raw material was imported from Europe. In this aspect, one can hardly define this as process of Ottoman industrialization.

Most of the factories that were established between 1840 and 1850 did not survive for long. Some of them were closed due to lack of experience, economic reasons and European competition (Martal, 1999). The government abandoned its efforts for industrialization after they failed between 1840 and 1850 and remained rather passive just as a regulating and controlling mechanism in the second half of the 19th century. Only a few factories remained in İstanbul and continued production until the decline of the empire. The again, these were only producing goods for the palace (Clark 2006).

Naturally, these conditions helped foreign capital investments to spread across the Empire in the second half of the 19th century. Following this, another struggle for industrialization was observed in the İzmir region, though by means of foreign capital (Martal, 1999). The transformation of the trade capital to industry in the Empire could only be seen in İzmir and Western Anatolia in the second half of the 19th century.

[7] In the last decade of the 18th century, III. Selim established factories with modern technology for army needs, but these efforts did not sustain after his reign and did not begin again until the second half of the 19th century (Clark 2006, 468).

[8] For further reading on the modernization of the Otoman factories Clark 2006, 468-9.

[9] There were only four known factories, producing industrial equipment and machine in the Ottoman Empire. All were in İzmir and producing steam engines, internal combustion engines for flour, oil, pasta and towel factories' equipment (Ökçün 1970, 11).

2.5. İzmir and Western Anatolia

İzmir, a natural port, fertile agricultural lands surrounding it, river and valley access to the hinterlands and geographically a central position in Western Anatolia gives it an irrefutable economic importance since its establishment (Goffman 1999, 85). A small town[10] of the 16th century, İzmir then turned into an important metropolis within the Levant region in the early 20th century (Kasaba 1994, 1). She was the centre of the integration into the world economy for the 19th century Western Anatolia (Goffman 1999, 83).

The integration of western Anatolia into the capitalist economies was significant primarily in trade activities during 19th century. İzmir already had an economic development process going on within before this period (Kasaba 1994, 2). İzmir was a very noteworthy city during the Greek and Roman rules, a trade centre in the 13th century in Byzantium Period, and a naval force base for the emirates of the Aydınoğlus[11] in the 14th century (Goffman 1999, 81). But continuously changing political powers did not allow İzmir to develop steadily until the arrival of the Ottomans (Kasaba 1994, 3). Following the Ottoman entry in 1420s to the Western Anatolia, in the 15-16th centuries international trade became more important than the previous times, however the region's importance decreased[12] (Tekeli 1992, 126). Ottoman Empire began to control the agricultural surplus and also monitored the international trade. Interestingly enough, at that time Western Anatolia's port settlements were not as essential as the inland settlements (Tekeli 1992, 126).

Instead of preserving and developing economic potential of Western Anatolia, The Ottomans abused the city and its hinterland as an agricultural

[10] The population of İzmir during 16th century was 2.000 and this number increased to 200.000 in the early 20th century (Kasaba 1994, 1).

[11] In the 13-14th centuries, before the Ottoman rule, Western Anatolia was made up of small principalities (Tekeli 1992, 126).

[12] Between the beginning of the 16th century and the end of the 16th, century Anatolian population increased about 40-50 percent, whereas Western Anatolia's population stayed more or less the same and decreased its portion within the whole (Tekeli 1992, 126).

product provider for the capital city (Goffman 1999, 82). Thus the economic development of İzmir after the Ottoman conquest was supported by the local powers and European merchants (Goffman 1999, 83).

The Ottoman Empire totally ignored the economical income of the west Anatolia region and this centralized policy was maintained until the 19th century (Goffman 1999, 87). During the 15th and 16th centuries all coastal settlements of western Anatolia were small towns and despite the illegal trade activities like smuggling, the empire's centralist policies were obstacle for the region's economic development (Goffman 1999, 87).

But in the 19th century increased foreign demands on İzmir provided the economic rise of İzmir and integration with European economies. This integration process took place in two phases. These were; the relatively short period observed in the first half of the 17th century and the period between the second half of the 18th century and the last quarter of the 19th century (Kasaba 1994, 2).

2.5.1 The First Improvement Period (The First half of the 17th Century)

At the end of the 16th century, when the government started to lose its power the changes[13] against the centralist economic policy began. İzmir had finally found a way to expand its economic activities (Goffman 1999, 89). In the 17-18th centuries under the influence of European capitalism, Izmir made its breakthrough and became the most important foreign trade centre within the empire (Tekeli 1992, 127). A small 15th century town with a population of circa 2000 became a regional and international trade settlement with 40.000 inhabitants in mid 17th century (Goffman 1999, 89).The weakened central power, gave the chance to European merchants to make trade with İzmir where a commercial manner was rising, instead of Bursa and Aleppo, two of the most important trade

[13] For further reading about the Ottoman economic changes and the loss of power (Goffman 1999, 87-9).

centres until 18th century (Goffman 1999, 89). However, when the Europeans discovered Cape of Good Hope and started to use the Indian Ocean, Bursa, Aleppo and Alexandria lost their importance on the silk and spice trade (Goffman 1999, 89).

The development of the global economy created the opportunity for foreign investors to use Western Anatolia. Daniel Goffman explains the development of İzmir as;

"… in the seventeenth-century western Anatolia a vigorous and innovative pocket of *laissez-faire*ism within the strictly statist Ottoman economy and society" (Goffman 1999, 89-90).

Apart from external effects, İzmir was also an appropriate settlement with its cosmopolitan population[14].The fact that the empire's dominance was relatively weak in İzmir, puts the city in a developmental process in the first half of the 17th century (Kasaba 1994, 5). The trade relations developed and became more complicated in the mid 17th century (Goffman 1999, 90). Products were collected mostly by the non-Muslim Ottomans and carried to the İzmir port where all export goods were shipped to Europe by foreign merchants (Goffman 1999, 90).

The economic development of İzmir can also be observed in the ethniv variety in its population character, Armenians, Greeks, Jews from the empire lands; Dutch, English, French and Venetians from their homelands, migrated to wealthy İzmir city (Goffman 1999, 92). These population movements also nurtured the development of the trade activities in return (Goffman 1999, 105).

[14] Foreign merchant worked with Greek and Armenian mediators when they first get into the Western Anatolia market in order to reach the rural lands (Tekeli 1992, 130).

2.5.2 The Second Improvement Period (The second half of the 18th century - the last quarter of the 19th century)

Despite the economic rise of İzmir, trade goods were not from Western Anatolia[15] (Kasaba 1994, 6). İzmir was just a transit pass within this trade route until the 18th century (Kasaba 1994, 6). But the 19th century represents the participation of Western Anatolia into the European capitalist economies (Tekeli 1992, 128).

This second improvement period started in the mid 18th century and ended in the last quarter of the 19th century (Kasaba 1994, 8). This relatively long period was triggered by external factors[16]. In order to penetrate the Ottoman market, industrialized countries preferred Thrace (Rumeli) and Aegean regions, where the Ottoman power was slightly ineffective. Because minorities were dominant in the population, trade in the area was under the control of these minorities and foreigners. In this sense, Izmir was very suitable for European merchants (Barbaros; 1995).

The developments in the maritime transportation also helped the coastal settlements like İzmir to become significant in trade (Tekeli 1992, 128). This new transportation style in trade increased the significance of the coastal settlements than the inland trade centres of the 18th century. Eventually İzmir's population[17] was 100.000 and Ayvalık's was 30.000 at the end of the 19th century.

Transportation form was also adapted itself to the capitalist economies (Tekeli 1992, 131). Regional caravan transportation was developed instead of long distance caravan trade. Railway[18] constructions started in order to reach the

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[15] Subject of the trade was mainly Persian silk, Angora wool, Asian precious goods (Kasaba 1994, 6).

[16] Demand for agricultural products and raw materials were increasing in the West European economies, GB wanted to keep save the way, the Ottoman lands, down to India.

[17] İzmir became the 2nd biggest settlement in Anatolia following İstanbul. The population of İstanbul was four times bigger than İzmir (Tekeli 1992, 128).

[18] In order to reach the raw materials of the inner Aegean more effectively and easily, in 1860 İzmir – Aydın railway, in 1866 İzmir-Kasaba railway were finished (Martal 1992)

inner lands in western Anatolia from İzmir port. Motorway constructions and port refinements[19] were the most significant transportation investments during the 19th century. All these infrastructure investments increased the volume of international trade (Martal 1992, 268). In the second half of the 19th century foreign infrastructure investments increased in order to accelerate the participation of the western Anatolia to capitalist economies. Communication was strengthened through postal services between Izmir and Western Europe and Western Anatolia. The investments related to infrastructures aimed to facilitate the transportation of goods to İzmir port which also strengthened her dominant character (Kasaba 1994, 13). Finally, İzmir became a wealthy, cosmopolitan cultural and trade centre at the end of the 19th century as a part of the global economy at that time (Goffman 1999, 127).

2.5.3. Industry

The existent conservative economic policies of the Ottoman Empire obstructed the accumulation of capital in agriculture and trade sectors so the required conditions for the development of modern industries during 18th and 19th centuries could not be provided (Barbaros 1995). Despite the industrialization efforts in the 19th century, the modern industrial establishments did not spread across the Ottoman Empire. The efforts remained within the Marmara region, especially in İstanbul, and large state factories emerged (Barbaros 1995). The state factories, established between 1840 and 1850, reflected totally different conditions than private investments since their raw materials and markets were secured. (Quataert 1999, 17).

There were private industrial investments within the empire and İzmir was an important example[20] for these developments (Barbaros 1995). The

[19] The new port was built in 1873 by English and French capital (Martal 1992)

[20] Foreign investors preferred the settlements with easy contact and large hinterland like İstanbul, İzmir, Adana, Konya etc. (Aksoy 1994, 200).

development of industry in the second half of the 19th century took place with the entrance of trade capital of foreigners into İzmir. Especially the foreigners and minorities led industrialization activities within the Western Anatolia. Apart from a few enterpriser factories, there were no great technological developments[21] in industry (Martal 1992, 268).

In 1873, when a regulation allowed the importation of machines duty-free for the establishment of factories, new investments began to take place within Western Anatolia (Martal 1999). Most of the investments in İzmir were of foreign origin and local workers were used only for the jobs which did not require any special skills or abilities. Machines were exported from Europe and the engineers were foreign as well.

Textile and related industries, carpet, paper, olive oil, soap, liquorice, flour, iron works, ship workshops were the production areas in Western Anatolia during the 19th century (Barbaros 1995). İzmir seemed as an industrialized city but in fact, the industrial investments mostly took place in the rural settlements of Western Anatolia (Kurmuş 1982, 125). The foreign investors preferred small rural settlements rather than big cities for their factories in order to stay distant from organized handicrafts guilds (Tekeli 1992, 134). The development of new factories was interrupted by handicrafts guilds either through vandalism[22] or governmental decisions[23] (Kurmuş 1982, 126). Meanwhile, the rural settlements were providing cheap labour to work in endeavour-based industries like carpet business, textile and wool and cotton spinning (Kurmuş 1982, 125).

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[21] Rather than industrial development, foreign investors searched for the most appropriate way to profit however the most advanced technologies of the 19th century in the Ottoman Empire were present in İzmir (Kurmuş 1982, 125).

[22] In 1841 an English carpenter workshop in İzmir was disturbed by guild of local carpernters and the new techonogy machines of the workshop, which were exported from GB, were destroyed. Then no English investor dare to open a carpenter workshop until 1880s (Kurmuş 1982, 125-6).

[23] The Ottoman government represents a bipolar policy over the economic issues, the preservatives and the free trade supporters caused an unstable policy (Quataert 1999, 23). In 1861 an English investor family established a muslin printing factory which was using higher technology compared to the local workshops. When local guilds complain about this unfair competiton conditions, the government decided to shut down the factory (Kurmuş 1982, 126).

In Western Anatolia, the manufacturing sector was re-shaped according to the European market needs and also was supported by new technology tools (Quataert 1999, 283). Besides, machine-based factories were established by European investors in rural settlements (Quataert 1999, 284). Ayvalık made its economic rise under these conditions and became a gateway for the leak capitalist economies to the Ottoman Empire in 19th century.

CHAPTER III

AYVALIK IN THE 19TH CENTURY

During 19th century, Ayvalık had a different path of progress within the collapsing Ottoman Empire (Bayraktar 1998, 1). The settlement represented the changing political, economic and social values of Ottoman Empire which was under the influence of capitalist global economy. Exportation beyond the boundaries of the empire found a way to develop in Ayvalık as a result of the increasing interest of European merchants in Western Anatolia (Bayraktar 1998, 1). Minorities took a mediator role in international trade and gained economic power which directly reflected on the Orthodox Greek population of Ayvalık (Bayraktar 1998, 1). The rising nationalism reached the Ottoman lands in the late 18th century and was accentuated by the commercial bourgeoisie. Therefore, Ayvalık's commercial capital had become a resource supporting the Greek nationalism. Eventually, Ayvalık arose as a significant centre of trade, culture and national movement of Greeks and the settlement had its most sparkling days in the 19th century (Aka 1944, 16).

3.1 The Establishment

Ayvalık is located opposite of the Hektanesoi Islands in the Anatolian coast of the Aegean Sea (Psarros 2004, 3). In terms of historical geography Ayvalık is near to Demircihöyük, Yortan and Troy. A settlement dating to Iron or Bronze Ages is yet unknown. In ancient times it was probably a part of the

agricultural hinterland of Lesbos (Psarros 2004, 2). Although there were three settlements; Nasos, Pardoselene and Halkis, in the Cunda/Mochonisi Island[24], Ayvalık was perhaps unpopulated in that era (Psarros 2004, 2).

The lack of written records concerning Ayvalık caused some debates related with the establishment of the settlement. There are two main opinions; one Turkish, one Greek, and they both interpret the process in the benefit of their nation.

The Greek scholars[25] suggested that Ayvalık was used as a distribution point for the Aegean pirates and if these smugglers had actually settled there for business, then this was the first permanent settlement in Ayvalık (Psarros 2004, 4). In 1580, when Lesbos was assigned as the main navy base of the Ottoman Empire in the Aegean, certain obligations were introduced which resulted in the movement of the population to another place. According to the Greek approach, the first inhabitants of Ayvalık were these people who migrated from Lesbos Island (Psarros 2004, 4). Sakkari suggested that, there was a Turkish population in Ayvalık and when the Orthodox Greeks arrived, the Turks they moved to the neighbouring Turkish villages (Erim 1948, 11).

Turkish scholars on the other hand, argued that Ayvalık established by Turks sometime between 1430 and 1440 as a navy base (Aka 1944, 19). Its military character did not allow economical developments and in the second half of the 18th century Greeks moved to Ayvalık (Aka 1944, 19). The Turkish naval base was located on the slopes of the hill which controls the port area; this neighbourhood was called Taxiarhis in the 19th century and İsmet Paşa today. According to this explanation, Greeks migrated to Ayvalık and settled near the port area between 1750 and 1760 (Aka 1944, 22).

In the late 18th century, Ayvalık Greeks gained some privileges during the leadership of priest Oikonomos under the rule of Selim III. Although there is no

[24] Cunda (or Mochonisi in Greek) is the largest one within the Hektannesoi Islands.

[25] Yorgo Sakkari (his book *The history of Kydonies* was translated into Turkish within Hıfzı Erim's *Ayvalık Tarihi* book) and Psarros are the only two Grek researchers included in this study who are dealing with this subject.

written record supporting this event, it is believed that in 1773, the priest of Ayvalık, Oikonomos, achieved to make Ayvalık an autonomous settlement under the control of the Ottoman Empire (Aka 1944, 23). Charles Elliot, in his book *Turkey in Europe* (1908), remarked that Ayvalık had gained a special position after the 1774 Agreement between Russia and Ottoman Empire. This agreement allowed the establishment of foreign consulates along the Ottoman port settlements which helped the development of international trade in Ayvalık (Bayraktar 1998, 6).

Until the early 19th century, Ayvalık developed rapidly. The main economic activity was production of agricultural goods and especially of olive (Yorulmaz, 2004). Also the Turkish population had been evicted from Ayvalık except some governors.

After the Turkish – Venetian wars there had been a migration from the Aegean settlements to Ayvalık. This population increase caused the settlement to grow towards the south part of the river which divided Ayvalık into two in a north- south axis. Before the mid 18th century, the fourth neighbourhood had been established (Psarros 2004).

In 1770, the slopes of the hills near the city-centre began to be occupied by another immigrant group which came from the Peloponnesian after the Ottoman – Russian war in 1769. They built up another neighbourhood with about 800 households (see fig. 3.1). These migration movements made Ayvalık a Greek dominant settlement. Turkish people became the minority within this context (Psarros 2004, 10).

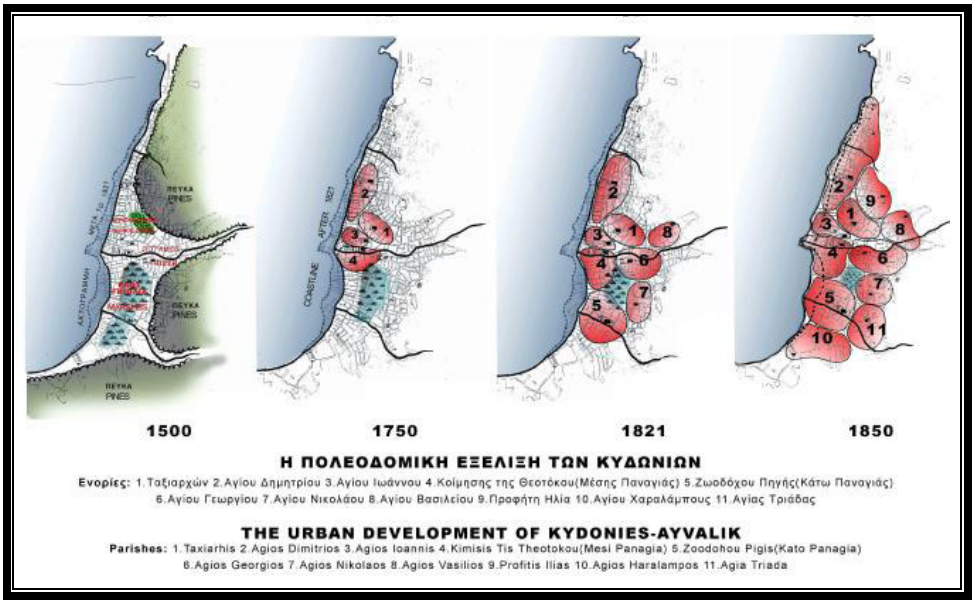

Figure 3.1: Physical development of Ayvalık (Psarros 2004, 10).

Before the 1821 revolt, more than a million kilograms of olive oil was produced. Soap was produced in forty workshops and exported to Russia and the Balkans. Wheat was imported from Macedonia, grinded and exported to the internal market of the empire. Wine and salt production also took place in the settlement. Eventually, Ayvalık looked like a metropolis with all of these economic activities.

3.2 The 1821 Revolt

Although there were plenty of revolts and upheavals before the 19th century against the Ottoman authority, none of them ended up with a territorial separation from the empire (Arıkan 1988, 571). But in the 18th and 19th centuries, when the authority of the empire was weakened, the efforts for independence by the minorities became more significant (Clogg 1997, 30).

Greece was one of the countries established by the Greek minority of the Ottoman Empire (Arıkan 1988, 571). The independence movements started with

the 1821 Morean Revolt and ended up in 1847 when the modern boundaries were defined (Clogg 1996).

While Ayvalık gained economic power owing to its self determinant political structure, nationalistic movement began to spread throughout the Ottoman Empire. For the Ottoman palace Greeks were a part of the *Orthodox milleti*, but the idea of nationalism revitalized the *consciousness of being Greek* (Clogg 1997, 40). Libraries and academies were established in order to spread ancient Greek culture. Influential trade bourgeoisie of the 19th century which was mainly consisted of minorities were the prior economic resource for this nationalistic movement. So the establishment of Greek academies in the important trade centres was not just a coincidence.

With its academy accepted as the most advanced centre of education within the Greek world[26], Ayvalık became an essential diffusion place for the Greek nationalism (Clogg 1996, 77). The pure Greek population and trade bourgeoisie of Ayvalık also determinative factors in terms of this settlement's role within the rising nationalistic movement.

So when the Morean revolt began in 1821, Ayvalık remained ignorant for a few months because of the governmental pressure against an upheaval (Arıkan 1988, 587). On the 3rd of September in 1821, Ayvalık joined the Greek revolt and a conflict between the inhabitants and the Ottoman army occurred (Aka 1944, 29). Ottoman Empire suppressed the revolt however, during the three days the revolt lasted 100 Ottoman soldiers and 2.000 inhabitants of Ayvalık were killed. The rest ran away with ships, some drowned in the sea and 3.000 of them became hostages (Arıkan 1988, 588).

[26] Besides the ancient Greek culture, the education was based on enlightenment thought (Clogg, 1996, 265).

3.3 The Revival

Gathering strength took some time for Ayvalık after this destruction (Arıkan 1988, 588). Until 1832, Ayvalık remained abandoned, and then the empire allowed 20.000 natives to return back to the settlement (Arıkan 1988, 588). In 1850, most of the Greeks turned back to Ayvalık, and repaired their physical environment. During this renewing process, they moved the ruins of the demolished buildings to the sea (Psarros 2004, 5). This caused a change in the coast line and made; it move 100-200 meters southwards (Psarros 2004, 5). The real estate properties of Ayvalık were controlled by the governor of Lesbos after the revolt, but they were given back to their original owners when they returned to Ayvalık. By a legal decision in 1832, Ottoman Greeks took their properties back and were excused from taxes for two years, so that they could revitalize their economy (Aka 1944, 35). But Greeks could not gain back their autonomy and Ayvalık went under the control of Balıkesir in 1843 (Aka 1944, 30)

Ayvalık, which had been devastated and depopulated in 1821, reached a Greek population of 35.000 by 1896 (Clogg 1996, 189). In the last quarter of the 19th century, there were 22 olive oil factories, 1 prina factory, 30 large and small soap workshops. There were also 6 floor mills, 80 tannery, 6 pharmacy, 20 doctors, 10 lawyers, the population in this period reached to 30.000. There were 5.500 stone houses and almost 300 offices (Aka 1944, 37).

The pioneering trade product was olive oil and the port was the only entrance for this activities. Every year the port was used by 600 ships and the total weight of the goods were 125.000 kilos per year (Aka 1944, 36). The capacity of the Ayvalık port probably remained rather deficient beside the production size. In 1880, the narrow and shallow entrance of the port was enlarged by a foreign capital firm for 20.000 liras and the firm also gained the right to run the port for 22 years. This infrastructural investment allowed larger ships to enter the port. (Aka 1944, 36)

In 1889, there were 4607 households in 11 neighborhoods and the population was 19.842. At the beginning of the 20th century (1908), the

population was 23.320 and there were 5.352 households. According to the 1908 statistics Ayvalık had 114.767.000 m2 of cultivated land and 75.000.000 m2 of them were olive grooves. The average olive oil production per year was 6,5-7,5 million kg and there were 78 olive oil presses, 70 olive oil factories and 28 soap factories (Cengizkan 2004, 20).

Greeks' efforts for independence once again took speed after the First World War and this time they occupied Ayvalık on the 27th of May in 1919 (Aka 1944, 33). Ayvalık was under the Greek rule for more than four years, this period eventually ended with the Turkish War of Independence in 1922 (Aka 1944, 34).

3.4 Conclusion

Although Ayvalık was a small village in the 17th century, appropriate conditions helped its rise. In the 19th century, port settlements of Levant gained importance with the accession of the Mediterranean to the global trade system (Tanrıkulu 1996, 142). Population movement from the Aegean Islands to the Anatolian coasts supported the economic revitalization in this period. Ayvalık was located within the hinterland of İzmir, which was the main trade centre of the Western Anatolia, and this helped the settlement's development both economically and culturally. Minorities' effective role in international trade was also important for Ayvalık since its population was totally Greek. All of these advantages raised Ayvalık's population to 40.000 in the early 19th century. But Ayvalık was also an essential centre for the Greek nationalism movement (Clogg 1996). When Ayvalık Greeks contributed to the 1821 revolt, the improvement period for the settlement paused for a few decades. The population was under 30.000 after the revolt in 1840s, but in the last quarter of the 19th century, Ayvalık gathered strength and continued its development process. With the permission given to foreigners to invest, Ayvalık kept developing. The infrastructural investments allowed the settlement to grow as a trade port. The population increased parallel to the economic development until the First World

War and the following Turkish Independence War caused a hiatus in Ayvalık's history.

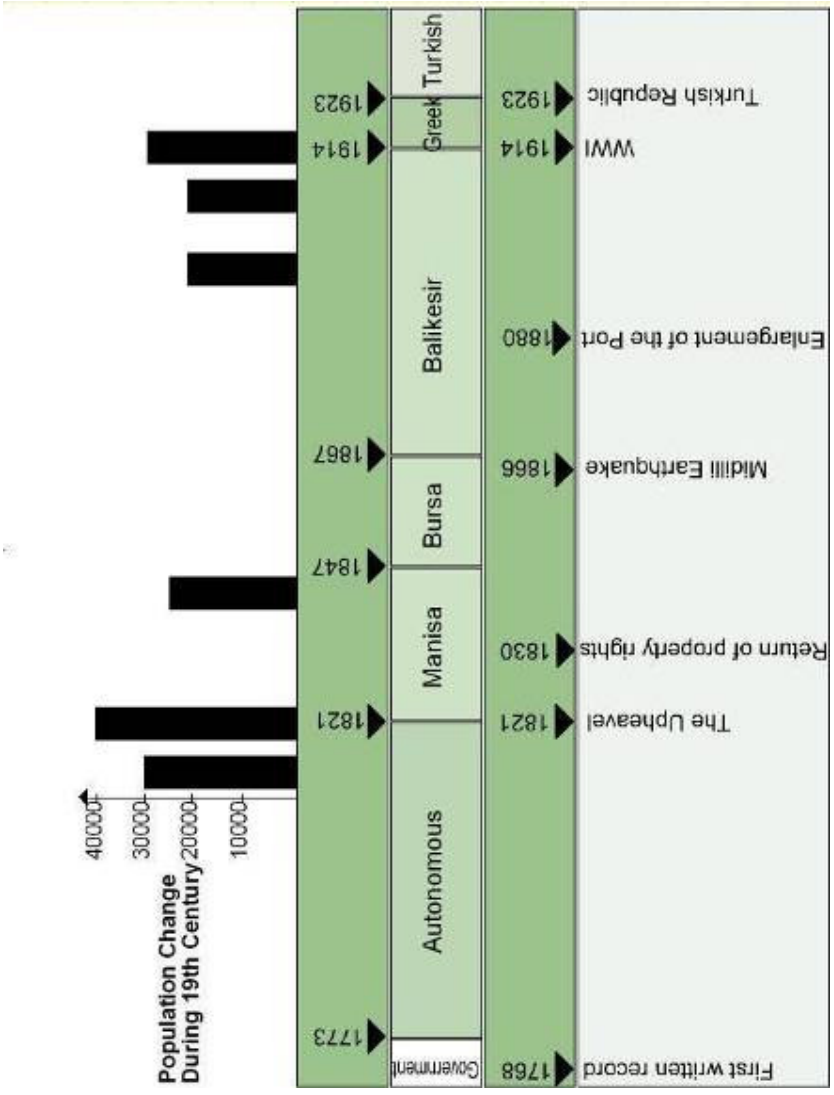

Figure.3.2 General view of Ayvalık in the 19th century.

CHAPTER IV

INDUSTRIAL CHANGE AT AYVALIK IN THE 19TH CENTURY

19th century prepared the suitable conditions for the development of Ayvalık. Although not stable, Ayvalık went through a major development in this century especially in olive oil production and its technological improvement.

The traditional olive oil production techniques transformed into an industry in the last quarter of the 19th century. This change was triggered by the introduction of foreign capital to Ayvalık. Following the establishment of olive oil factories (see fig. 4.1) with foreign capital, the new technology spread throughout the settlement by the early 20th century, parallel to the foreign demand for olive oil.

In this chapter, the change in olive oil production activities will be examined from different points of view.

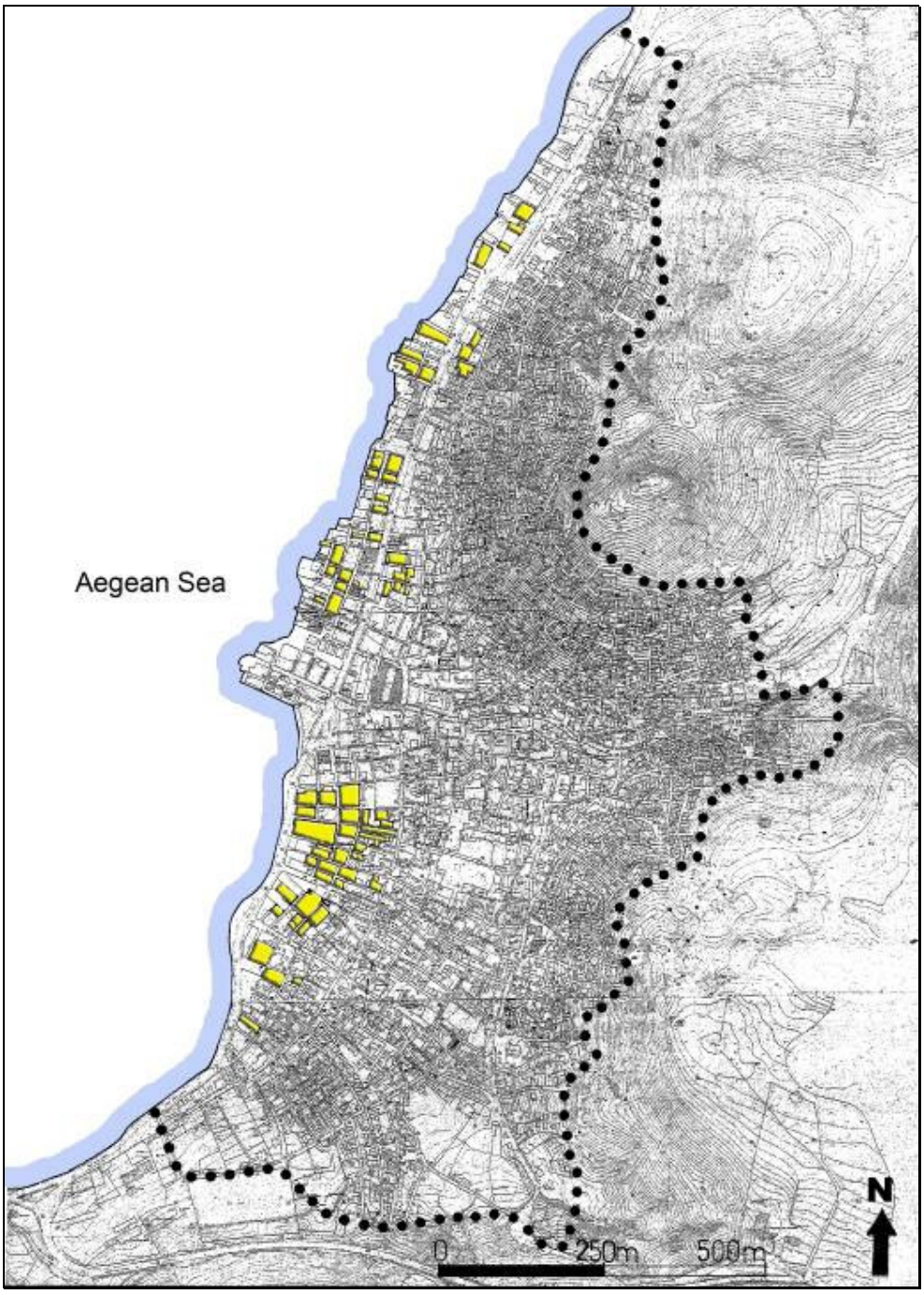

Figure 4.1: Distribution of the Industrial Buildings in Ayvalık dated to early 20th century.

4.1. Physical Development of the Industrial Buildings

The development of the urban physical environment in Ayvalık started in the second half of the 18th century. During the 18th century, Ayvalık was spread across the slopes of a hill overlooking the natural harbour area. The settlement spread to the west and southwest slopes of the hill towards the coastline and covered approximately 15 ha by the 1750s (See Fig. 4.2) (Psarros 2004, 10). These areas were the core of the settlement. Historical sources do not mention anything about the olive oil production in Ayvalık in this period, but since Ayvalık was surrounded by wide olive groves, one may suggest that there was at least domestic production during the 18th century. As Yıldırım Gönül (2004, 49) suggested, the entrance floors with less ornamented façades of Ayvalık houses were probably used as workshops and warehouses for domestic needs. The early settlers of Ayvalık were probably producing their own olive oil within their houses.

The settlement continued to develop and grow as a result of the migration of Morean Greeks to Ayvalık (Bayraktar 1998, 7). This growth was mainly towards south and lasted until the Greek Revolt in 1821. (See Fig. 4.2). The immigrants mostly settled on the east and south sides of the core area mentioned above. Ayvalık had its most sparkling days during this period due to its autonomic status.

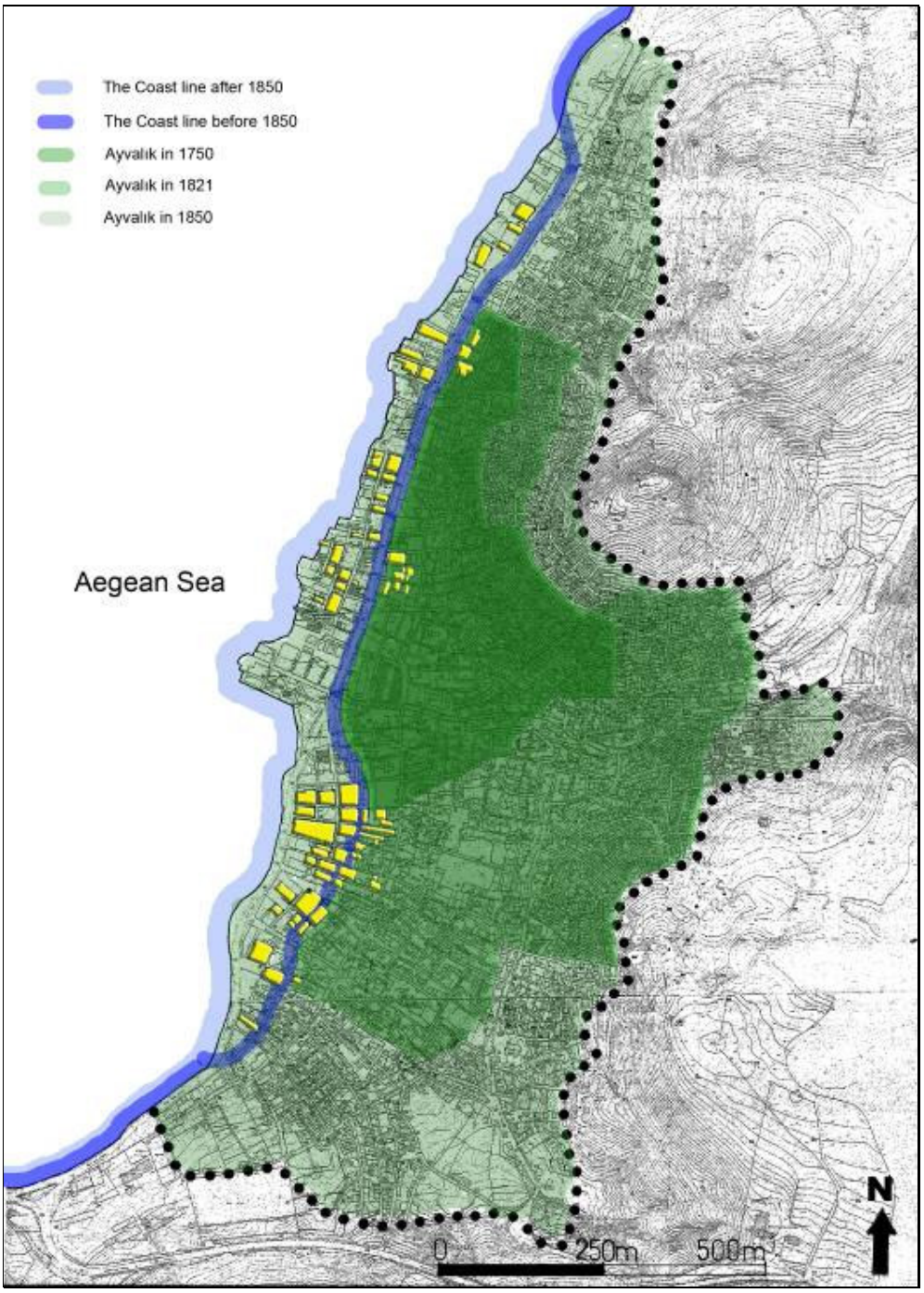

Figure 4.2: Historical Development of Ayvalık.

In this period, there were 40 olive oil presses producing approximately 1,3 million kg of oil. These oil presses were probably different than the equipment

that would be used in domestic production, therefore they may be classified as parts of workshops. The location of these workshops and their relation with the settlement are unknown since the settlement of this period was badly destroyed during the Greek Revolt of 1821 (Arıkan 1988, 588).

Most of the buildings were severely damaged during the revolt and their ruins were swept to the sea, which created a fill area in the sea and changed the coastline (See Fig. 4.3) (Psarros 2004, 5). Subsequent to the revolt, there was a hiatus in the settlement's growth since its population was exiled (Psarros 2004, 5). After 1850s Ayvalık regained strength and its growth continued. New neighbourhoods were established both in the north and south. On the west of the settlement, the fill area had also developed into an industrial and commercial quarter. It is in this period that Ayvalık reached its largest macro-form (See Fig 4.2). According to the written records there were 78 presses (workshops) and 7 factories producing olive oil in the last quarter of the 19th century. These buildings were located along the coastline, mostly on the fill area. In following decades, especially the number of olive oil factories increased in the settlement, during the first quarter of the 20th century the number of workshops remained the same but the number of factories increased to 70. These buildings were also located along the coastline in two main clusters.

Unfortunately, information on the olive oil production buildings and their impact on the settlement are scarce. Some estimation can be done depending on later periods. The term "press" was probably used for olive oil workshops which were also used during the 19th century. The location of these workshops could have been along the coastline like the later periods in order to take advantage of the sea water and be closer to the port. However, the main impact of the changes in olive oil production technology on the settlement was the increase in the number of workshops and the introduction of the "factory" buildings which were totally new for Ayvalık. Unlike the single space, single storey, small and flexible workshop buildings which could easily be converted to be used for another function, factories were the largest buildings of that period which were designed only for olive oil production, and had a huge effect on the physical environment

of Ayvalık. As these buildings were located along the coastline, they provided a silhouette for the settlement.

As a result, the small coastal settlement of the 18th century turned into a regional industry town during the 19th century.

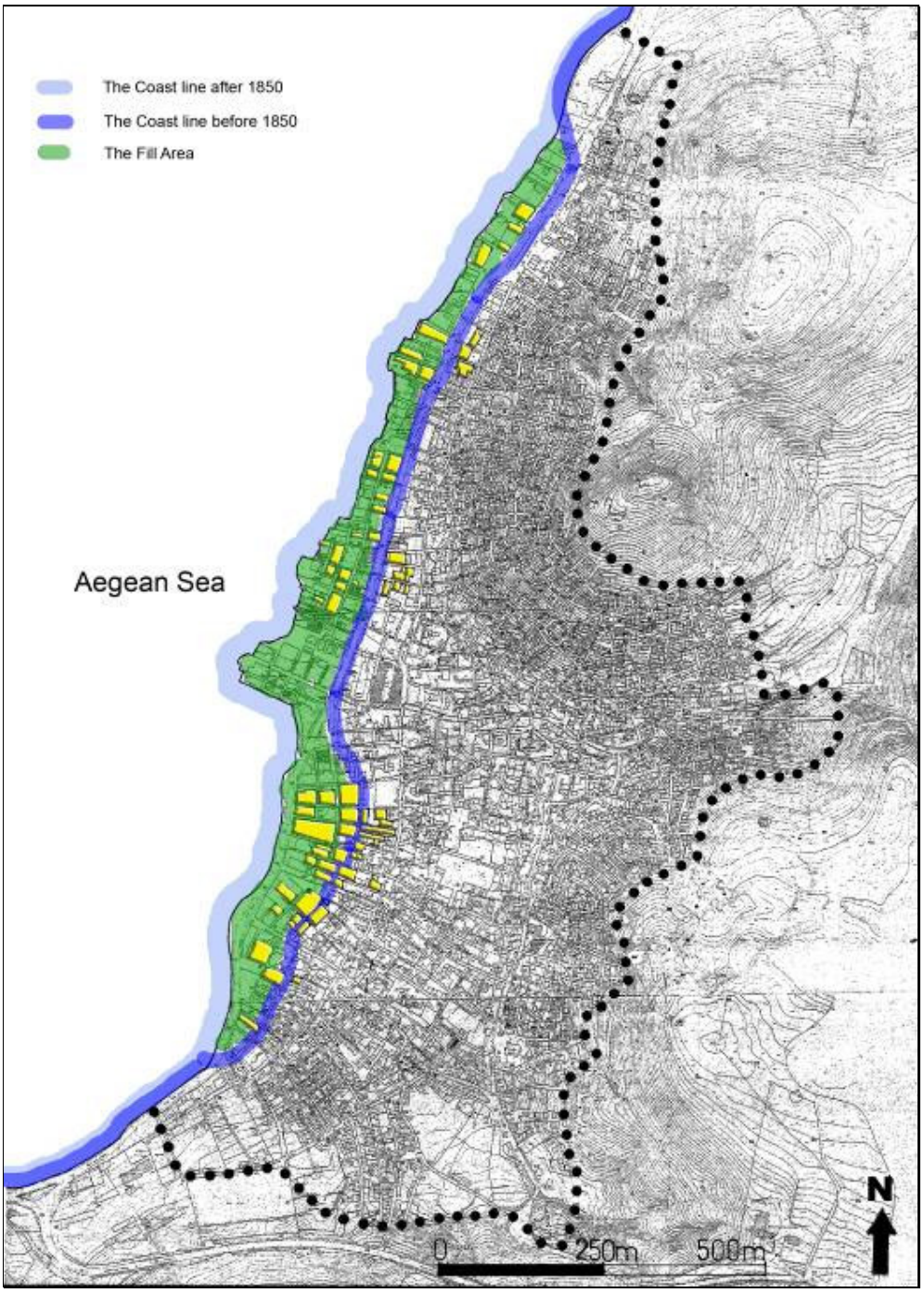

Figure 4.3: The fill area which was a composed after the 1821 revolt.

4.2. Development of Technology in the Olive Oil Industry in Ayvalık

From the establishment of the settlement to the early 20th century and even today, Ayvalık's economy is based on olive oil. Olive oil production technology has certainly changed in time. It is clearly known that Ayvalık had a pioneering position in olive oil production technology within the Ottoman Empire during 19th century, although the production technology before the 19th century is not very well known. According to the interviews with local people, mills working with human and/or animal power and screw-presses were the characteristic components of early production. Unfortunately, no further information could be collected.

From the Greek and Roman periods onwards, olive oil production technology remained more or less the same. [27] Although there were numerous kinds of techniques and tools developed, they did not make a great deal of difference.[28] Until the last quarter of the 20th century, that is when continuous systems were introduced, olive oil production has not changed much in Ayvalık except for the energy source.

Steam power, which is one of the symbols of industrial revolution, gave factories the opportunity of mass production, creating a great advantage over human, animal or water-based energy sources. Steam power technology was applied in olive oil industry during the second half of the 19th century in Europe and then was transferred to Ayvalık around the same period. In the rest of Anatolia, the technology began to be used during the middle of the 20th century. Thus, Ayvalık gained a pioneering reputation. Olive oil industry was interrupted with the First World War followed by the population exchanges between Greece and Turkey. Immigrants mainly from Lesbos and Crete sustained the industry but their adaptation to the settlement also took some time.

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[28]Frankel, R (1999) prepared a wide catalog about the tools and equipment used for olive oil production in antiquity in Mediterranean.

It is generally accepted that the 19th century olive oil factories were used until the last quarter of the 20th century. When the municipality prohibited industrial facilities to function inside the settlement, all enterprises were moved out of Ayvalık to an area near the İzmir – Çanakkale highway. Today, there is only one factory working within the centre (Building # 1).

4.3 Structure of Olive Oil Production

There were three forms of olive oil production in Ayvalık: House production, workshop production and factory production. These three forms represented different scales of production, techniques and buildings in Ayvalık.

House production had been the basic production type starting from the establishment of Ayvalık. As Yıldırım Gönül suggested, the entrance floors of the houses served as workshops and also warehouses for household production (Yıldırım Gönül 2004, 49). The people of Ayvalık probably produced their own olive oil in their houses and also marketed it in a neighbourhood scale. This production type was very small scaled. A household should have been producing approximately 100 – 300 kg olive oil per year.

After Ayvalık became an exportation centre of olive oil, house production was probably not sufficient anymore. Thus workshops with larger production volumes began to be used in olive oil production. The so-called workshops were particularly used for manufacturing activities, production or storage. These special buildings must have required higher technology than simple household production.

In the last quarter of the 19th century, factories entered as the third form of buildings into the scene in Ayvalık. This new production form was a result of the English industrial revolution and provided the opportunity of mass production. It was brought to Ayvalık by the English enterpriser's investments. These new production buildings spread throughout the settlement and became a large part of the Ayvalık olive oil production in the last quarter of the 19th century and the first

quarter of the 20th century. With the factory based production, the modern technology began to be used in Ayvalık parallel to Europe. These new factory buildings were designed especially for mass production of olive oil.

Ayvalık sustained these three forms of olive oil production together during the last quarter of the 19th century and the first quarter of the 20th century.

4.4. Social Issues

Dispossession of villagers and emergence of a labour class was one of the symbols of Industrial Revolution (Pamuk 1994, 2). Since Ottoman Empire did not experience an industrial revolution in a true sense, a labour class did not emerge, not in Ayvalık as well. There was no definite labour class or labour class quarters formed within the settlement.

In household production there was no need for extra work force but with the workshop and especially factory production there should have been a need for labour. In a 19th century olive oil factory there were 10-15 people were working depending on the number of the mills (Boynudelik 2007, 88). Workshop production was probably required 5-8 workmen. The collection of olives must be done with extra work force than household members. However, physical remains, demonstrating such a labour class differentiation, is missing in Ayvalık.

Olive oil production was a seasonal activity (see figure.4.5) and the workforce was arranged seasonally and probably was provided from neighbouring villages. This was possibly the same for the foreign investment factories. One question that remains unanswered so far is whether there were any qualified personnel to manage the factories and teach the principles of this new production technique like there were in the other industrial sectors in Ottoman Empire.

4.5. Production Volume

The quality of oil depends on the quality olives of the region. Olives of Edremit Bay were especially suitable for oil production. In the International Paris Fair in 1867, this region's olive oils won the golden medal (Yurt, 1128). Since olive oil was a profitable product, it was used as a security against the Europeans by the Ottoman Empire for the 1860 loans (Yurt, 1128).

Ayvalık produced 1.282.000 kg of olive oil per year in the first quarter of 19th century before the revolt of 1821 (Yurt, 1128). Every year, the port was used by 600 ships and the total weight of the goods was 125.000kg (Aka 1944, 36).

In the last quarter of the 19th century, there were more than 800.000 olive trees and the total production per year increased more than four times compared to the early 19th century and reached to 5 million kg (See fig. 4.4) (Aka 1944, 38).

According to the 1908 statistics, Ayvalık had 114.767.000 m^2 of cultivated land and 75.000.000 m^2 of them were olive groves. The average olive oil production per year was 6,5-7,5 million kg (Cengizkan 2004, 20).

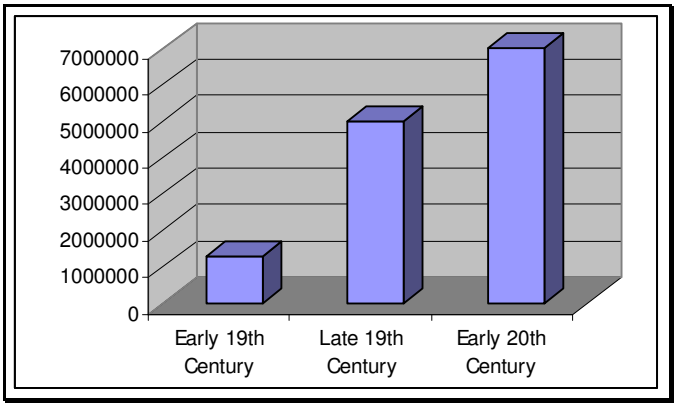

Figure 4.4: Olive Oil production per year (kg) in Ayvalık.

Although in the early 19th century Ayvalık was an autonomous settlement free of tax, this chart shows that it did not have an effect on production volume. It was when the autonomy was lost at the end of the 19th century; factories almost

tripled their production volume. The main reason for this was the development in mass production techniques in the second half of the 19th century.

4.6. Market Relations

Ayvalık had been an important olive oil production centre strarting from the time that it was established. Olive oil demand of the Ottoman Palace was met by production at Ayvalık during the 18th century. Russia and Balkans were the other places that Ayvalık's olive oil was exported to. Until Ayvalık gained autonomy in the last quarter of 18th century, its income was limited by the government duties. Subsequent to the autonomy, Ayvalık began to export its goods, especially olive oil, to Europe without duty. In order to support these trade relations, Europeans established consulates in Ayvalık, i.e. Greece, Great Britain, France, Italy, Norway (Yorulmaz 1977, 64). These relations continued until the First World War.

Figure 4.5: Twelve months of olive oil production (Scherzer 2001, 69-70) (Boynudelik 2007, 53).

4.7. Environmental Issues

Industry at Ayvalık was polluting the air and the sea just like it does today. There was a sewer system to collect the refuse; which were then discharged into the sea.

Plate 4.1: Connection from an olive oil warehouse floor to the canalization system, Building # 3 (The key map for the building numbers are given in Appendix B).

The odour that spread all over Ayvalık during olive oil production is considered almost a 'special characteristic' of the region rather than 'pollution'. The smell that is caught today while travelling on the İzmir-Çanakkale highway from the factories nearby was probably much denser during the 19th century in Ayvalık since all factories were located close to each other along the settlement's centre. This characteristic feature remained until the factories were moved out of the settlement's centre.

4.8. Architectural Features of the Industrial Buildings

Industrial buildings had a dominant character in the settlement pattern of Ayvalık. Today, chimneys rise as a proof of the settlement's brilliant industrial past (See Figure.4.6). These buildings were located along the coastline on the north and south of the central business district. Thus, the industrial buildings were dominantly visible both from the sea and from within the settlement.

Figure 4.6: Rising chimneys over Ayvalık
(http://www.yazturizmi.com, August, 2007).

Chimneys are not the only significant feature in an industrial building; architectural forms also reflect the industrial character of a building. Architectural forms of industrial buildings can roughly be differentiated by naked eye from residential or commercial buildings but a complete typological classification of 19th century factories at Ayvalık has not yet been done. Suna Kabasakal, who studied a part of the industrial neighbourhood on the south side of the port of Ayvalık in her master's thesis, defined a typology for the buildings in her study area, most of which are industrial buildings (see Appendix C) (Kabasakal 1989, 35). It is possible to loosely relate industrial buildings with an architectural typology which is very important for identifying other industrial buildings. Also

identifying physical characteristics of 19th century industry buildings in Ayvalık could shed light to studies in other settlements.

Kabasakal examined the buildings in her study area under three main types: 1, 2 and 3. Type 1 includes one storey buildings with a hip roof. This kind of buildings usually has one entrance and two windows on its front façade. In Type 2, there are also one storey buildings with a similar façade to Type 1, but the main difference between these two types is the form of the roofs. Type 2 has a gabled roof and triangle fore on front façade. Type 3 is the two or three storey buildings with both hip and gable roofs. Their frontal façade usually has a symmetrical form. Some of the gable roofed buildings also have rose windows on their triangle fore.

During the survey, the buildings that are studied in this thesis were re-defined according to this typology. A more comprehensive analysis of this typology with a suggested functional distribution of the industrial buildings is presented in the following chapter.

Plate 4.2: 1A type olive oil warehouse, Building # 29 (See Appendix B for the exact locations of the numbered buildings).

Plate 4.3: 1D type warehouse or workshop, Building # 38.

Plate 4.4: 2A type warehouse or workshop, Building # 69.

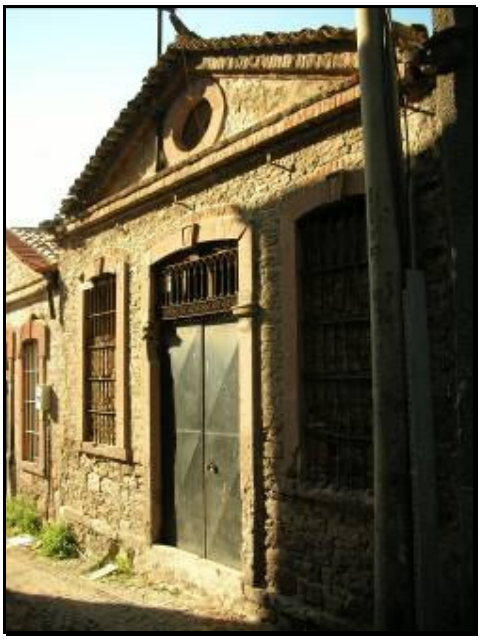

Plate 4.5: 2B type warehouse or workshop, Building # 42.

Plate 4.6: Type 3A an olive oil complex, Building # 40.

Plate 4.7: Type 3D an olive oil factory, Building # 2.

Plate 4.8: Type 3D, a soap factory. Building # 63.

Plate 4.9: 3D type a possible factory, Building # 83.

Plate 4.10: A with unidentified typological class Building # 72.

4.9. Architectural features of and production process at the Industrial Buildings

During the survey, it was found out that there were actually four kinds of buildings used in olive oil production. These are factories, workshops, warehouses and shops. The general character of the production process (See Fig. 4.7) will be defined through establishing a relation between the architectural features, based on the observations, interviews and written sources.

4.9.1 Factories

Factories were the main mass production structures. These buildings were two storey buildings, almost half of which had courtyards.

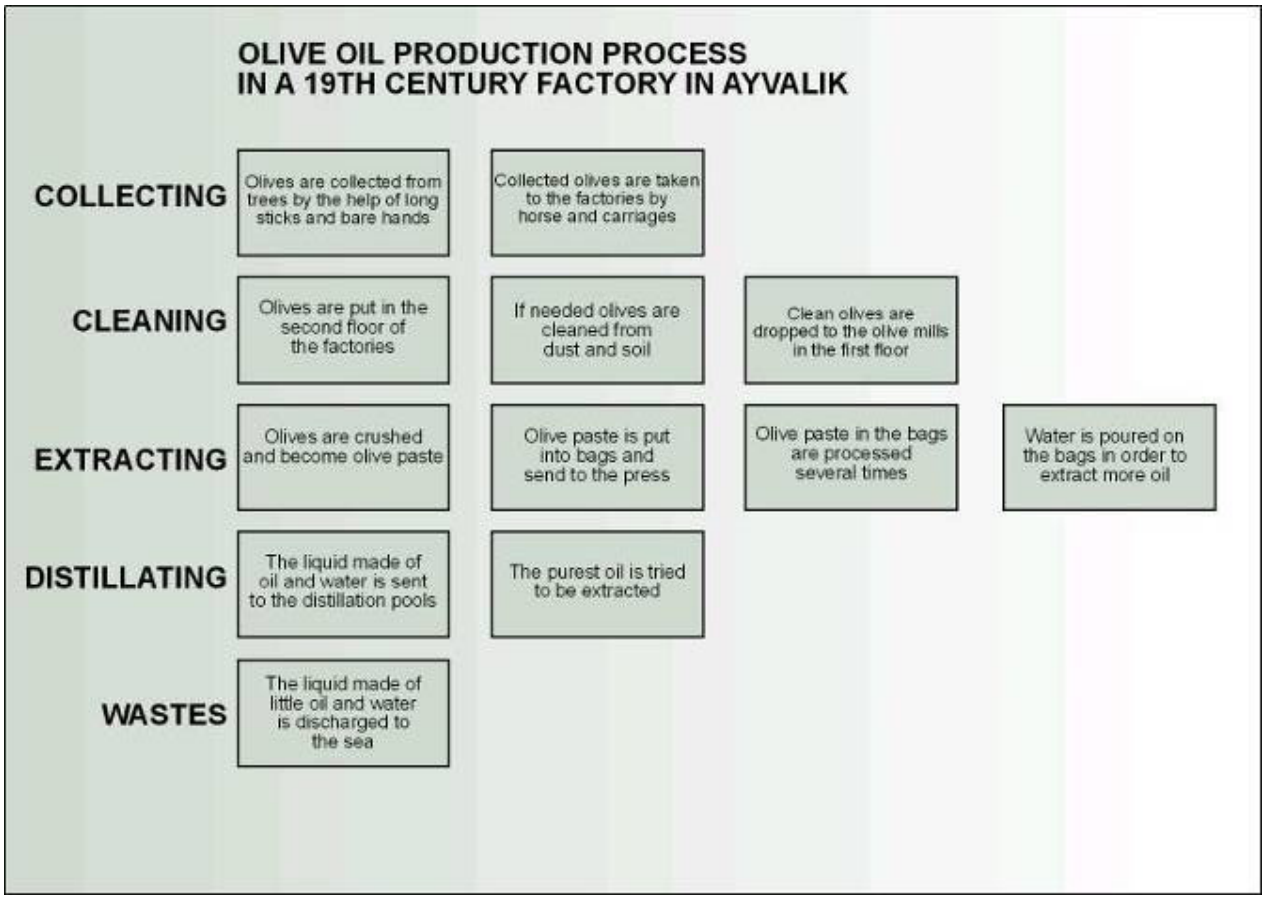

Figure 4.7: Olive oil production process in a 19th century.

The production process manifested itself in physical feature of the factories and complexes in a particular way. Courtyards were probably used for pre-storage facilities for raw material and products, but the main raw material storage took place on the second floor. Firstly, if needed, olives were cleaned from leaves and soil in this area. These floors were generally not divided into different rooms but used as one large space. Then, clean olives were dropped to the mill located on the first floor.

Plate 4.11: Wooden Channels, Building # 1.

Plate 4.12: Wooden Channels, Building # 33.

The connection between the two storeys was provided by wooden channels, so that raw materials got to the first floor through these channels where they began to be processed. Depending on the production volume of the factories, the number of the wooden channels and related mills increased. Mill stones (usually two) grinded the olives in an iron or stone crushing surface.

Plate 4.13: Olive Mill, Building # 19.

Plate 4.14: Olive Mill, Building # 19.

The first oil that came from the crushing process is the most valuable and high quality extra virgin olive oil. This very first product was collected in a container and the main product of this process, olive paste, was put in bags.

Plate 4.14: Container for extra virgin oil. It had direct access from the olive mill, Building # 33.

Then, olive paste was put in bags that were usually in form of an envelope form, ring-shaped bags were also used.

Plate 4.15: Envelope form olive paste bags, Building # 33.

Olive paste in bags proceeded to the presses. Stabilized bags were put in the presses and olive extraction started to take place.

Plate 4.16: The rod for stabilizing bags, Building # 19.

Olive presses were used for the same group of bags for several times, after the amount of oil that is extraction was decreased, preferably hot water was poured on the bags in order to exploit more. Usually sea water was used in this process, which is more effective in the exploitation process and was provided easily in Ayvalık.

Plate 4.17: Modern and 19th century olive presses, Building # 33.

Plate 4.18: Late 20th century olive press, Building # 19.

Plate 4.19: Dumped olive oil presses from 19th century, building # 16.

Since oil was extracted from paste with the help of water, oil had to be separated from water. For this purpose, distillation pools were used. Oil, due to its

higher density, remains above the water and could be transferred to the next pool. After all of the oil was transferred, the connections between the pools were closed. With this process, purest oil was extracted. Waste liquid, mostly composed of water and very little oil, was discharged into the sea.

Plate 4.20: Distillation Pools, Building #8.

Plate 4.21: Distillation Pools and Olive Picking Sticks, Building #19.

Plate 4.22: Channels providing connection between olive presses and distillation pools, Building # 19.

Plate 4.23: Distillation Pools, Building #33.

Processed olive waste in the form of paste, which is called *prina*, is also a product of this process. This waste was used as fuel in olive oil factories, since factories used steam power.

Plate 4.24: Exploited olive paste residue also called *prina*.

Power for mill and presses were provided by a steam engine and it required special structures such as chimney, a steam boiler and an engine.

Plate 4.25: Steam engine with Greek writing on it, Building # 16.

Plate 4.26: Steam boilers, Building # 16.

Plate 4.27: Old steam boiler today used as water reservoir, Building #1.

Plate 4.28: Chimney base inside building, Building # 33.

Plate 4.29: Hexagonal chimney decorated with the cross symbol, unique in Ayvalık. Usually conic chimneys were built with no decorations, Building # 16.

4.9.2 Workshops

Ayvalık followed the technological improvements that took place in terms Europe in olive oil production. New production techniques were imported from Europe in the last quarter of the 19th century, but spread of these new techniques to all of the industrial production units took some time. Therefore, there were small workshops in addition to factories. Although is insufficient evidence on the production processes at the workshops, it may be suggested that, there were no special need for workshops, and thus, standardization in their interior design was unnecessary. Machinery and tools were set in single- space buildings.

The power source for olive oil workshops could not have been steam, for there was not enough space for steam engines. Probably human or animal power was used for the mills and the presses. However, the exact techniques that are used in this process is not very well understood.

4.9.3 Warehouses

Olive oil was stored in warehouses. There are only three buildings definitely identified as olive oil warehouses. These were one storey buildings and usually were situated adjacent to a similar building. Olive oil was stored in huge storage jars which were buried half-way into the floor.

Plate 4.30: Storage jars, called dolia in ancient times, Building # 34.

Plate 4.31: Storage jars removed from their original context, Building # 29.

4.9.4. Shops

There are only two buildings identified as olive oil shops as part of the olive oil warehouses. There is neither a physical evidence nor information about these special shops for olive oil. According to one scale we came across in an olive oil warehouse, it is reasonable to think that in the warehouses in Ayvalık marketing operations also took place.

Plate 4.32: A 19th century scale imported from Great Britain, Building # 34.

As a result; depending on the written records and field work that were presented in this chapter, a table (see fig. 4.8) was designed aiming to fill the missing information on olive oil production in Ayvalık through 19th century. The data were adapted by using simple calculations.

	Olive Groves	Olive Trees	Production per year	Workshops	Factories	Population	Local consumption	Exportation
1st Quarter of the 19th Century	1.400 ha	211.000 trees	1.3 mill. kg	40	0	40.000	880.000 kg	420.000 kg
4th Quarter of the 19th Century	5.300 ha	800.000 trees	5 mill. kg	78	7	20.000	440.000 kg	4.560.000 kg
1st Quarter of the 20th Century	7.500 ha	1.132.000 trees	7 mill. kg	78	70	35.000	770.000 kg	6.230.000 kg
Today	10.000 ha	-	-	59	32	-	-	-

Figure 4.8: A suggestion for the missing information on the 19th century olive oil production in Ayvalık.
*Further information is given in the next page.

* The underlined information is taken from various sources given within this chapter. The rest of the information is found through simple calculations and simple estimations only.

* The local consumption is calculated from the olive consumption of the modern Greeks which is 22kg per year.

*According to these calculation the estimations below could also be made;

From one olive oil tree, approximately 6,25 kg of oil could be extracted.

From 1 ha of olive grove, approximately 930 kg of oil could be extracted.

In 1 ha of olive grove, there were approximately 150 olive trees.

In an olive oil workshop approximately 32.000kg of production could be made per year.

In an olive oil factory 358.000 kg of production could be made.

CHAPTER V

HOW THE OLIVE OIL PRODUCTION PROCESS DETERMINED THE URBAN PATTERN OF AYVALIK

The olive oil production had always been the most important activity for the economic development of Ayvalık. However in the 19th century, when the new technological improvements in industry reached Ayvalık through English capital, industrial manufacturing of olive oil began. The spread of this industrial production to the whole settlement during the late 19th century and early 20th century changed the scale of production, technology, and introduced new buildings, i.e. factories, to Ayvalık. These changes had a determinant role in the urban pattern of the settlement including its silhouette.

This industrial quarter of the settlement will be examined considering the reasons behind the choice of location and how these industrial activities determined the settlement pattern, through a discussion of the relationship between the industrial buildings and other components of the settlement.

5.1. Industrial Activities and Sea

Ayvalık is a coastal settlement and has a close relationship with the sea. Earlier, it was first situated on the slopes of a hill and a little far from the coastline. But during its development, natural limitations pushed the settlement into a triangular form and the settlement concentrated along the coast line.

The first settlement was approximately 150m west of the coastline, towards inland. At the end of 1750s, there was 500m of coastline. As the settlement developed and had its most sparkling days in the first quarter of the 19th century, the coastline also developed together with the rest and doubled its length reaching to 1 km. However, the most significant changes in the relationship between the settlement and the sea occurred after the second half of the 19th century. When the settlement was destroyed because of the conflicts during the 1821 revolt the debris were dumped into the sea. Thus of a fill with a width of approximately 100m created a 1,4 km long coast line.

When the industrial development began and space became necessary for new structures, this fill area provided the much needed. The new industrial buildings hasdeveloped in this fill area, changing the silhouette of the settlement. Before this technological development, Ayvalık had a rural character and its silhouette probably represented this character with a residential vista. Factory buildings and other secondary industrial buildings located on the fill area gave the settlement a much more industrial character with large volume structures and chimneys.

According to the analysis of how the industrial buildings were located with respect to the sea, it can be said that approximately 90 percent of the industrial buildings were situated within the 250m range from the coastline (see fig. 5.1). Only ten percent of the buildings were out of the 250m range but still not further than 350m from the sea. This analysis clearly shows the close relationship between the industrial buildings and the sea.

In this relationship, the sea had a determinative role for the selection of location for the olive oil production. Since the sea took part both in the production and post production processes of oil production, a position closer to the sea was naturally preferred. The fill area was an undeniable advantage for the industrial buildings since it provided suitable space for new structures.

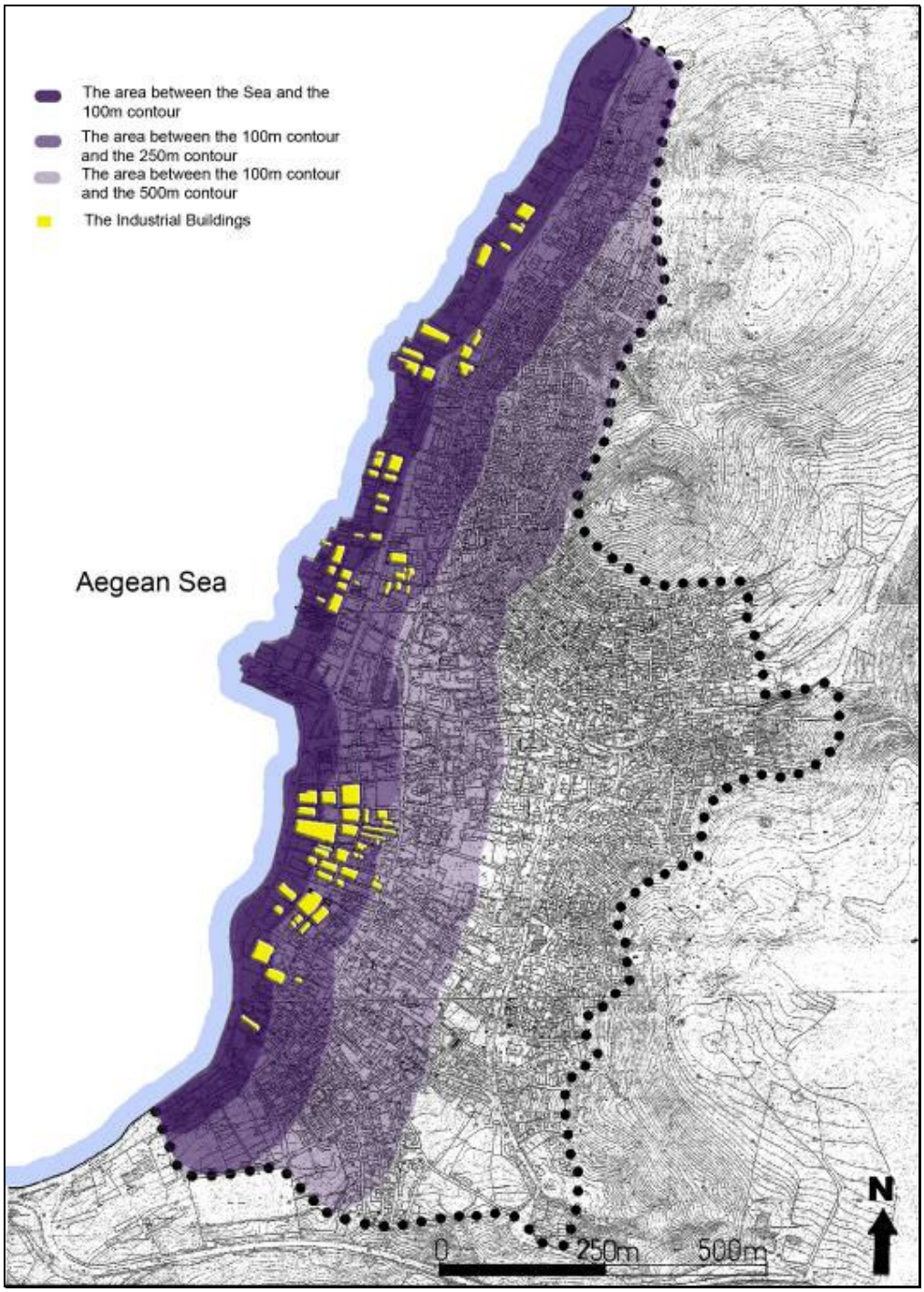

Figure 5.1: The relationship between the 19th century industrial buildings and the sea.

5.2. Industrial Activities and Topography

Ayvalık is located between three hills and the sea. The steep topography of the settlement eases towards the sea on the west (see fig. 5.2). The settlement was first on the west slope of a hill and then spread to the other hills and the sea shore. Olive oil production took place on the flat land by the sea.

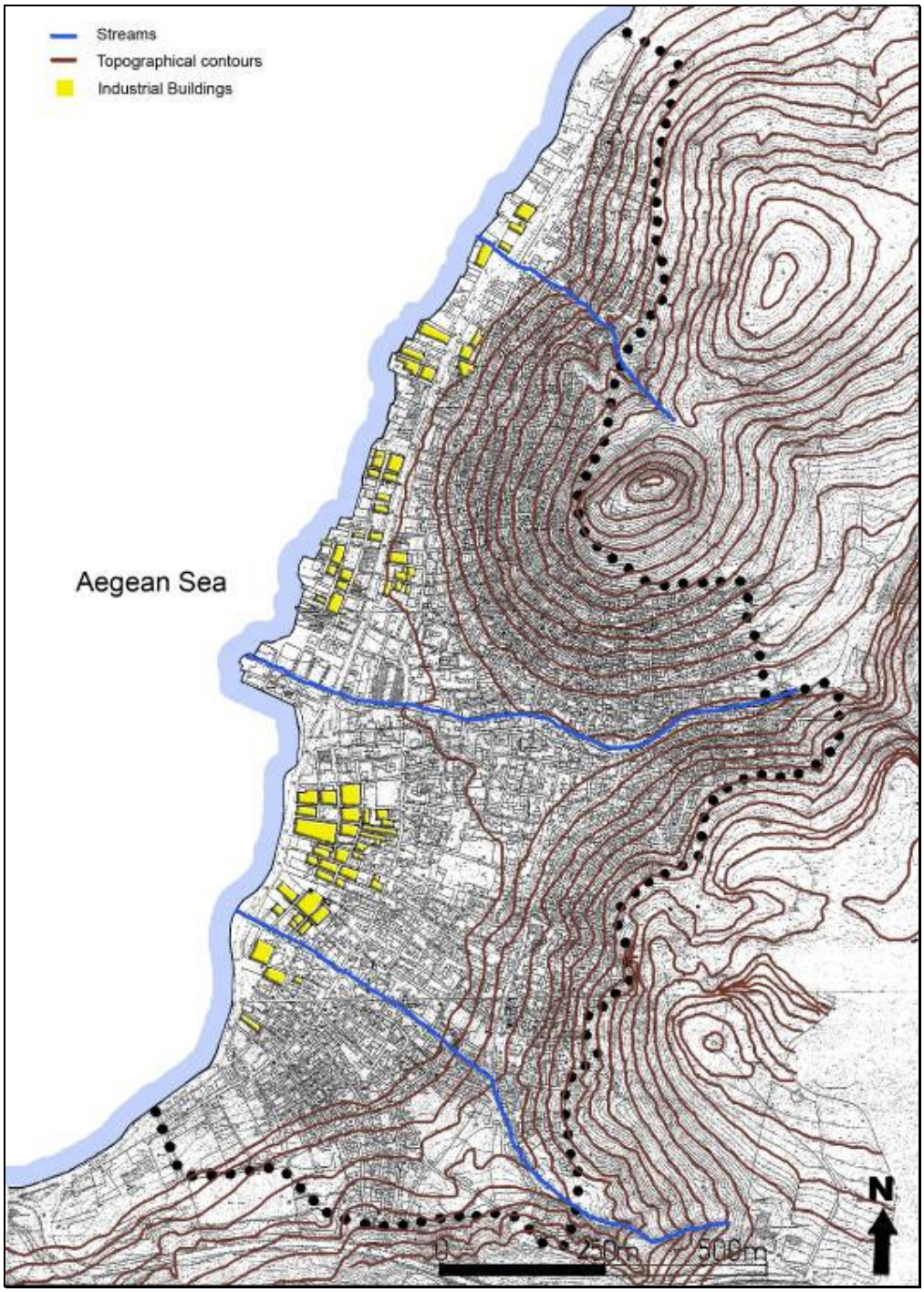

Figure 5.2. Industrial buildings and the natural components of Ayvalık.

5.3. Industrial Activities and the Streams

There are three streams on maps of the 18th century Ayvalık done by Pssarros (Pssarros 2004, 10). These streams were born from the top of the hills and reached to the sea (see fig. 5.2). Unfortunately a relationship between the olive oil production structures and these streams cannot be identified even after the 1850s a period, of which we have more information.

Although there is no evidence, one may suggest that, these streams could have been used for water mills for the energy necessary for olive oil production before the steam power was introduced in the last quarter of the 19th century.

5.4. Industrial Activities and the Port

The port must have had a significant role on the determination of the location of olive oil factories.

In the 19th century, connection with the rest of the world was provided by the sea in Ayvalık. The naturally protected port of Ayvalık was used until the second half of the 19th century. Thereafter, during the increased foreign infrastructure investment, the Ayvalık port was also enlarged in 1880 (Aka, 1944: 36).

The port and the production centres had a very close relationship. Analysis concerning the relationship between the port and the industrial activities indicates that, three quarters of the industrial buildings in Ayvalık were located within the 500m contour from the port (See fig. 5.3). The rest were located within the 1 km contour. The study shows that, although proximity to the port seems to have been important for the selection of the location of industrial buildings, it was not a major factor. It was observed that there was a tendency towards being close to the port but there were also industrial buildings located at the farthermost end of central Ayvalık.

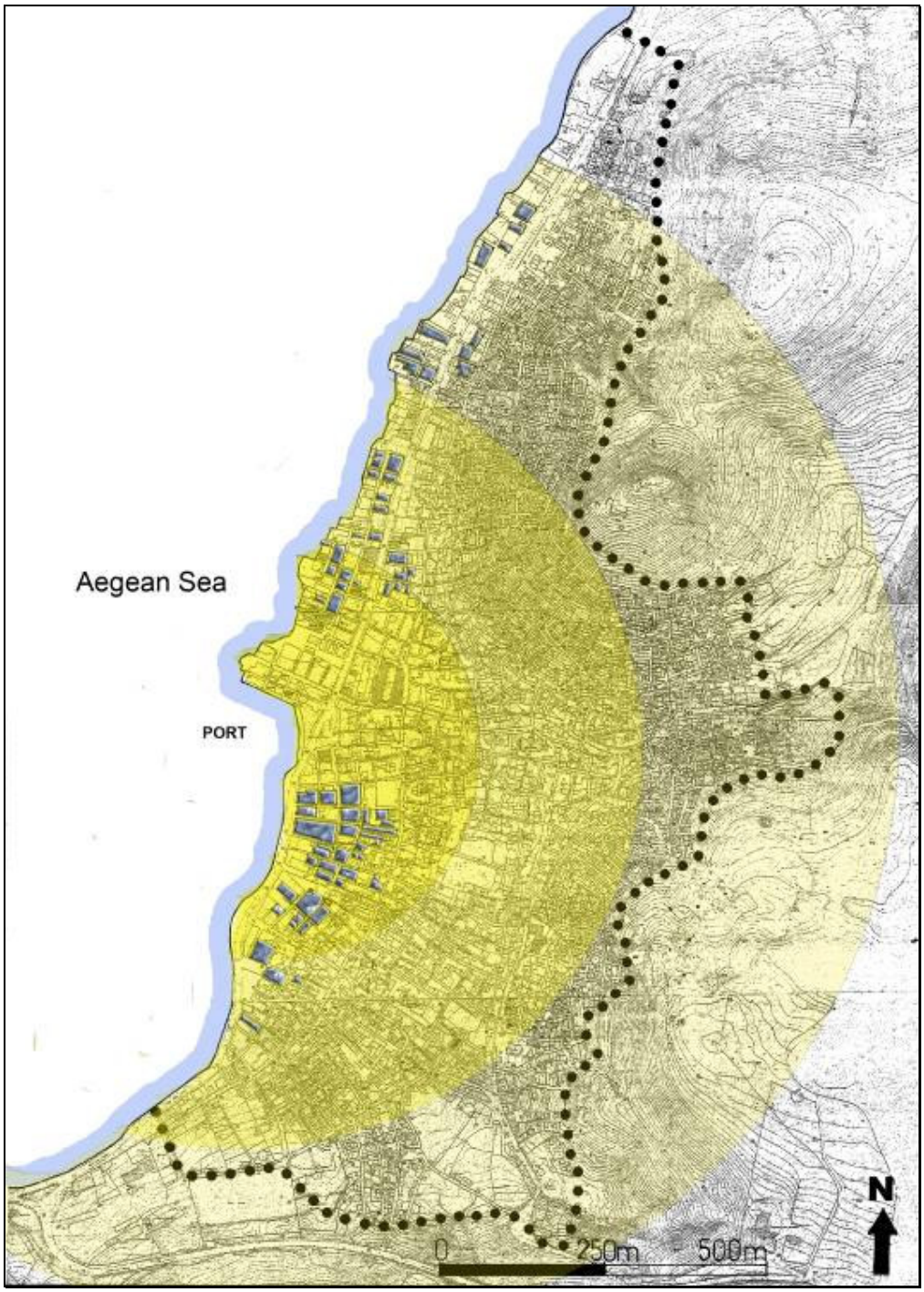

Figure 5.3. Industrial Buildings and their position in relation to the port.

5.4. Industrial Activities and Raw Material Areas/Olive Groves

Although we have so far suggested that Industrial Revolution in England triggered the industrial change in Ayvalık, the settlement was in fact located in a fertile bay famous for its olives before even mass production reached to Ayvalık. This fertile land was actually the main reason for the rise of Ayvalık in olive and olive oil production. The olive groves that belonged to the people of Ayvalık began just after the mountain ranges to the east of the settlement and composed a large portion of the agricultural lands of Ayvalık during the 19th century. Today, the olive groves cover approximately 100 ha which is larger than what we know from the historical records.

Transportation of olives from the groves to the industrial area in Ayvalık had a determinative role in the organization of the street patterns of Ayvalık. Especially the main roads of the settlement were designed to create easy connection between the production plants and the raw material.

The main road on the north-south axis, running parallel to the sea, reached the olive groves on the north and summer villas on the south (see fig. 5.4). The main east- west axis intersected with the north-south axis on the west and reached to the olive groves after the hills on the east. Another main road parallel to the north-south axis intersected with the east-west axis on the north and reached to the olive groves and a village of Ayvalık, Küçükköy.

Figure 5.4: The transportation network between the olive groves and Ayvalık.

5.5. Industrial Activities and the Main Wind Directions

The effective wind direction in Ayvalık is north and northeast. Depending on this information the position of the industrial activities and their effect to the settlement pattern can be evaluated.

When the production volume increased and actual factories were established, the number of industrial buildings and their impact on the settlement increased as well. Smokes from the chimneys of the factories and the smell resultant of the production process spread throughout the settlement during the time of production. Some areas must have probably been effected more from pollutions more than other parts due to the winds.

The effective wind direction suggests that especially the northern part of the settlement must have suffered more (see fig. 5.5). The neighbourhoods in this part of the settlement were the relatively older ones developed in the early phases of Ayvalık in the 18th century. The settlement developed around this old neighbourhood but the main development was observed on the south side where there was relatively less exposure to the pollution from the industrial plants. In "Çamlık", another neighbourhood on the south out of the central settlement area, villas for wealthy people was built. This neighbourhood was surrounded by pines and was most probably free from the negative impact of olive oil production

These factors suggest that the relationship between the direction of the winds and the production facilities had a determinative role on the settlement pattern of Ayvalık. The north part of the settlement was effected negatively from the smoke and smell; moreover these relatively older buildings were preferred by people with lower income. On the other hand, the relatively younger neighbourhoods on the south part of the settlement which were not much effected from the industrial activities were probably preferred by the wealthier population.

Of course it might also be suggested that there was no spatial differentiation according to the income but rather wealthy people had a second house in Çamlık where they could take refuge during the production season.

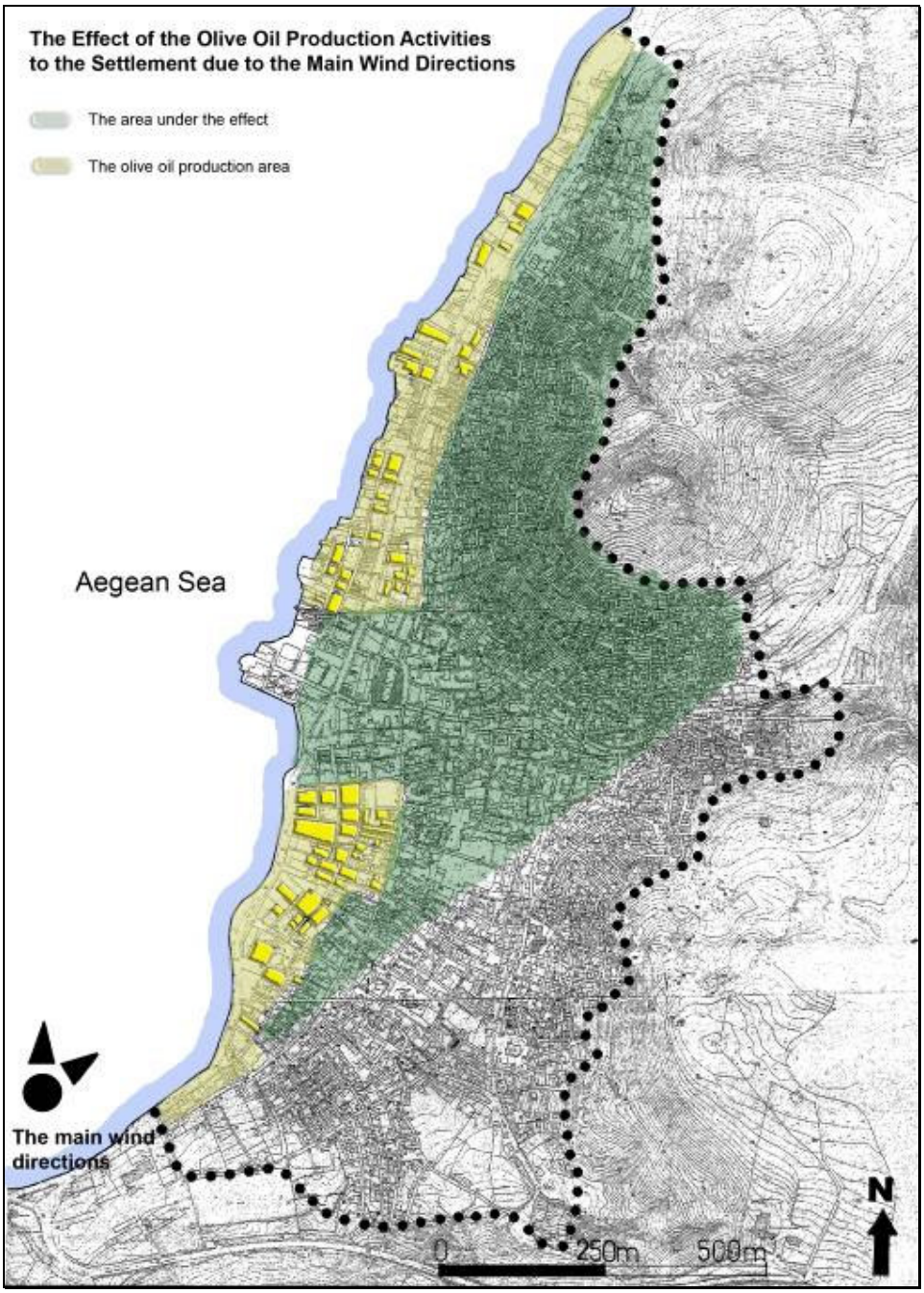

Figure 5.5 The main wind directions and their effect on the settlement.

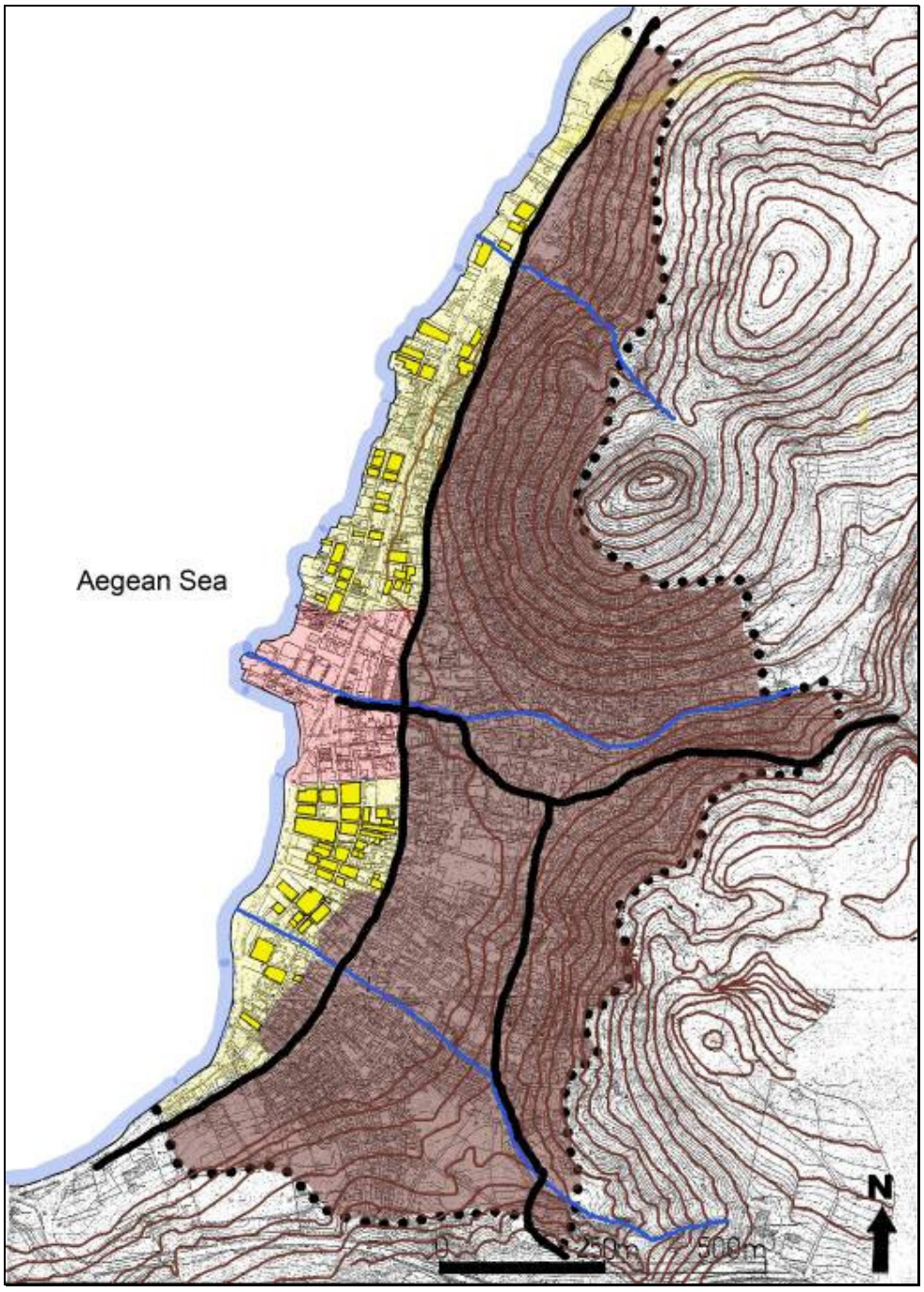

Figure.5.6. Land use of Ayvalık in early 20th century.

5.6. Industrial Activities and the Street patterns

Street patterns of Ayvalık, especially the main roads, were designed in order to provide connection between the olive groves and the production structures. There are three main roads within the settlement, each approximately 5m wide; one on the east-west direction and two on the north-south direction (see fig. 5.7).

The one on the east-west direction begins from the olive groves and reaches into the settlement from the east running parallel to the stream and intersecting with the street on the north-south direction near to the port. This road separates the residential area into two and reaches to the business district and the port.

The road on the north-south direction also begins from the olive groves on the north of the settlement, passes through the centre of Ayvalık and reached to the villa in "Çamlık" on the south. The settlement was separated into residential and business/industry zones by this road. This road that acted like a boundary could also have been used for the distribution of the olives coming from the east through the eastern and western zones.

The second road on the north-south direction intersects with the east-west road on the south side and passes through the residential areas reaching to the only village under the Ayvalık domain: Küçükköy. Another branch of this road reaches the olive groves on the southeast side of the Ayvalık.

Secondary roads were shaped mainly dependent on the topography. Thus, street pattern on the steep slopes has an organic character and the plain areas have a more rigid form.

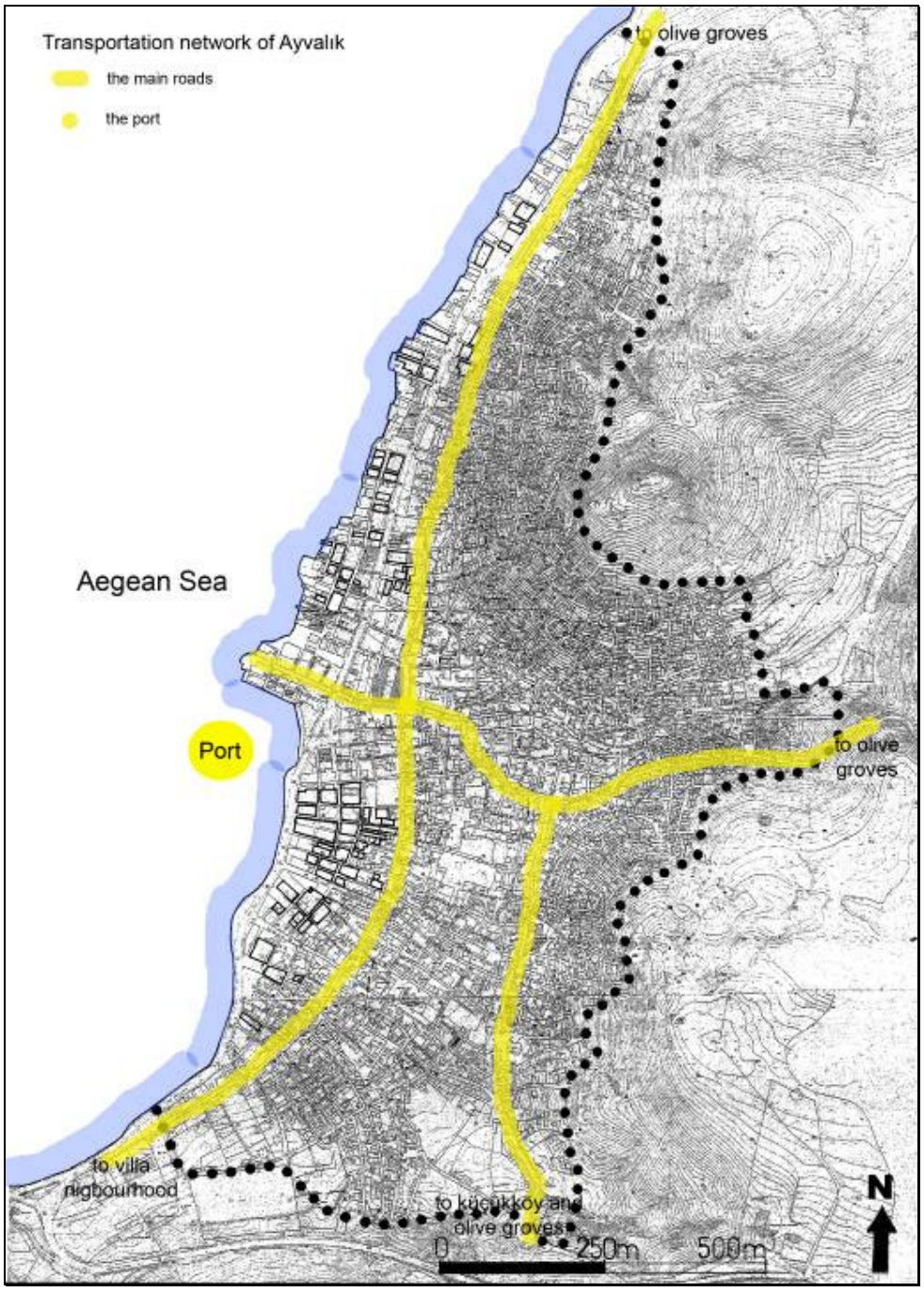

Figure 5.7. The transportation network of Ayvalık.

5.7. Industrial Activities and the Residential Areas

The most significant effect of olive oil production activities to the residential area is that after olive oil production activities were established on the fill area and then were dramatically increased, the connection of the residential area with the sea had ended. Commercial and industrial activities settled along the coast and a north-south direction road separated the residential area from these areas (see fig. 5.6). So, residential quarters gained a more isolated character within the urban pattern.

The symbol of the industrial revolution, the labour class, was not observed in Ottoman Empire since the empire did not experience an actual industrial revolution. These circumstances were also true for Ayvalık. Here also, there were no labour quarters that can be examined together with the industrial zones.

5.8 Industrial Activities and the Public and Commercial facilities

The port area, where commercial activities concentrated was also location for public services. Commercial and public buildings such as the customs house, city square and restaurants were situated along the north-south road in the near vicinity of the port, which had become the business centre of Ayvalık (see fig.5.6). The famous Academy of Ayvalık was located at the north of the Central Business District (CBD) among the industrial buildings. A hospital was located at the south end of the settlement on the coast line.

CBD acted like the origin of symmetry for the industrial buildings and divided them into two areas. Both areas were surrounded by buildings related with trade. This could have been an intentional choice in order to remain close to the local market area.

5.9. Industrial Activities within the Settlement Pattern

The new technology and new form of industrial production in Ayvalık influenced the settlement pattern even just with its new introduced building types: factories. These new buildings were large and had at least two storeys and chimneys. Compared to the modest workshop buildings used for olive oil production in earlier times, these large volumed mass buildings emphasized the industrial character of Ayvalık.

These new buildings, factories, and all industrial activities were situated together and composed an industrial quarters in the settlement. This clustered character strengthened the significance of industrial activities in Ayvalık.

There were clusters of industrial/manufacture areas and they were located along the coastline in the most significant region of the settlement since entrance to the settlement was provided from the sea during the 19th century. When someone approached the port of Ayvalık, s/he saw the silhouette made up of large buildings and their chimneys.

This area was probably the most valuable terrain in Ayvalık in 19th century. It was on the coast, near the central business district and was serviced by the north- south road. The coast also provided flat land for the industrial buildings so that larger buildings could be built on larger lots.

This meant that the olive oil producers could afford the expensive real estate costs in order to be close to the sea, port, local market area and the roads which was inevitably very important .

The industrial quarter in Ayvalık which also included the olive oil production facilities were divided into two clusters on the north and south side of the central business district. Unfortunately, there are no written records found concerning the original functions of the industrial buildings, so an attempt to extract this information was made during the fieldwork. Machinery, their ruins, chimneys were among the material evidence which was supported by the oral tradition provided through interviews with the local people, owners of the

industrial buildings or their workmen. According to this study 8 types of structures were identified in the industrial centre of historical Ayvalık.

1. Olive Oil Factory,
2. Soap Factory,
3. Olive Oil Complex,
4. Olive Oil Warehouse
5. Factory
6. Warehouse/Workshop
7. Warehouse/Shop
8. Unidentified

According to this; 20 olive oil factories, 4 soap factories and 4 olive oil complexes, 2 olive oil warehouses, 5 factories, 34 warehouse/workshops and 23 warehouse/shops have been identified (see figure 5.8). In addition, typological classes were adapted to the suggestion of the functional distribution in order to define the industrial buildings' architectural features (See Appendix C).

According to this analysis, all factories belong to Class 3, workshop, warehouse and shops belong to Class 1 and 2 (See Chapter 4 for the description of the typological classes and Appendix.C for the drawings).

It was observed that the spread of the industrial buildings within their quarter was random. There was no specific grouping or location selection method detected within the industrial pattern. Since the industrial pattern within the settlement is more or less the same throughout, it is reasonable to believe that industrial buildings spread randomly within the industrial zones.

Olive oil production had an important impact on the settlement pattern in addition to what it has been adding to economic value. Ayvalık developed parallel to the olive oil production capacity and this production activity became the determinative cause in formation of the settlement pattern. Starting from the second half of the 18th century to the end of the 20th century, this effect continued. Especially after the last quarter of the 19th century, when the new technology of olive oil production spread through Ayvalık, and production volume increased, the settlement pattern was dramatically influenced by these changes.

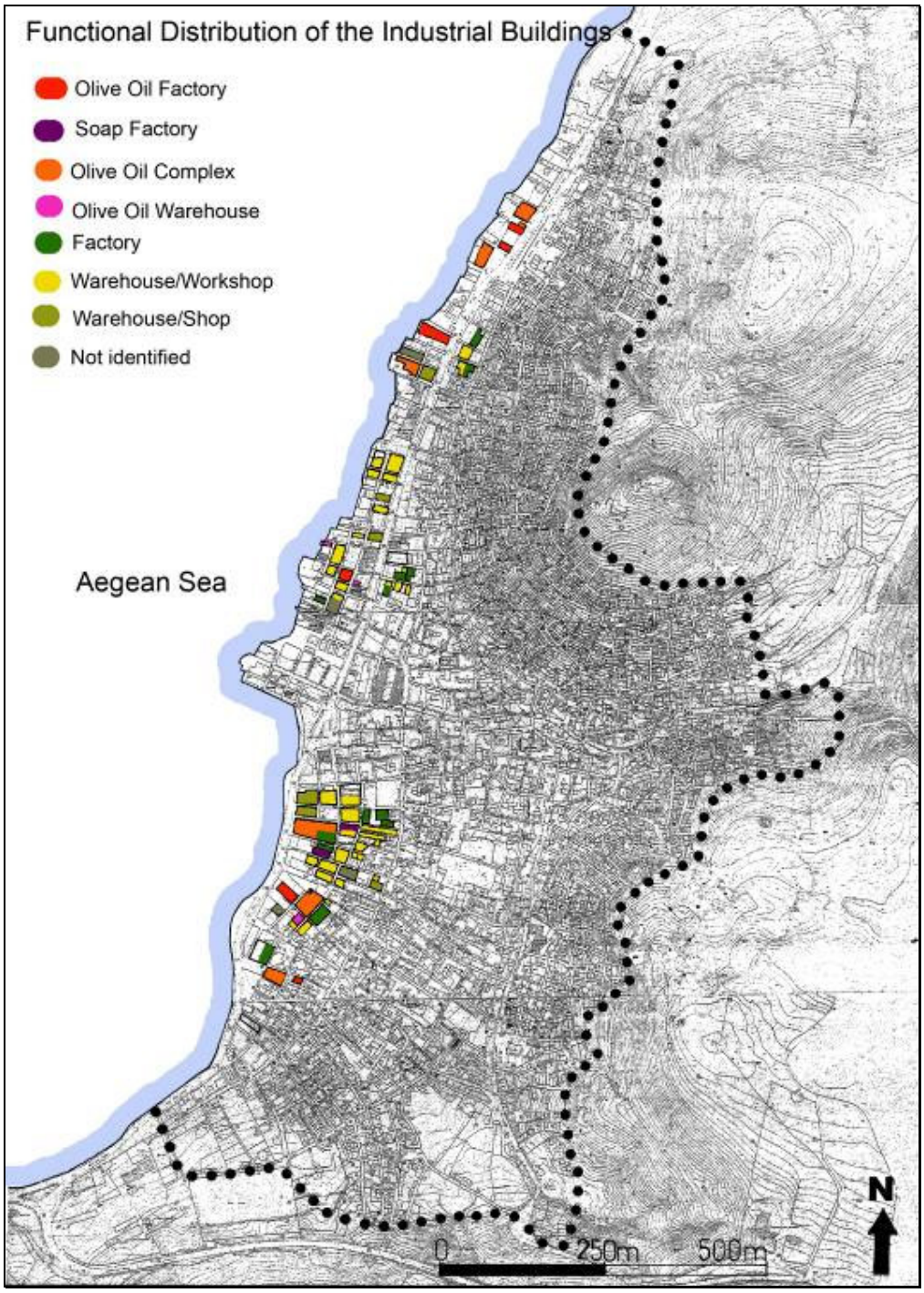

Figure 5.8: The functional distribution of the industrial buildings.

CHAPTER VI

CONCLUSION

Why an industrial development took place in olive oil production of Ayvalık during the 19th century

Ayvalık was an important settlement which flourished during the decline of the Ottoman Empire. This growth was a result of economic, social, ethnic, geographic, and political factors.

However, the primary factor in the development of Ayvalık was economy, and the literature suggested that although indirectly, the changes in the world economy had an impact on the economy of Ayvalık.

The Industrial Revolution was surely the most significant experience of the 19th century. It greatly changed the economic and social order of the world (Hobsbawm 1998, 13). New concepts such as mass production, labour class and capital emerged in this period. These dramatic changes did not only because essential transformations in the countries went through industrial revolution, but the countries that remained isolated were also influenced from the Industrial Revolution of UK. Mass production required more raw materials and more markets to sell these products. Thus, intense trade traffic among the industrialized and non-industrialized countries became the tool for spreading capitalist economy to the whole world (Hobsbawm 1969, 27). Industrialized countries dominated most of the world's non-industrialized regions and colonization continued with a new twist to it. Eventually, it is understood that the world was divided coarsely into two groups; colonists and colonies

Within this conjuncture, the Ottoman Empire succeeded in protecting its political unity but failed to do so in economy. The empire surrendered to the developments abroad (Quartet 1987, 13). With the new economic and commercial trends important trade centres in the Ottoman Empire were re-located and a new trade relation pattern was set up (Goffman 1999, 89).

With these changes, the trade centres previously located in the interior was moved to port settlements (Goffman 1999, 89). These new trade centres also enlarged their impact zones and gained a central character in their region.

İzmir also prospered in this period and it became the regional focal point of West Anatolia (Tekeli 1992, 128). Raw materials coming from the fertile lands of Anatolia were collected in İzmir and marketed to Europe and, manufactured goods of Europe were also distributed from İzmir to the rural areas of Western Anatolia. The relation between Anatolian farmers and European merchants were maintained by the Ottoman minorities who had become trade mediators. Especially Greeks and Armenians had a great advantage in effortlessly communicating both with the Europeans and the Turks (Barbaros 1995). During this period, the minorities gained economic power with their mediator role in trade.

Until the second half of the 19th century, relations between İzmir and Europe remained (Kasaba 1994, 6). There was no physical investment made by Europeans, but in the middle of the 19th century, accumulated capital in industrialized countries caused an economic crisis. Europeans solved this problem by making investments in non-industrialized countries. It was observed that, parallel to this crisis European investment in Western Anatolia also increased. Europeans mainly built factories and railways to service these factories and ships sailing from the ports of Western Anatolia. But foreign factories with their high technology machinery imported from Europe caused unfair market competition for local producers, which led the local manufacture guilds, especially the ones in the cities that were relatively more organised, to object to the unfair market competition and to force the high technology foreign factories to close.

These conditions in the Ottoman cities pushed foreign industry investors to rural settlements where guilds were relatively less powerful (Tekeli 1992, 134). Ayvalık was one of these investment regions for the foreigners. But it would not be a fair judgement to define Ayvalık as a settlement which rose economically solely with foreign investment. Ayvalık had already been a developing settlement since the second half of the 18th century, a century before the foreign investments.

Ayvalık was established around 15th century but it made its main leap towards urbanization after the second half of the 18th century. This development was put into practice by the Greek population of Ottoman Empire. Olive groves around the settlement provided the raw material for oil production and Ayvalık exported its olive oils primarily to the Ottoman palace and then to Balkans and Russia. Ayvalık gained autonomy in 1773 which paved the way to establish relations with the industrialized Europe (Aka 1944, 23). This autonomy also created suitable conditions for the rise of Greek nationalism. Wealth that was gained from olive oil production was transferred to investment in the cultivation of Greek nationalism (Clogg 1997, 30). Academies were the main institution where propaganda took place and the most prestigious academy was located in Ayvalık. Thus, Ayvalık gained yet significance this time for the Greek world. While Ayvalık increased its wealth, it had also become important in politics due to these nationalistic movements.

However, the political role of Ayvalık did not influence its economy in a positive way. During the 1821 Greek Upheaval, almost the entire settlement was demolished and population was exiled for a few years which caused a hiatus in the development of Ayvalık (Arıkan 1988, 588). The settlement started to recover during the mid 19th century. Parallel to this recovery, foreign industry investments also started to be established in Ayvalık.

Meanwhile, machinery was imported from Europe while establishing steam power factories and as far as we know Ayvalık was still using man and animal power in that period. So the foreign investments caused unfair competition but there was no known reaction to this situation from the local producers. The local producers rather adapted themselves to new technologies, and as a result,

olive oil production volume was tripled from the early 19th century to the second half of the century. These figures indicate that Ayvalık had as much olive oil production technology as entire Anatolia had in the mid 20th century, and had it a hundred years before.

How was the change in the structure of the olive oil production in Ayvalık

While the use of the new technology spread in Ayvalık, the old production techniques also continued to be used. Thus, three different types of olive oil production appeared. Household, workshop and factory production all developed in different phases of the settlement and worked together during the 19th century.

The household production had probably been used since the establishment of Ayvalık. The entrance floors of the houses were used for household production including olive oil and its storage. In this type, production volume was not more than that household's needs. Probably the olives from grove of the household were processed. The production technique was also very simple; basic grinding stones were used. Human energy was also used in this small scaled production and there was no need for extra labour force. Due to the capacity of production, the pollution of air and sea as well as unwanted smell, were not problems for the settlements.

With the development of the settlement, exportation mainly within the Ottoman Empire, began. So, more structures built specifically for olive oil production emerged in order to respond to the demand in olive oil. These buildings were workshops and warehouses and could be used for either of these two purposes. The production technology was more developed than household production. There were olive oil mills working probably with animal power. These workshops had a technology parallel to the rest of Anatolia and led Ayvalık to gain a reputation in olive oil production. This one storey, four walled rectangular buildings actually represented manufacturing activities in the settlement and it included olive oil production as well. They were probably not specially designed for olive oil production and they could easily be converted to

be used in other manufacturing activities. The production volume of workshops was also bigger than household production and their effect to the settlement was also stronger. Sea and air pollution must have effected the settlement more. Also extra labour should have been sought and probably was provided through seasonal workers from the neighbouring villages.

When olive oil factories began to be built in Ayvalık, in the last quarter of the 19th century, the settlement was already an important olive oil producer and exporter. However, factories increased the olive oil volume of Ayvalık significantly with their mass production capacity and gave the settlement an industrial character. These factories were working with the latest technology of the period. Olive oil mills and presses working with steam power were able to produce huge amounts of olive oil in relatively short time. Thus, production volume had increased and air, sea and smell pollution probably reached their highest levels in the 19th century. The buildings specially designed for olive oil production required more labour which was also provided from the neighbouring villages.

How did the improved olive oil industry influence the settlement pattern of Ayvalık

Olive oil production activities, especially the mass production of olive oil in factories, had a determinative role in the settlement pattern of Ayvalık, but first, the factors that influenced the location selection of these industrial activities should be defined.

It was observed that being close to the sea and the port on flat terrain were the basic reasons for the location of the olive oil production facilities along the coast. This choice influenced the other components of the settlement as well. The main roads were established in order to provide an easy relation between the olive oil production structures and the olive groves. Also the neighbourhoods that were heavily influenced from the smoke and smell of the olive oil production due to the main wind direction remained underdeveloped. .

In addition, the factories which were the symbols of this new era in Ayvalık had a determinative role on the town's settlement pattern. These buildings that were introduced to Ayvalık in the late 19th century were established on the most valuable lands of Ayvalık, along the coastline. Thus, their effect on the settlement increased because of their location and their dominant architectural form, they changed the silhouette of the settlement and had become a showcase for the industrial character of the settlement. These buildings had large volumes and higher floors and also chimneys which changed the modest relationship between the people and the settlement.

As a result, olive oil production had an irrefutable effect on the physical environment of Ayvalık. In the mid 18th century when the olive oil production was in a household production level, special workshop spaces were designed for olive oil production within houses. Parallel to the increase in the production volume, workshops began to be a significant part of the settlement. Above all, after the last quarter of the 19th century, when mass production of olive oil had been available due to the latest technology olive oil factories, the olive oil production became the dominant physical element of settlement and the determinative input for the urban pattern.

Today Ayvalık still sustains on olive oil production and, remains as the most important olive oil production centre in Turkey. However, nowadays production takes place out of the settlement. The industrial buildings which are the subject of this study are mostly abandoned today. The revitalization of these buildings and providing their integration to the dynamic settlement is still needed but is a subject for another study.

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APPENDICES

Appendix A: The Record Form for the Survey

Recorder: Date:…/…../2007 Structure No Address

Modern Usage: External Observation / Internal Observation/ Questionnaire

Possible Past Usage? Probability (H/M/L) Alternative? Probability(H/M/L)

Construction Date

Physical Features

Building's construction order within lots:

Courtyard/ and its relation with the building:

Storey number: Construction material: Orientation:

Topography:

Chimney:

Entrance way:

Production Process Elements:

Raw Material Storage:

Crushing:

Press:

Distillation:

Storage:

Wastes:

Components of the Production System:

Buildings/State of preservation/ Interventions

Artefacts /State of Preservation/ Interventions

Structures in the enterprise:

Main Production Structures:

Secondary Production Structures:

Energy Source Structures:

Storage Structures:

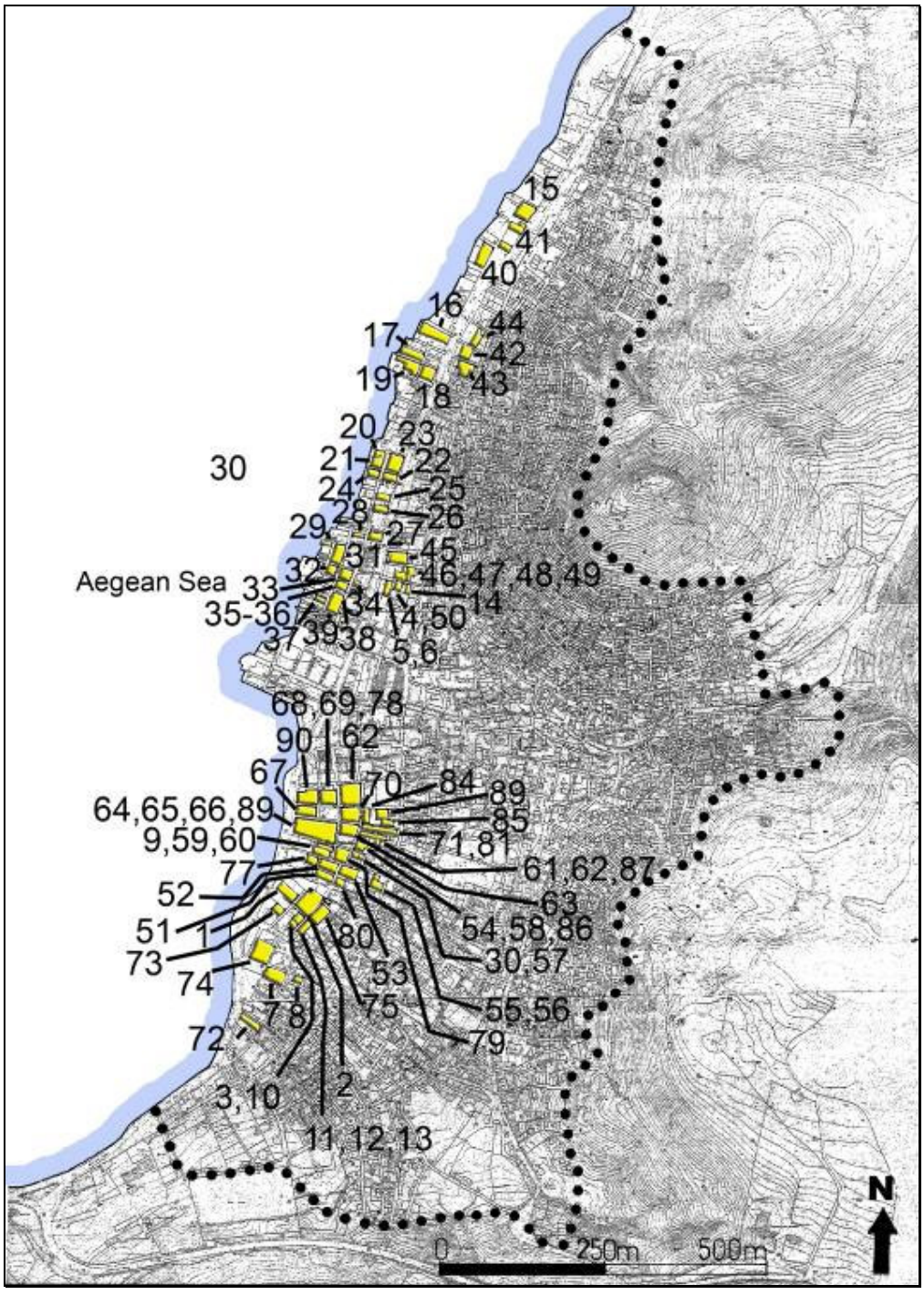
Labour Houses:

Management Structures:

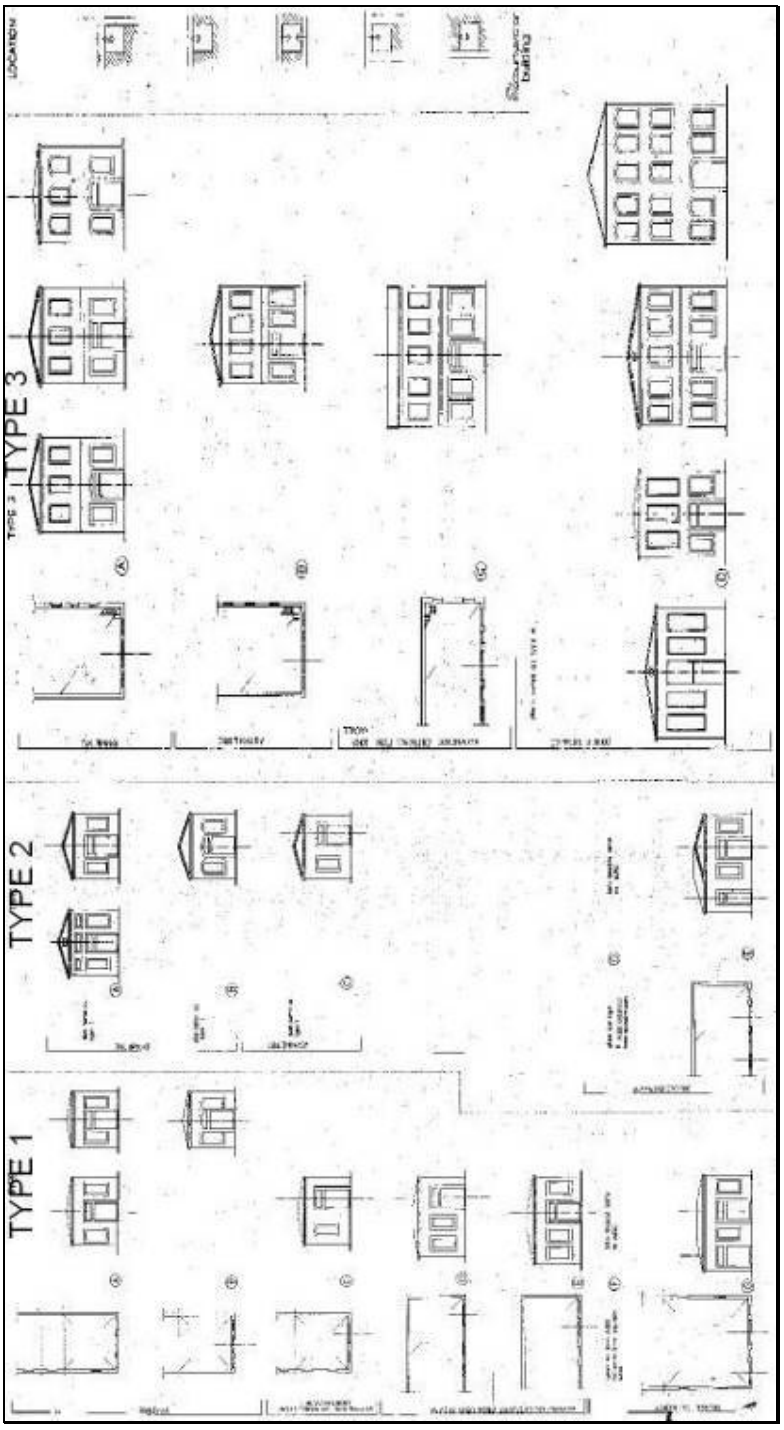
Marketing Structures:

Others (infrastructural etc.):

Appendix B: The Key Map



Appendix C: The Typology Study of Suna Kabasakal



Appendix D: Catalogue for the Industrial Buildings Detected During the Survey

Structure No # 1

Modern Usage: Sabuncugil Olive oil factory working with modern technology (*kontinü*)

Possible Past Usage: Olive oil Factory **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date: 1911

Courtyard/ and its relation with the building: The building has a courtyard on its south side.

Storey number: 2

Construction material: Local Stone

Topography: Plain

Chimney: Demolished

Entrance way: East. West façade was poorly preserved so entrance cannot be observed. There are also entrances from east and west facades of the courtyard.

Structure No # 2

Modern Usage: Tansaş Supermarket (first floor), Montenegro Café (Second Floor)

Possible Past Usage: Olive oil factory complex **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: There was probably a small courtyard on the north side of the building complex.

Storey number: 2 (the main factory building) 1 (supplementary buildings)

Construction material: Local Stone

Topography: Plain

Chimney: Not known

Entrance way: Buildings are multi entranced from all sides of the lot. The main entrance of the factory building is from the north side through the small courtyard.

Structure No # 3

Modern Usage: In restoration process.

Possible Past Usage: Olive oil warehouse **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date: 1913

Courtyard/ and its relation with the building: No courtyard

Storey number: 1

Construction material: Local Stone

Topography: Plain

Chimney: No

Entrance way: East.

Structure No # 4

Modern Usage: Not identified

Possible Past Usage: Not identified **Probability** (H/M/L)

Alternative? **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: No courtyard

Storey number: 1

Construction material: Probably local stone but not visible because of the modern plaster

Topography: Plain

Chimney: No

Entrance way: West.

Structure No # 5

Modern Usage: Not identified

Possible Past Usage: Warehouse/Workshop **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard.

Storey number: 1

Construction material: Probably local stone but not visible because of the modern plaster

Topography: Plain

Chimney: No

Entrance way: East.

Structure No # 6

Modern Usage: Car park

Possible Past Usage: Factory **Probability** (**H**/M/L)

Alternative Olive oil factory **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard.

Storey number: 2

Construction material: Local stone and brick

Topography: Plain

Chimney: The building has a chimney on its northwest corner.

Entrance way: East.

Structure No # 7

Modern Usage: Abandoned

Possible Past Usage: Olive Oil Factory **Probability** (**H**/M/L)

Alternative Factory with a different purpose **Probability** (H/M/**L**)

Construction Date: 1888

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: There was probably once a chimney but today there is nothing left.

Entrance way: There were three entrances on east, west and north sides.

Structure No # 8

Modern Usage: Abandoned

Possible Past Usage: Olive Oil Factory **Probability** (**H**/M/L)

Alternative: **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: Some parts of the chimney have survived.

Entrance way: South

Structure No # 9

Modern Usage: Workshop

Possible Past Usage: Soap Factory **Probability** (H/**M**/L)

Alternative Factory with a different purpose **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a semi open courtyard on its east.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: No chimney observed.

Entrance way: South

Structure No # 10

Modern Usage: Abandoned

Possible Past Usage: Olive oil Warehouse **Probability** (**H**/M/L)

Alternative? Warehouse with a different purpose. **Probability** (H/M/**L**)

Construction Date: 1913

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney

Entrance way: East

Structure No # 11

Modern Usage: Culture Centre

Possible Past Usage: Warehouse or Workshop **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/**L**)

Construction Date: 1910

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney

Entrance way: West

Structure No # 12

Modern Usage: Not identified

Possible Past Usage: Warehouse or Workshop **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney

Entrance way: West

Structure No # 13

Modern Usage: Not identified

Possible Past Usage: Warehouse or Workshop **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney

Entrance way: West

Structure No # 14

Modern Usage: Not identified

Possible Past Usage: Warehouse or Workshop **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney

Entrance way: West

Structure No # 15

Modern Usage: Abandoned

Possible Past Usage: Olive oil complex (olive oil factory, soap factory, warehouse and shop) **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard on the west, near to the sea.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: No chimney observed

Entrance way: West

Structure No # 16

Modern Usage: Shop

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: A hexagonal brick chimney with a cross decoration

Entrance way: East and North

Structure No # 17

Modern Usage: Abandoned

Possible Past Usage: Soap Factory **Probability** (H/**M**/L)

Alternative? Factory with a different purpose **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East and South

Structure No # 18

Modern Usage: Office

Possible Past Usage: Shop **Probability** (**H/**M/L)

Alternative? Warehouse **Probability** (H/M/**L**)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East, West and North.

Structure No # 19

Modern Usage: Abandoned

Possible Past Usage: Olive Oil Factory **Probability** (**H/**M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea **Storey number:** 2

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East, West, North.

Structure No # 20

Modern Usage: Abandoned

Possible Past Usage: Not identified **Probability** (H/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 21

Modern Usage: In process of converting to a boutique hotel.

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: 1908

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 22

Modern Usage: Shop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: West

Structure No # 23

Modern Usage: Shop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: West and East

Structure No # 24

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 25

Modern Usage: Shop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: West and East

Structure No # 26

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: West and East

Structure No # 27

Modern Usage: Shop

Possible Past Usage: Shop **Probability** (**H/**M/L)

Alternative? Warehouse **Probability** (H/**M/**L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 28

Modern Usage: Shop

Possible Past Usage: Shop **Probability** (**H/**M/L)

Alternative? Warehouse **Probability** (H/**M/**L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 29

Modern Usage: Abandoned

Possible Past Usage: Warehouse **Probability** (**H/**M/L)

Alternative? **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East

Structure No # 30

Modern Usage: Car Parking

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: West

Structure No # 31

Modern Usage: Abandoned

Possible Past Usage: 4 Warehouses **Probability** (H/**M**/L)

Alternative? Workshops **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The buildings have no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East and West

Structure No # 32

Modern Usage: Abandoned

Possible Past Usage: 2 Warehouses **Probability** (H/**M**/L)

Alternative? Workshops **Probability** (H/**M**/L)

Construction Date: 1910

Courtyard/ and its relation with the building: The buildings have no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: No chimney was observed

Entrance way: East and West

Structure No # 33

Modern Usage: Abandoned

Possible Past Usage: Olive oil factory **Probability** (**H/**M/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: East and West

Structure No # 34

Modern Usage: Olive oil warehouse

Possible Past Usage: Olive oil warehouse **Probability** (**H/**M/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 35

Modern Usage: Warehouse

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 36

Modern Usage: Residential

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 37

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 2 (But the second floor was added in the 20th century)

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 38

Modern Usage: Warehouse

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 39

Modern Usage: Shop

Possible Past Usage: Three Workshops **Probability** (H/**M**/L)

Alternative? Three Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The buildings have no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The buildings have no chimney

Entrance way: West

Structure No # 40

Modern Usage: Abandoned

Possible Past Usage: Olive oil complex **Probability** (**H/**M/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 4

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: East

Structure No # 41

Modern Usage: Shop

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its west, near to the sea

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 42

Modern Usage: Abandoned

Possible Past Usage: Two Workshop or Warehouse **Probability** (H/**M**/L)

Alternative? Leather Workshops **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The buildings have no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Slightly inclined

Chimney: The buildings has no chimney

Entrance way: South

Structure No # 43

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2 (But the second storey added in the 20th century)

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: North

Structure No # 44

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: South

Structure No # 45

Modern Usage: Shop

Possible Past Usage: Olive Oil Factory **Probability** (**H/**M/L)

Alternative? Probability (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has a courtyard on its east, surrounded by secondary structures of the factory i.e. warehouse.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: South and West

Structure No # 46

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: 1895

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2 (Second floor was added in the 20th century)

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: North

Structure No # 47

Modern Usage: Abandoned

Possible Past Usage: Olive oil Factory **Probability** (**H/**M/L)

Alternative? Probability (H/M/L)

Construction Date: 1895

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2 (Second floor was added in the 20th century)

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has a chimney

Entrance way: North

Structure No # 48

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: South

Structure No # 49

Modern Usage: Abandoned

Possible Past Usage: Olive Oil Factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date: 18-2

Courtyard/ and its relation with the building: The building has a courtyard on its west.

Storey number: 2

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: North

Structure No # 50

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Slightly inclined

Chimney: The building has no chimney

Entrance way: West

Structure No # 51

Modern Usage: Workshop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West and South

Structure No # 52

Modern Usage: Workshop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2 (but the second floor was added in the 20th century)

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West and North

Structure No # 53

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2 (but the second floor was added in the 20th century)

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 54

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: 1908

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 55

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 56

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East and South

Structure No # 57

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 58

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: 1908

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 59

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North and East

Structure No # 60

Modern Usage: Abandoned

Possible Past Usage: Olive Oil Factory **Probability** (H/**M**/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North and East

Structure No # 61

Modern Usage: Abandoned

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 62

Modern Usage: Abandoned

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 63

Modern Usage: Abandoned

Possible Past Usage: Soap Factory **Probability** (**H**/M/L)

Alternative? Olive oil factory **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 64

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 65

Modern Usage: Car Parking

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: -

Structure No # 66

Modern Usage: Abandoned

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyard.

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: East and South

Structure No # 67

Modern Usage: Shop

Possible Past Usage: Two olive oil warehouse and workshops

Probability(**H/**M/L)

Alternative? **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The buildings have no courtyards.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The buildings have no chimney

Entrance way: West and East

Structure No # 68

Modern Usage: Shop

Possible Past Usage: Warehouse **Probability**(H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyards.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 69

Modern Usage: Bar

Possible Past Usage: Warehouse **Probability**(H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyards.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 70

Modern Usage: Warehouse

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyards.

Storey number: 2 (but the second floor had been added in the 20th century)

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: In four directions

Structure No # 71

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has no courtyards.

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 72

Modern Usage: Supermarket

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Soap Factory **Probability** (H/M/L)

Construction Date: -

Courtyard/ and its relation with the building: The building has a courtyard on its south side. There could have been a courtyard on the west of the building but it cannot be detected since the area was destroyed during the construction of the modern road

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: West

Structure No # 73

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/M/L)

Construction Date: 1890

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 74

Modern Usage: Abandoned

Possible Past Usage: Olive oil Factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has a chimney

Entrance way: East

Structure No # 75

Modern Usage: Abandoned

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 76

Modern Usage: Warehouse

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 77

Modern Usage: Workshop

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 78

Modern Usage: Warehouse

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 79

Modern Usage: Warehouse

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 2 (but the second floor had been added in the 20th century)

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 80

Modern Usage: Warehouse

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 81

Modern Usage: Workshop

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West and North

Structure No # 82

Modern Usage: Workshop

Possible Past Usage: Warehouse **Probability** (H/**M**/L)

Alternative? Workshop **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 83

Modern Usage: Bar

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Soap factory **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 84

Modern Usage: Abandoned

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? Probability (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 85

Modern Usage: Abandoned

Possible Past Usage: Olive oil factory **Probability** (**H**/M/L)

Alternative? **Probability** (H/M/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 2

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: South

Structure No # 86

Modern Usage: Warehouse

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number:1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: North

Structure No # 87

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: South

Structure No # 88

Modern Usage: Shop

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: West

Structure No # 89

Modern Usage: Abandoned

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East

Structure No # 90

Modern Usage: Warehouse

Possible Past Usage: Workshop **Probability** (H/**M**/L)

Alternative? Warehouse **Probability** (H/**M**/L)

Construction Date:

Courtyard/ and its relation with the building: The building has no courtyard

Storey number: 1

Construction material: Local stone

Topography: Plain

Chimney: The building has no chimney

Entrance way: East