Industrial Cultural Heritage as an Alternative Tourism Model: Case study of the Wider Lavreotiki area in Southeastern Attica

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Abstract. The cultural heritage of a country includes monuments and historical spots, landscapes and a structured environment, collections, old and on-going cultural practices, knowledge and live experiences. It records the long history and identity of each nation and the collective memory of a place. In modern societies, history and culture have been transformed from process to product, thus becoming an integral part and a powerful reference point of economic life. Modern monuments, from the late 19th to the early 20th century, constitute dynamic systems of cultural heritage; especially industrial buildings that can become part of cultural tourism. The aim of this study is to demonstrate the potential development of the country's industrial cultural heritage for the diversification of the Greek “tourist product” and the complete promotion and renewal of the traditional touristic destinations in Greece. The development of the Greek “tourist product” beyond the coastal holiday, combining the monumental wealth of the country with the natural and historical, local and national environment where it is integrated, will create the necessary momentum for overcoming the structural problems of Greek tourism. Especially, the wider Lavreotiki area in Southeastern Attica, including the historic industrial complex, the French Mines Company of Lavrion, which was built in 1876, will be highlighted as an alternative touristic destination place.

1. Introduction

The term heritage implies wealth can be of spiritual, cultural or material nature, usually with the obligation to preserve, protect and promote it. Part of the cultural heritage of a place is also its modern monuments, which have one hundred to one hundred and fifty years of life so far. They may be bridges, public or private buildings with particular morphological characteristics of a certain period or industrial buildings. In recent years, the Industrial Heritage has provided also tourism to a profitable field of action and has a positive impact on culture, favouring, among other things, the promotion and preservation of cultural goods and generating income for their preservation.[1]

Heritage is undoubtedly of enormous social value in terms of preserving and fruitfully capitalizing, the memories of the past. Interestingly, heritage may also be an important factor of economic growth through its proper exploitation in the context of cultural tourism. For example, although Greece has rich heritage resources, it has not yet realized their economic potential. The gradual strengthening of competition of the low cost Mediterranean countries in the tourism sector relies heavily on tourist
product differentiation, which forms the base for an alternative approach to sustainable development.[1]

Usually, tourism in Greece is largely associated with the typical mass product “sea and sun”; this is of low added-value at least in per capita and cannot contribute to sustainable economic growth any further given the increasing international competition from many cheaper countries. Therefore, the need for diversification by transforming the profile of mass tourism and complementing the portfolio of products with cultural activities and alternative forms of tourism, which are potentially more sustainable and profitable in the long run.[1]

2. Cultural Tourism

By now, cultural tourism is defined by the Charter of Cultural Tourism (1976 Brussels by 17 international organizations, ICOMOS and WTO among them) as an alternative form of tourism not only for the discovery of monuments, complexes, locations, but also for their preservation and protection. With the new interpretative perspective, the New Cultural Tourism Charter (in MEXICO 1999 ICOMOS) notes that cultural tourism is a factor of knowledge and social development but should be developed within the framework of the carrying capacity of sensitive cultural and natural heritage sites, so that it does not evolve into a negative pressure factor, especially when the infrastructure of the sites is limited or inadequate.[2]

Twenty years after Agenda 21, the World Conference on Sustainable Tourism (Lanzarotte 1995) recognizes the need to build tourism development in the context of sustainability. That is to say:
- ecologically compatible and economically viable
- ethically and socially acceptable
- to respect and comprehend the delicate balance of cultural (anthropogenic) and natural environment.
- to promote alternative forms of tourism, such as cultural tourism combined with naturalist and ecological tourism.

Cultural tourism is related to a visit to a place for contact with its cultural elements (archaeological, Byzantine, classical or newer monuments, history, arts, folklore etc.). Also, cultural tourism is one of the oldest and most popular types of tourism. Over the centuries, individuals or groups of travellers, searching for knowledge, experience, personal discovery, travelled to places of archaeological, historical, folklore or religious interest, in places with a different culture and ethnological peculiarities.[3]

3. The Cultural Tourism worldwide

Tourism is, for many countries, a basic source of wealth and foreign exchange, and at an international level, it has a significant share in world GDP (Gross Domestic Product) and a particularly important share in export trading services. However, cultural tourism contributes to the goal of sustainable development, provided that it ensures the management of all tourism resources in such a way that economic, social and aesthetic needs are met while preserving cultural integrity, necessary ecological processes, biological diversity and natural ecosystems. Sustainable tourism development is also directly linked to the concept of the carrying capacity of a destination, which determines the maximum use of each site without creating negative impacts on resources, society, economy, culture and the environment, as well as without reducing satisfaction of the visitor.[4]

Cultural tourism is expected to be favoured by demographic developments in developed countries, as future “retirement societies” will have more time and interest in history and culture than traditional holiday tourism. Social conditions are also evolving positively for the cultural tourism development as the educational level is improved and societies are becoming more open and tolerant to other morals
and customs. On an economic level, the rapid growth of the countries of Southeast Asia, the Pacific and China is expected to boost consumption of tourism services in the near future, and cultural tourism in particular - corresponding to the pattern of outgoing Japanese tourism in recent decades.[5]

The tourist development of the cultural heritage is bounded by the Convention Concerning the Protection of the World Natural and Cultural Heritage, adopted in 1972 by 127 countries around the world (UNESCO 1972), and designated as Locations World Heritage, about 450 sets on the basis of their historical, scientific or aesthetic value. These sites are highly preferred tourist destinations, which generates revenue from their utilization - in the frame of their retention conditions as part of the World Heritage. Tourist development of cultural heritage poses, of course, risks such as the intense commercialization of the cultural resources of a site and the deterioration and the alteration of history through the selective or even eclectic projection of monuments, which is often driven by the search for authenticity.[1]

4. Industrial Cultural Heritage as an alternative model
The World Commission on the Environment and Development has formulated a definition of what sustainable development is, while at the same time asserting that economic development and the protection of the environment must be treated as a single issue. Sustainable development means the process of transformation where the exploitation of resources, investment direction, technological development orientation and adaptations to the institutional framework are harmonized and lift current and future opportunities to be met. Speaking of sustainable development in tourism generally; translates to, many kinds of alternative tourism. Their aim is to attract tourists who want to escape from the routine of everyday life seeking other types and ways of entertainment other than those of mass tourism, which is highly developed around the world and in Greece, and is preferred by the highest percentage of tourists (80%) so far. Alternative tourism respects the environment and ensures its preservation and protection.[6]

Also, alternative tourism is defined as the whole of integrated tourism services, which are distinguished by specialization according to the specific needs and preferences of their customers, are directed to a specialized audience, rely on ecologically tolerable and mild activities, and highlight without destroying the natural one area. The main characteristics of alternative tourism are the search for authenticity and contact with nature, the denial of impersonal tourist packages, the avoidance of cosmic beaches, the combination of holidays and the offer of voluntary work contributes to the protection of the environment and the emergence of cultural heritage and offers solutions to problems of tourist seasonality. It is considered to be a small scale development of tourism, originating and organized by the local population or local bodies and attracting tourists with special interests.[1]

Similarly, the promotion and exploitation of the cultural heritage and industrial history of a place is a form of alternative tourism of cultural heritage. The aim of similar monumental wealth is to highlight and promote the best of industrial facilities and constructions of the past, which are usually collapsed, looted and destroyed.[1]

5. Case study: The wider Lavreotiki area in Southeastern Attica
Lavrion is a unique historical place, where industrial facilities of antiquity and modern times coexist. It is, perhaps, the only “company town” in Greece, a town created for the needs of a particular industrial activity, providing important technical works and remarkable buildings of industrial architecture, while at the same time continues its course over time.[7]

As it is already known, mining practice and the production systems implemented in Lavrion are of particular value and importance for the wider Lavreotiki area. Geology and mineralogy in the region, as well as mining, enrichment and metallurgy technologies are very important aspects of the mining
and metallurgical history of the city. Until 1860, the mining and metallurgical works of the ancient ones, despite their coverage over time, remained visible in the area and at the appropriate time became the guide of the new miners, as well as a relatively ready processed stock for further exploitation.[7]

![Ancient leveled ore washers in Lavrion area](image1)

**Figure 1.** Ancient leveled ore washers in Lavrion area

### 5.1. Ancient Mines in Lavrion

The wider area of Lavrion has been inhabited since Prehistoric times with facilities such as in Sounio, Thorikos and elsewhere, dating from the Neolithic to the Mycenaean times (4000-1100 BC), while the mining activity starts from the prehistoric years at Thorikos and was developed in the 6th century B.C. with the contribution of Peisistratus.[8]

![Ancient mining gallery in Lavion area](image2)

**Figure 2.** Ancient mining gallery in Lavion area

However, the most important installations that survive in the area of Lavreotiki and which are associated with the extraction and processing of the ore are dated mainly in the 5th and 4th centuries.
Including mining galleries, ventilation shafts, ore separation and enrichment laboratories, large water tanks, as well as ore melting furnaces (Figures 1,2).[8]

Significant monuments of the mining activity are the ore processing workshops, which are preserved in good condition and spread over a large area of Lavreotiki with the main concentration points in the valleys of Souriza, Botsari, Agriileszas etc. The main premises of the workshops are the ore washers, whose form and evolution were first studied by Konstantinos Konofagos and are distinguished in helical and leveled. It is true that the silver of Lavrion was used in the Athenian coins, the Attic tetradrachma with the owl, already in the second half of the 6th b.c. and for about 500 years.[8]

5.2. 19th – 20th century Mines in Lavrion
The newest industrial state of Lavrion, has retained in its web a dozen of the factory buildings that marked its history. In the two industrial complexes of Lavrion, the Greek company which was located on the west coast of the harbor and the French, which was formed at the northern entrance of the city, some of the most important industrial facilities in Greece have been rebuilt since 1865 (Figures 3,4,5).[8]

Figure 3. Greek Mines Company ore washers’ building ruins in Lavrion city

The almost self-sufficient Company - Town of Lavrion has created a number of facilities, covering different areas of industrial architecture. The facilities that were built to serve Lavreotic metallurgy, metalworking, furnaces and plumbing, power stations, chemistry, machine shops, warehouses, mines, wells, railways and port constructions show a relief and a rare picture of industrial development.[8]

The complex of the French Mines Company is today an inseparable whole, which was fortunate to maintain its 240,000 sq. m. The heavy-duty stone-built in 1905, wooden roofs, and the reinforced concrete industrial areas of the interwar period, make up a real “dictionary” of architecture and technology to the north side of Kyprianou area, as Nikos Belavillas specifically mentions. On the contrary, only a few units in Lavrion, mainly in the harbor area, were rescued from the buildings of the Greek company. Apart from the two complexes, in the hills and the coasts of Lavreotiki district, the buildings surrounding the exits of the wells, in Kamariza and Plaka, are scattered, whereas the
"platforms", the bridges for loading the ores in the ships, are still saved in the harbor of Lavrion, Legrena and elsewhere.[9]

The architecture of the French Mines Company and the Greek company machine shops follows the type applied to the large, sheltered industrial areas at the end of the 19th century. Unlike to the machine shops, the laundry buildings are unique in their nature, because in order to exploit the gravity at the different stages of the hydro-industrial ore enrichment, very high heights were required.[9]

Figure 4. French Mines Company complex in Lavrion city

Outside the boundaries of the two factories, the seaside metal platforms projecting into water for loading and unloading ships, with the excellent French harbor metal platform, are unique examples of port works. These are metallic bridges in strong stone foundations, with cranes and grid ends, for loading the ore. Lastly, the perfect construction of the chimneys, the "Sherpieri", "Louisa" mines and other hills scattered in the hills, complete the image of a potentially open museum of industry that spreads across Lavreotiki area.[8]

Figure 5. French Mines Company mechanical equipment in Lavrion city
5.3. Railways of Lavrion – Local Networks
Apart from the 19th century mines companies, there were also the railway networks serving the old Lavrion, which are divided into two main categories: In the network of "Attica Railways" and in the local small networks used for the mines companies operation in Lavrion.[9]

The "Attica Railways" were constructed with the financing of the Greek Company in 1885 and connected Athens, the capital of Greece with Kifissia and Lavrion (Figure 6). The small local networks were two and were constructed to serve exclusively the needs of the large mines companies of Lavrion: one for Greek and one for the French company. Their construction began in 1870 and their operation depended directly on the development of the companies they belonged to.[9]

Figure 6. The “Attica Railways” connected Athens with Kifissia and Lavrion city in 1885

As can be seen from the above, Lavrion has been crossed by three different railway networks (the Attica Railways and the two companies rail network), which at times intertwined with unifying lines (Figure 7). Of these, the rails of the auxiliary railway lines used for the circulation of the wagons within the mines, as well as the part of the line Athens - Lavrion, namely from Gerakas to Lavrion, is in good condition, being a unique phenomenon for Greece, due to the complexity and diversity of rail networks within a single city.[8]

Figure 7. The two companies network in Lavrion
6. The city of Lavrion today

Today, Lavrion (Figure 8) after a long period of crisis, since the mines closed in 1989, is in a period of recovery and adaptation to the new priorities of modern development. The various projects that are either planned or under way, involving a dynamic development of Lavrion city, which with proper handling, they will reach success, both on national and international levels. Also, as it is already known, Lavrion is the second port of Attica, apart from destination and tourist sightseeing, it is still offered for scientific research and study of the cultural heritage monuments and industrial archaeology.[10]

![Figure 8. Lavrion city’s view from the French Mines Company platform](image)

In view of the modern development policies of the Greek capital, the city of Lavrion is expected to be developed as the second huge port of Athens after Piraeus. At the same time, the coastal area that is developing as a tourist region also intensifies the role of the city of Lavrion in the metropolitan area of Athens. In this perspective, it is estimated that all the networks of public transport will be developed, especially the urban rail transport means, which will increase the accessibility of the capital as well as the travel to Lavrion and the island's regions. In this way, they will particularly highlight the role and prospects of the activities currently offered by both the ancient mines and the historical industrial monuments of the French and Greek Mines Companies, together with the railway network of the factories and the region.[10]

7. Conclusion

Concluding, the industrial cultural heritage can be a form of alternative tourism. In particular, areas not so well-known and remote from the centre, as is the wider area of Lavreotiki examined above, can be a pole of alternative tourism due to the industrial monuments they may have. The emergence and exploitation of such monuments is a necessary reality as they are live monuments, preserved and adaptable, contributing to the reconstitution of the city's image.

In particular, in the research case study, the mines of the city of Lavrion, ancient and modern (Figure 9), being part of the urban fabric are monuments, which every visitor has the opportunity to see, observe and study. Their preservation, appearance and systematic projection will make Lavrion a landmark of the wider region, which will offer the visitor not only recreational entertainment but also education. Briefly, the buildings and mechanical equipment of the modern mines, together with the mining workshops of antiquity and the ancient settlements, can form an “open Museum of Industry” embedded in the city’s web and the wider region.
Figure 9. The French Mines Company complex in Lavrion city (2019)

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