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ENVIRONMENTAL MANAGEMENT IN THE COASTAL URBAN AREA OF KALLITHEA IN ATTICA REGION

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Abstract

Nowadays the majority of coastal urban areas facing issues concerning economic growth in combination with environmental protection. These challenges have led local authorities to take immediate measures as well as the European Union to formulate new policies. This study refers to the environmental problems of the coastal urban area of Kallithea and on the measures that have been taken in response. Specifically, it focuses on land uses, natural resources and business. To conduct this study a method of personal interviews with the local authorities and an in situ research took place. At the same time, the survey focuses on action and policies that have been implemented until now regarding growth and improving of the quality of life. The results showed despite the problems the research area presents, it has dynamics for growth developments and revitalization. The implementation of new measures and new policies under the frame of sustainable development, taking into account the directives of European Union, is required.

Keywords: Environmental Management, Coastal Urban Area, Kallithea

1. Introduction

The European continent is considered - not by chance - as an urbanized area, given that more than 2/3 of the population lives in cities. Cities which present most services but often face problems. Some of these are traffic, noise, degradation of air quality, neglect of the built environment and others (CEC, 2004). All of the above degrade the quality of the urban environment resulting to negative effects on the quality of life for the residents.

Along with environmental problems, many urban areas face many economic problems such as unemployment, market fall, businesses closing, lack of funding for the construction of civil works and other. Therefore, to address these problems, the government has to face, besides environmental issues, economic ones as well, which also degrade not just the quality of life of the residents, but very often their health too.

Regarding the European Union, in recent years it has intensified its efforts to upgrade the urban environment and improve the lives of European residents. The efforts concern at a

large rate the countries of southern Europe which are faced with major financial debts. Among these, Greece is also included.

In this effort to upgrade and protect the urban environment an important role is played by the funding on behalf of European Union through the Community Support Frameworks for the construction of infrastructure projects and support for businesses.

This study refers to environmental management problems in the urban municipality of Kallithea in Athens. The survey focuses on land uses, on building, on degradation of natural resources and businesses.

Taking into account the policies that have been applied for the financial aid of business, and financing for the construction of public works through the Community Support Frameworks until today, it assesses the existing situation in Kallithea and proposes measures for sustainable development of the area.

2. Case Studies

2.1. Municipality of Kallithea

Kallithea is a Municipality in the conurbation of the Attica region in Greece and is located in its southern part. To the east it is confined by Sygrou Avenue and borders both with Nea Smirni and Paleo Faliro, to the west it is confined by Ilissos river and borders with both the Municipality of Tavros and Moshato. To the north it is confined by Lagoutsis and Traldari streets and borders with the municipality of Athens and to the south it is confined by Tzitzifias beach which is about 1400 meters long (Figure 1).

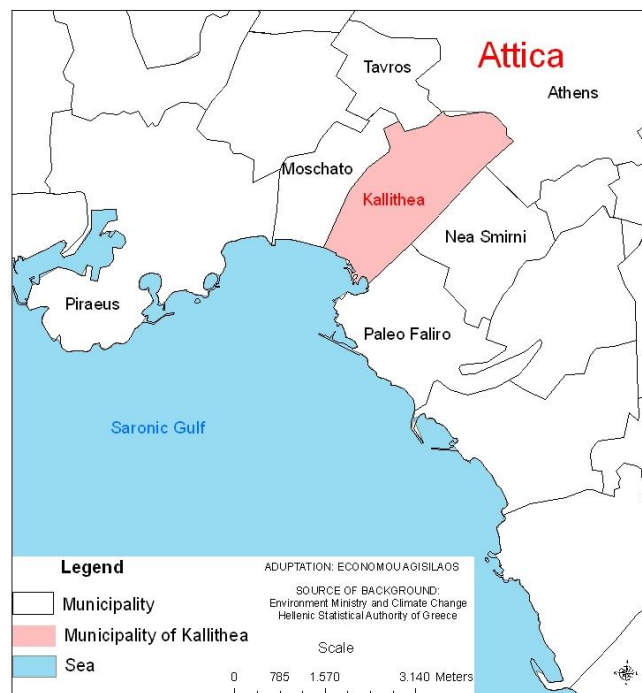


Figure 1. Municipality of Kallithea

The Municipality of Kallithea has Theseus, the son of Aegeus, as an emblem who according to legend, disembarked on the coast of Kallithea (Tzitzifias) when he returned from Crete (COKM, 2006).

In 1815 the area of Kallithea was inhabited around a small settlement outside the center of Athens. In area refugees from the Asia Minor catastrophe in 1922 have settled. In 1925 it became a Community and in 1934 a Municipality. Then, the development of the municipality followed the general pattern of postwar development that was followed throughout the Greek

capital, and without any government intervention the development was based on private initiative.

Today, the area is purely residential, without holiday areas and without arbitrary expansions. This happened due to the rapid reconstruction and the fact that it was between built neighboring areas and road arteries.

Moreover, the area presents significant open spaces firstly due to the transfer of the hippodrome that existed for many years in Kallithea and secondly due to the available waterfront. This space can be exploited by redevelopment projects and other activities that will help the municipality to further develop.

2.2. Economic Elements

With regard to the production sectors during the period 1971-2001 the area of Kallithea in the primary sector presents a gradual decrease of employment, from 0.62% in 1971 to 0.32% in 2001. Similarly, employment fell and in the secondary sector, from 42.16% in 1971, it reached 18.52% in 2001. By contrast, employment in the tertiary sector presents a slight increase. From 53.91% in 1971 it reached 64.18% in 2001 (HSAG, 2002).

In addition, the last decade has found an increase in the unemployment percentage from 4.44% in the 80s to 10.30% in the 90s.

The area of Kallithea presents a great number of enterprises (Figure 2). During the decades 1991-2010 it presented an increase in the number of enterprises, in contrast to 2011 where there was a small reduction due to the economic crisis in Greece (ICG, 2012). The downward trend regarding enterprises continues until today. The closed companies are mainly found in the commercial streets in the area of Kallithea such as Theseus Street (MK, 2013).

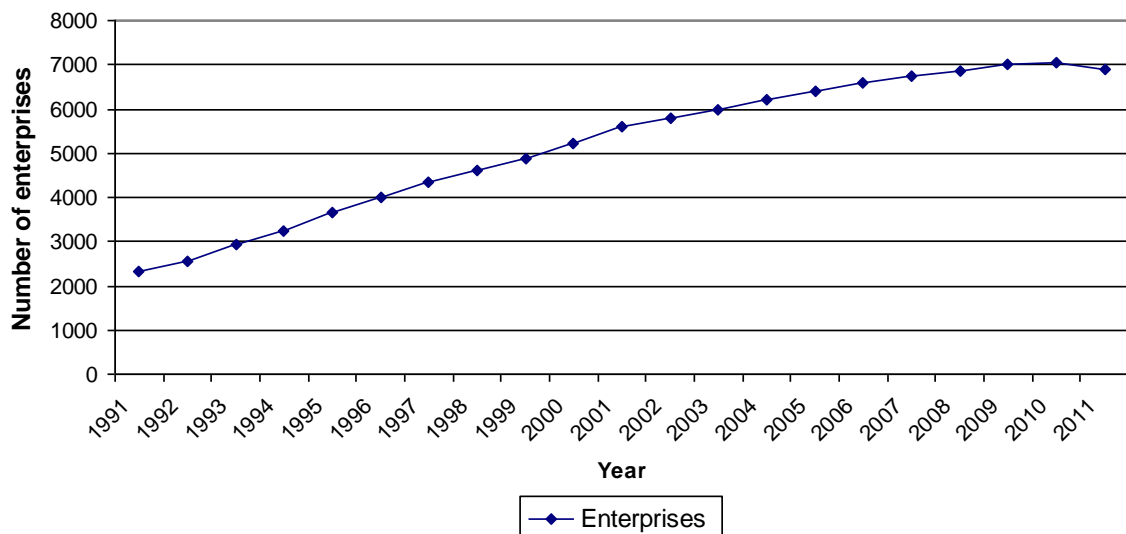


Figure 2. Number of enterprises in the area of Kallithea
Source: ICG (2012).

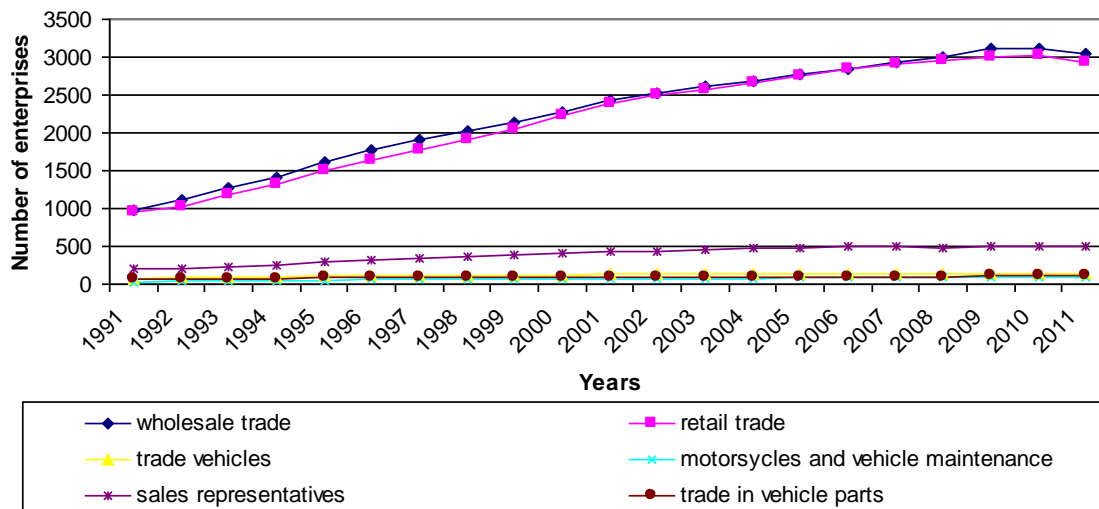


Figure 3. Main categories of enterprises in the area of Kallithea
 Source: ICG (2012).

The largest number of enterprises is related to wholesale and retail trade. Industry commercial agents and representatives follow, with vehicle, motorcycles and auto maintenance and parts trade, coming next (Figure 3).

The remaining companies, such as grocery stores, pharmacies, activities associated with agriculture end others are present at low rates (ICG, 2012).

2.3. Redevelopment Works

In recent years in the area of Kallithea many technical interventions have taken place so as to upgrade the area. The major redevelopment projects are:

- Cultural Park "Cultural Center Stavros Niarchos Foundation". The construction of peripheral park is taking place in an area of 243 acres in the area of the old hippodrome. Specifically this park includes (OJHR, 2009): New building facilities for the National Library of Greece (NLG) and the National Opera (NO), green park with educational, cultural and leisure character, a Municipal Park and sports facilities (football field, swimming pool, changing rooms) along with support facilities (playground, refreshment and cultural multipurpose room) with a total coverage of 1,000 m². The project has been funded by the Stavros Niarchos Foundation with a total budget of 450 million euro for an area of 50,000 m² not including parking space and auxiliary facilities.
- Redevelopment of Kallithea-Moschato Beach. With the redevelopment of Kallithea-Moschato beach, the area is united with the sea through the submersion of Poseidon Avenue, which will be submerged by one meter under sea level and moved by 100 meters from its current position. The projects that are to be built are: A Park, bike paths, walkways, piers, sporting venues, cultural structures such as outdoor cinema, small cafe's a diving park and others. The construction of a flood channel where rainwater will be gathered and transferred to Kifissos River is also planned.
- The irrigation of the park is planned to be provided by using part of the treated water from the biochemical plant of Psytalia. In total the redevelopment of the beach of Kallithea-Moschato will extend for an area of over 1000 acres, of which 760 acres, will be green spaces and park, while the total structured surface (buildings for recreational uses, cultural and sports) will cover 2,500 m². The project will be funded by the National Strategic Reference Framework (NSRF) and the Green Fund, while studies (general and application studies) have been funded by the Stavros Niarchos Foundation (budget 4,000.000 Euros).

Completion of these projects is being scheduled by 2015 and will cost a total of 215 million Euros and 2.000,000 Euros for its maintenance.

- During construction works significant benefits will arise as it will yield economic activity in Greece as well as hundreds of jobs. Annually it is expected to employ from 1500 to 2400 people.

2.4. Road Works

The area is connected to Athens by Theseus and Sygrou Avenues and to the South is crossed by Poseidon Avenue. In the area there is also a metro line that connects the area with the center of Athens and the port of Piraeus. The area is served by 33 bus lines, which include 102 stops and connect Kallithea with the center of Athens and the surrounding areas.

2.5. School Infrastructures - Education

Kallithea is the area where the Pantion University, Harokopio University and Sivitanidios School of Arts and Crafts are seated. Also, there are 11 nursery schools, 24 kindergartens, 27 primary schools, 25 high schools and 1 technical high school.

2.6. Sporting Facilities

Local Sports centers and local courses include the following: Grigoriou Lambrakis Municipal Stadium, Hesperus closed gym and Atlas gym, 2 municipal gyms, 2 municipal courts for mini football, three municipal sports centers, 2 outdoor tennis basketballs and 1 tennis and 1 center for table tennis. At the same time, many sports clubs and associations have been formed.

2.7. Other Services

In Kallithea there is a cultural center, a theatre, a museum, a Greek Post Office, banks, consulting offices, shops, a fire department station, a police department, a Social Insurance Institution, and clinics such as the Onassis Cardiac Surgery Center.

2.8. Open Spaces

In Kallithea the most important green space is the central park with an area of 10 acres next to the Davaki square. It is located among Matzarriotaki, Sivitanidou, Grypari streets and Eleftherios Venizelos Avenue (Theseus).

The green area includes trees, shrubs and herbaceous plants. The area is a haven for birds (*Streptopelia decaocto*, *Columba livia*, *Passer domesticus*, and others) as well as some animals such as turtle of the kind *testudinata* and others.

2.9. Tourism

In the area of Kallithea there are 4 hotels (2 and 1 stars), with a total hotel potential of 177 rooms and 273 beds.

According to the statistical data during the period time 2005-2009 the area presented an increase in the number of arrivals from 2005 to 2008, which was followed by a slight decrease (Figure 4). While the number of overnight stays shows an increase from 2005 to 2009 where foreign tourists outnumbered local ones (Figure 5).

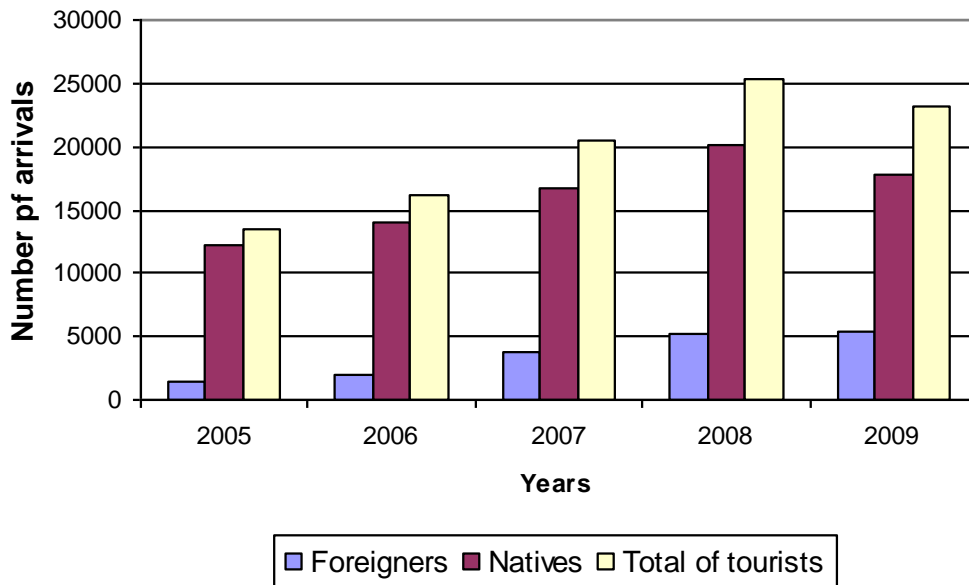


Figure 4. Number of arrivals in the area of Kallithea from 2005 to 2009
Source: HSAG (2010).

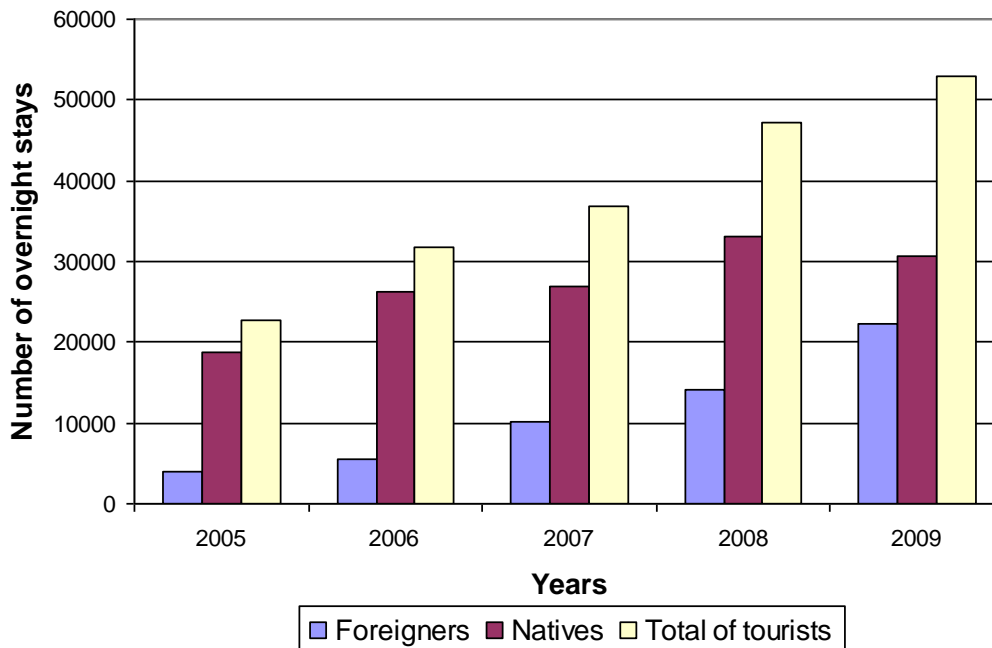


Figure 5. Number of overnight stays in the area of Kallithea from 2005 to 2009
Source: HSAG (2010).

2.10. Land Uses

Kallithea is an urban area and is one of the most populated areas of Greece, with 20202 inhabitants/Km.2 land uses including mainly general home use (Figure 6).

While classifying land uses by area, one finds that the larger area is covered by the urban structures (urban blocks) at a percentage of 65.81%, followed by roads (23.61%) open

area -parking (9.79%), green areas (3.24%), sports facilities (0.40%) and Tram lines (0.14%) (Table 1).

Table 1. Land uses in the area of Kallithea

Municipality of Kallithea		
Land uses	Area (square meters)	%
Building square	3,129,017.51	65.81
Green area	161,604.81	3.24
Sports facilities	199,64.12	0.40
Open area-parking	487,748.57	9.79
Tram	7,071.78	0.14
Roads	1,176,173.22	23.61
Total	4,981,580.00	100.00

Notes: Our data processing is based on data from the Geographical Information Systems.



Figure 6. Land uses in the area of Kallithea

2.11. Building Activity in the Area of Kallithea

According to the statistical data of the Hellenic Statistical Authority of Greece, the area of Kallithea presented a significant of building activity, during the period 1960-1980. This was followed by a decrease due to a high degree of pre existing development, and the fact that most of the area had been already built (Figure 7).

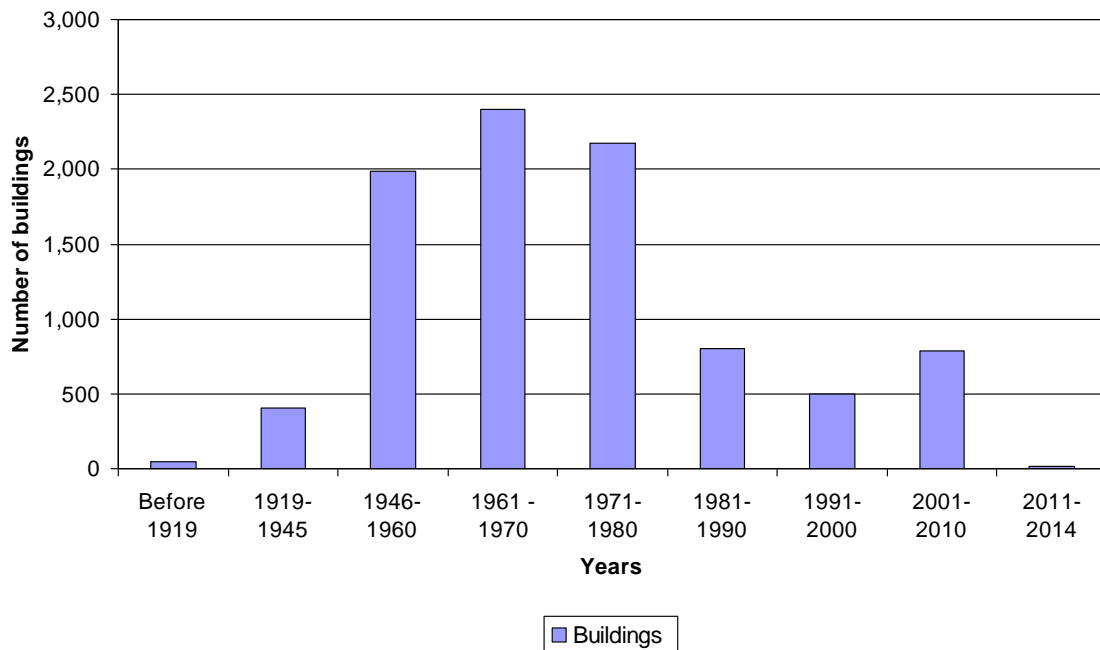


Figure 7. Number of building in the area of Kallithea from 1919 to 2014
Source: HSAG (2015).

However, during the last decade an increase in building activity has re-emerged. The lookout for new homes and the compensation system are the main reasons that strengthened construction recently. From 2006 and after, building was gradually reduced due to the limitation of the economic potential of the residents.

The General Urban Drawing (GUD) has been prepared within the frame of general development planning of the country (5-year Economic and Social Development Program). According to the approval of the GUD for the Municipality of Kallithea, the urban planning of the area was planned for a population of 141,000 inhabitants (OJHR, 1989).

3. Results and Discussion

The survey using personal interviews showed that the area of Kallithea presents several problems such as:

- Traffic problems,
- Noise pollution in the coastal Poseidon Avenue due to high traffic,
- Insufficient parking spaces,
- Flooding Phenomena in rainwater collection network due to the age of the network,
- A small rate of open areas relative to other spaces,
- To a lesser extent the problems of arbitrary construction and abandonment of buildings,
- Market decline and enterprises closures due to the economic crisis,

- The cost of litter transport that is recyclable is high and exceeds the relevant profit. There is a lack of reception area for waste. Mixing of recyclable materials with common litter has also been observed.

In the area, a recycling program has been taking place from 2006 until today, where the recycle materials are collected and transported to the recycling plant. Approximately 20% of solid waste is recycled. The transfer is done by garbage trucks which belong to the recycling company. Thus, the Municipality pays the cost of vehicle maintenance, fuel and employment. While the economic benefit of recycling varies from 58,000 up to 120,000 euro/year.

3.1. Measures to Deal with the Problems

- In the coastal area, redevelopment projects will take place. Until today, relative studies have been carried out,
- Also, work to address rainwater via collective pipes will take place,
- In the area, the submersion of parts of Poseidon Avenue has been proposed, to connect the urban fabric with the waterfront of the municipality,
- In order to reduce the cost of litter transport more transfer stations at a short distance from the municipality should be built,
- It needs further awareness on behalf of residents, regarding for cleanliness of the Municipality and active participation in the recycling program.

Also, the GUD includes measures in order to protect green areas such as (OJHR, 1989):

- Creation of green area within the frame of urban design reconsideration, particularly in a part of the area of the former factory IZOLA, in the area of Harokopio University and in the area of the Sikelias hill (6-7 acres),
- Promotion of the old refugee settlements and urban planning for the Sikelias hill,
- Removal of the Hippodrome and creation of sports facilities and green areas,
- Taking of measures to protect the environment and protect of landmark buildings in the area.

3.2. Investments in the Area of Kallithea

During recent years, in the area of Kallithea various projects that are presented below have taken place (Table 2 and Table 3).

Table 2. Financial support for businesses in the area of Kallithea

a/a	Implementing entity	Approved projects in National Strategic Reference Framework (NSRF) 2007-2013	Number of projects	Budget (euro)
1	School Building Organisation	Education	3	5,856,153
2	Municipality of Kallithea	Education	3	1,800,000
3	Municipality of Kallithea	Restoration of buildings	2	2,985,911
4	Municipality of Kallithea	Social welfare	1	61,500
5	Municipality of Kallithea	Social Innovation Network	1	390,000
6	Municipality of Kallithea	Employment	1	480,000
7	Municipality of Kallithea	Information society	1	442,348

8	Companies	Redevelopment	1	9,817,151
9	Companies	Employment	1	5,559,466
10	Companies	Road transportation	1	2,166,335
11	Companies	Social and mental health - Support	3	5,856,153
12	University	Research on development and upgrading	5	1,800,000
13	Ministry	Expansion Upgrade of entrepreneurship	1	2,985,911
		Total	24	29,558,864

Notes: Our data processing is based on statistical data from the Ministry of Finance, Infrastructure, Shipping and Tourism.

Source: MFIST (2015).

Table 3. Financial support for businesses in the area of Kallithea

a/a	Financial aid programs for enterprises	Numbers of enterprises	Budget (Euro)
1	University research	11	295,000
2	Employment of young people in tourism	36	983,385
3	Enterprises for recruiting the unemployed	95	1,081,838
4	Extraversion-Competitiveness	19	767,730
5	Aid for freelancer professionals	70	1,081,627
6	Aid for - small and micro enterprises	119	560,4245
7	Entrepreneurship with a focus on innovation	18	863,987
8	Technological development-Textile industry	5	428,095
9	State aid through the aid regulation 1988/2006	61	1,664,921
10	Aid for processing in the new conditions	8	649,646
11	Financial support in small media enterprises through Regional Operational Program	72	2,795,261
12	Information	17	3,269,969
13	Environment	1	41,133
14	Industrial research	1	135,513
15	Security	5	852,383
16	Trade-Publications	2	286,140
17	Transportation	1	21,665
18	Trade	2	244,514
	Total	543	21,067,052

Notes: Our data processing is based on statistical data from the Ministry of Finance, Infrastructure, Shipping and Tourism.

Source: MFIST (2015).

From the above mentioned, it is found that in the area projects have taken place through European programs, and many companies have been strengthened financially to increase productivity and employment. Their contribution to reducing unemployment in Kallithea is important, taking into account that unemployment in the Attica area reaches 27%.

4. Conclusions

From the above data it is showed that the area of Kallithea is a densely populated urban area the largest part of which has been constructed. The survey showed that the lookout for new homes has led to increased construction activity, which of course has been profoundly reduced from 2010 and onwards.

In the area the tertiary economic sector prevails, mainly concerning businesses related to the Wholesale and Retail Trade. At the same time Kallithea presents a small tourist infrastructure for serving tourists. The area faces problems connected to increasing unemployment and reducing numbers of enterprises, after 2010 due to the economic crisis in the country.

The survey showed that although the area has an electric rail-road network, and many means of public transport, it faces traffic problems, noise pollution mainly on the coastal avenue and parking problems.

The renovation works that have taken place in recent years, have improved to some extent the quality of life, but they are not adequate, since green areas cover a small percentage when compared to the total constructed area. But the new redevelopment projects that are taking place, such as the creation of the cultural and recreation park, in the old hippodrome, are expected to upgrade the area and will connect the urban zone with the waterfront. Additionally, they will address the phenomenon of flooding in the coastal zone by accompanying projects such as a rainwater collection network.

Although the municipality has implemented a recycling program, only 20% of the waste is recycled due to the lack of an adequate number of citizens' participation in the program. Also, the lack of transfer stations has increased the cost of waste collection.

Finally, we conclude that Kallithea has a need of development and environmental protection projects. Green projects and creation of parking spaces are required as well as traffic studies to improve traffic, along with the construction of a network for rainwater collection. Citizen participation is essential in both increasing recycling and addressing other problems.

The area has significant land open spaces mainly in the waterfront. Proper use of the space of the hippodrome and the waterfront, will bring significant benefits to the environment. The expected increase in green area coverage, the improvement of living conditions and the creation of a world class cultural center, will contribute both to the promotion of culture and the development of the area.

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