

Littoralization and Urbanization

Greece scale





Analysis of Threats and Enabling Factors for Sustainable Tourism at Pilot Scale

Littoralization and urbanization Greece Scale



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OVERVIEW

The present document was produced in the framework of the **Co-Evolve4BG** project “*Co-evolution of coastal human activities & Med natural systems for sustainable tourism & Blue Growth in the Mediterranean*” in relation to Threats and Enabling Factors for maritime and coastal tourism development on a national scale” Co-funded by ENI CBC Med Programme (Grant Agreement A_B.4.4_0075).

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REVIEW

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I. Introduction

Coastal cities have played an important role since ancient times. The advantages of these areas consist in the development of human civilization the transport of goods, which was the most widespread means and remains crucial even today. Moreover, the natural beauty of coastal areas is gradually making them the most attractive places to live. At the beginning of the 20th century and after World War II, the concept of tourism was introduced due to the rising standard of living in a major part of the Western World. In Greece, tourism is nowadays considered the country's "heavy industry", supporting the development of the economy. Although tourism changed the economic geography of Greece, for example, small islands and coastal areas, which in previous years depended on fishing and agricultural activities, became famous resorts. Environmental and (sometimes) cultural degradation are consequences of this change.

Furthermore, the devastation of traditional agricultural economies and societies in the inner areas brings coastal urban growth in many Mediterranean countries. Urbanization and littoralization have been strengthened by significant projects, which have developed the coastal regions, such as large-scale transport infrastructures.

Littoral areas are the most complex and sensitive ecosystems, for that reason their long-term sustainability is considered. Coastal areas' major threads are littoralization and urbanization. The disappearance of wetlands, coastal erosion and the elimination of natural habitats are the consequences of urban development on the environment.

II. Imbalance and littoralisation of the Greek Territory

II.1. History overview of the Greek territory

Greece has been associated with the coastal regions since the first civilization on its territory. The Cycladic Civilization (c. 3,200–c. 1,050 BC) was based on the Aegean islands mainly in the islands of Naxos, Syros and Keros. The Minoan Civilization (c. 3,000 BC–c. 1,100 BC) was based on Crete and was known for its naval power, while the Mycenaean Civilization (c. 1,600–c. 1,100 BC) spread throughout most of southern Greece and had settlements, mostly along the coast.

During the Golden Age of the city-state, the Greeks, known as the Phoenicians, expanded and established colonies along the coasts of Minor Asia (Ephesos, Mytilos), the Bosphorus and the Black Sea (Byzantium, later Constantinople), Sicily, and Southern Italy (Syracuse, Neapoli), and Southern France (Phocaea Marseille). The coastal area within Greece and all over the Mediterranean was of crucial importance for the blossoming of Greek Classical Civilization.

The coastal areas were also important during Macedonian expansion and the Hellenistic era that followed. During the Roman years, the coastal cities of Greece remained strong, although they had relatively declined from their earlier glory. Nikopolis, built by Octavian after his win at Actium, and Thessaloniki are among the important coastal cities of the time.

After the decline of the Roman Empire, Byzantium came to the foreground. The most powerful empires of the time were those that managed to gain naval supremacy, the coastal cities such as Constantinople (nowadays Istanbul) and Alexandria flourished for many centuries and represented centers of political power.

In Greece today, Thessaloniki retained its importance as a route from the Balkan hinterland to the Aegean Sea, while a series of other cities have grown in importance. With the collapse of the Byzantine empire in 1453, the struggle for the sea between Venetians and the Ottomans remained strong, as well as the importance of coastal cities like Corfu, Methoni, and Handakas (Heraklio), but also Mytilene and Negroponte (Chalkida).

During the era of the Ottoman Empire, the growth of maritime trade played a part in the welfare of Greek coastal and Island cities. The Ionian and the Aegean islands, Crete and some areas in Macedonia and Thrace were “The Greek System of Urban Centers”.

As Nation-States started to form in Western Europe, the spirit of the enlightenment also appeared in Greece, and Modern Greek was born after the Greek Revolution. Even the existence of the new state can be attributed to the importance of the islands and the strong fleet they assembled, the only force that could face the Ottomans on equal terms. The first Capital of the modern state Nauplio is a coastal city.

After the independence of the Greek state in the year, 1828, Athens became the capital of the newly established Greek State. Athens continuously reinforces its population dynamics, and the idea of “center” and “periphery” is being introduced. In the year 1848, the population of Greece was 987,000 inhabitants, of which 10% lived in Athens, but Piraeus was not at that time part of Athens, so we cannot regard Athens as a coastal city. On the other hand, “Ermoupolis” city and “Patras” city were examples of how trade was still a very significant factor in the growth of coastal cities (Katochianou and Markogiannaki, 1989)

In the following years until 1889, two new coastal centers came to the forefront of Ionian Islands “Kerkyra” and “Zakynthos”. So, at the end of the century in Greece, there were six urban centers all of them in coastal areas. The pattern of economic geography changed a lot in the following period after the liberation of Macedonia and Thrace. A million refugees from Asia Minor are added to the population of Athens and at the same time the cities of “Serres”, “Drama”, “Xanthi”, “Komotini” and “Kavala” became major urban centers, with only the last two of them being coastal. Some Ionian and Aegean coastal cities disappeared, but others have emerged, like “Chios” and “Mytilene”.

II.2. The process of structuring the Greek territory after WWII

After World War II a new important trend emerged in Greece that greatly affected urbanization and littoralization. After a devastating WWII for all of Greece under a triple occupation, liberation was followed by the Greek Civil War which greatly affected rural populations.

The fierce civil war was mainly fought in rural and mountainous areas and the population was caught between the national government and the communist forces. The war disrupted the social nexus and impoverished the communities that left rural areas to move to the cities.

Since most of the important cities are in coastal areas this has led to a huge influx of the population to the coastal areas. The most important increase was seen in Athens, but also in other important urban centers such as Thessaloniki, Patras, and Heraklion.

In addition to the above, the new policies for Urban Development and most importantly the policy of “Antiparohi¹” have led to the development of densely populated cities. At the same time, this policy not being sufficient to cope with demographic pressures, peri-urban areas were built without planning, further aggravating the situation in the cities. The decades from the 50s to the 90s have led to the deterioration of environmental conditions of the cities and for the coastal cities of the marine and terrestrial ecosystem that surrounds them.

¹ A policy allowing the owner of a house to transfer ownership of the land to a contractor who, after building a multi-story building, compensated the owner with ownership of apartment(s) for the same value of the land.

II.3. Recent changes

Over the years, Athens accumulated almost 50% of the country's population and over half of Greece's financial activity thus creating threats to the growing abilities of the other peripheral cities. Recent studies distinguished an important number of small cities showing high demographic and economic development. Many of those cities were in tourist coastal areas (*i.e.*, Crete and Cyclades). Moreover, the research points out that the rest of the cities, which are not coastal, have experienced a recession (Petrakos *et al.* 2000).

In 2008, Kotzamanis, Tsilimigas and Stathakis give us a picture of the 2000's demographic rates of Greece's coastal cities, which is shown in the following image.

The number of Greek coastal communities is half of the total number. The following image clearly shows an inverse relationship between area and population.

In Greece, demographic trends in coastal towns with more than 20,000 inhabitants are increasing as they offer easy access to transport networks and a great source of raw materials and food. In addition, coastal cities offer many employment opportunities and housing needs.

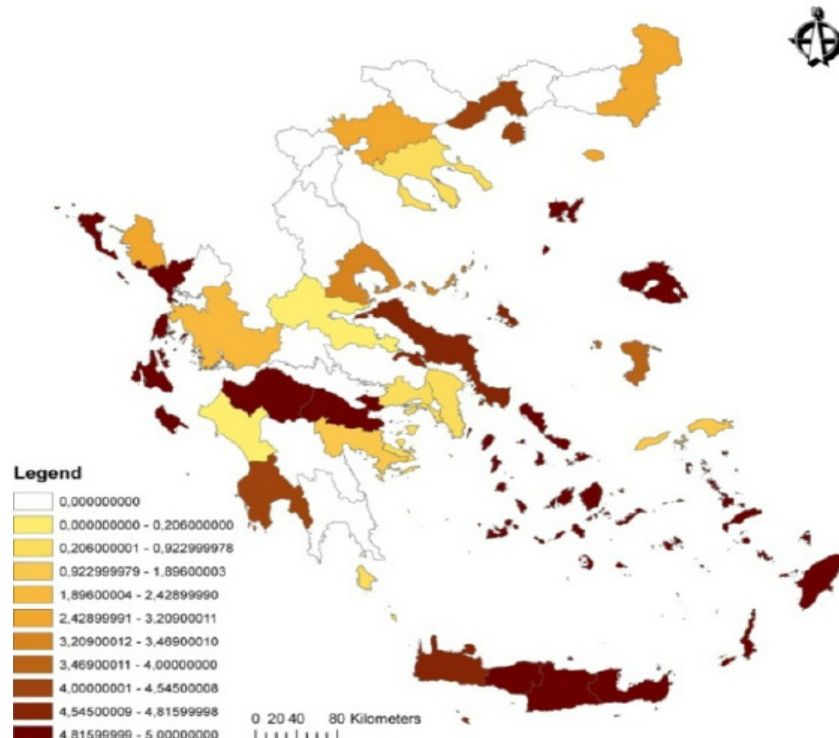


Figure 1. Greece coastal zone population (Polyzos and Tsiotas, 2012)

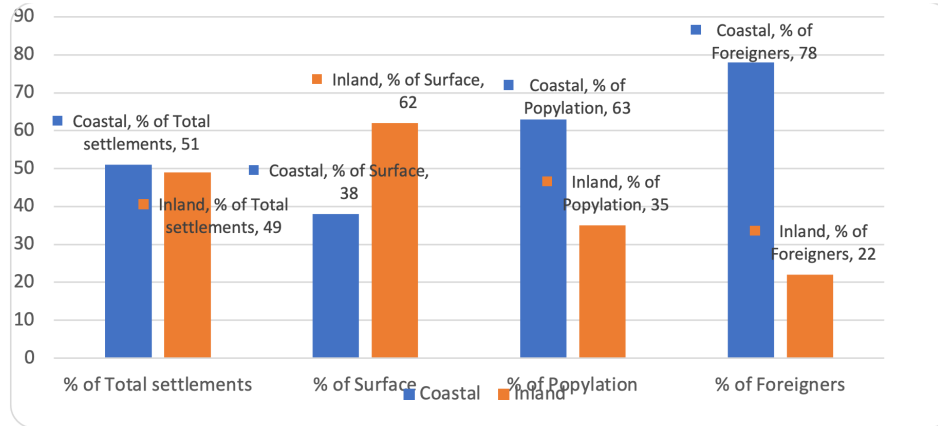


Figure 2. Population of coastal and non-coastal settlements, % of foreigners in 2001 (Kotzamanis *et al.* 2008)

III. Urbanisation and coastal development in Greece

III.1. Metropolisation in Greece

The effect of Urbanization and Metropolisation in Greece has been the focus of the research of many authors. The phenomenon was mainly studied taking into consideration the rural-urban divide and the internal immigration after WWII.

The following figure presents the evolution of the population of Athens as a Metropolitan area since it became the capital of the Modern Greek state. Athens evolved from a small settlement into a big metropolitan area incorporating surrounding settlements, the largest being that of Pireas.

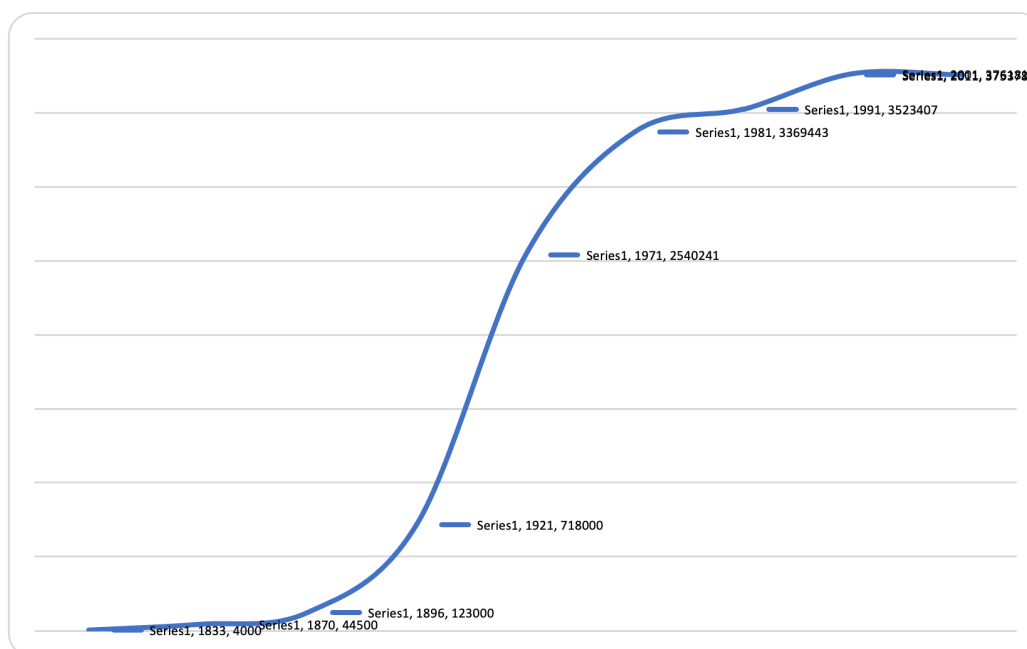


Figure 3. Evolution of the Population of the Athens Metropolitan Area

The trend is also similar in Thessaloniki which is the second largest metropolitan area also located on the coast. Thessaloniki has experienced a large increase in population after WWII, like the logistical increase in Athens.

Nowadays, Athens metropolitan area corresponds to 35% of the total population of Greece, while the two large metropolitan areas correspond to 44% of the population.

Not taking into consideration the two biggest cities, the urbanization trend affected all other important metropolitan areas, but more crucially the ones on the coast as is discussed in the following section.

It should be noted that 4 of the five biggest urban areas in Greece are on the coast, while only one of them being on an island (Heraklio, Crete).

III.2. The evolution of the population in coastal areas

Although there are a significant number of studies that examine aspects of urbanization in Greece, there are only a handful of studies that examine the effects in coastal areas. Kiousopoulos (2008) examines exactly these effects, and his study is presented below. Kiousopoulos divided all Greek prefectures (regional units) into two types: “coastal prefectures” (C1) and “inland prefectures” (C2). The selection did not only take into consideration whether the prefectures have a coast, but also the importance of the coast in their economy (Kiousopoulos, 2008).

The study looked at the demographics of the prefectures for 50 years taking into consideration the above categorization (C1 & C2). The study examined the evolution of the demographics excluding the metropolitan areas of Thessaloniki and Athens to weigh whether coastal areas are more attractive.

The study covered prefectures representing 54.41% of the total population in all forty-nine (49) prefectures. More specifically, C1 depicted in 2011 3,810,310 inhabitants in a total of thirty-one (31) prefectures and C2, 2,058,760 inhabitants in eighteen (18) prefectures. However, as depicted below, things weren't always like this.

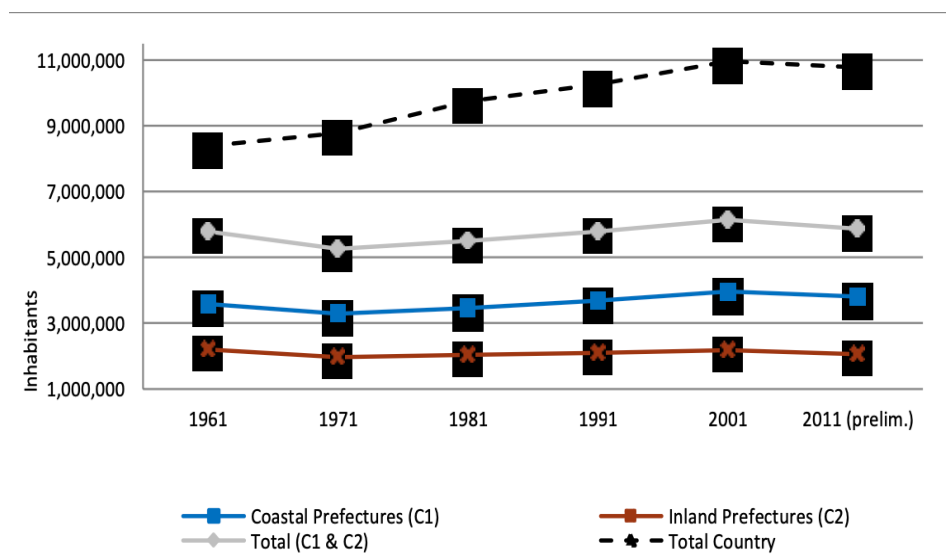


Figure 4. Comparative population evolution among the coastal and inland prefectures

Figure 4 represents the population evolution of the different prefectures based on the above categorization. There is a decrease in the non-metropolitan population until 1971 and an inversion up to 2001, but only for one decade. Moreover, the coastal areas have a bigger population but are also more attractive than the inland ones which manifest a stable population throughout the years.

An important aspect is that even though the population of Greece increased steadily up to 2001 this was not the case for the non-metropolitan areas which did not manifest significant fluctuations.

In the 1960s most of the prefectures showed a drop in their population which reached 25.64% except Athens and Thessaloniki. In addition, at that time, Greece showed significant outward migration trends and the C1 and C2 prefectures, coastal and inland, recorded significant population losses.

A longitudinal analysis at the prefectural level shows that over all the decades, the increase in the population of the coastal prefectures is much higher than that of the inland. This increase is linked both to tourist areas such as Dodecanese and Heraklion, but also to coastal areas of industrial importance such as Achaia (Patra), Magnesia (Volos), Evia (Chalkida) and Kavala.

Another driver is the secondary houses factor that is linked mainly with the prefectures of Halkidiki and Korinthos. Both prefectures show an increase in the population during the 80s and 90s which is associated with the increase in the standard of living of Greeks in economic terms, which allowed middle-income families to afford a secondary house. Although this does not directly lead to an increase in population, the increase in economic activity does lead to a relative increase in population, even if it is not as important as urban sprawl.

The urban share of the “coastal prefectures” in the population is constantly increasing. Only, during the decade of the 1960s, the prefectures of the northeast Aegean lost a significant part of their inhabitants, which is linked to the general population losses. During the 1970s, the island/tourist prefectures showed an increase in their urban population. Prefectures in the northeast of the Aegean continue to decline, as do the prefectures in western Greece. Prefectures next to Athens and Thessaloniki show an increase in their urban population.

During the ‘80s, we observe a change in favor of coastal prefectures. The island prefectures of “Rethymno” and “Kerkyra”, but especially the mainland prefectures such as “Preveza”, “Korinthos” and “Halkidiki” are significantly increasing the rate of their urban population. Three prefectures of Peloponnesus also present a dynamic trend of urbanization, whereas the prefectures of “Heraklio” and “Dodecanese” maintain, with a slightly smaller percentage, their upscaling urbanization trends.

III.3. Spatial planning in Greek coastal areas

This section is addressing the issue of spatial planning in Greece to provide some insights concerning the evolution of the population and littoralization.

Spatial planning tries to solve several important problems in coastal areas. The Ministry of Environment, Energy and Climate Change has identified as the most significant pressures in coastal areas the following:

- Illegal building activity,
- Uncontrolled tourist development without respecting the “carrying capacity” of the territories,
- Low covering rate of the land use plans outside urban areas,
- Demarcation of the privately owned land (small size lots),
- Absence of an effective monitoring mechanism for the land use scheme (codification and classification of land use) – absence of an organized cadaster.

While Greece is characterized by a significant coastline, spatial planning efforts have not been successful in many aspects. A study of the history of spatial planning in Greece shows that the laws for coastal areas have reflected the course of spatial planning in general, moving from small to large-scale regulation. A clear picture of the Greek legislation covering the coastal areas is provided by Beriatos and Papageorgiou in the following table, where it can be clearly seen that most of the laws and/or presidential decrees have never been fully implemented.



Figure 5. Greece’s coastal zone (grey areas - 10 km) (Kotzamanis *et al.* 2008)

Date	Type and content of institutional regulation	Comments
1940	Compulsory Law 2344/1940 “On the Sea Shore (foreshore and backshore) ¹³ ”	
1983	Law 1337/83 Articles 23 & 24 “On the protection of coasts and coastal roads”	Never Implemented
1984	Presidential Decree 236/84 “On enclosing coastal land”	Never Implemented
2001	Law 2971/01 “On the Sea Shore (foreshore, backshore etc.)”	
2010	National Guidelines for the Spatial Planning and Sustainable Development of the Coastal Zone - Ministerial Decision	

Figure 6. Core legislation relating to the Greek coastal areas (Beriatos and Papageorgiou, 2010)

That said, during the 1990s, some changes were observed. The focus of spatial planning moved towards regulating the coastal zone in general taking into consideration Integrated Coastal Zone Management guidelines. The efforts tried to address conflicts between different land uses and free access to the sea (Beriatos and Papageorgiou, 2010). Alexandra Mexa (2004) notes that “some opportunities for strengthening “ICZM” may arise from the adoption of the new Mediterranean Protocol on “ICZM” and provide a provisional picture of the Greek coastal planning system. The need to ‘change’ national legislation within the broad framework of EU planning has already emerged.

This Framework is based on a three-way classification of the coastal area into ‘critical’, ‘dynamic’ and other ‘transitional’ zones, all of which have a terrestrial as well as a marine section and are subject to different provisions concerning permissible construction and land uses. Beriatos and Papageorgiou, however, criticize it because it ultimately “fails to resolve the substantial issues relating to the degree of protection it provides to the coastal environment” (concerning for example its maintenance of a withdrawal of 50 m from the shore for constructions, instead of the 100 m zone applied in other countries; also fails to prohibit roads parallel to the coast) (Beriatos and Papageorgiou, 2010).

IV. The impact of the tourism on urbanization in Greece

In the following chapter, we will briefly discuss some case studies that encapsulate the impact of tourism on urbanization in Greece. The case studies focus on two of the Cyclades Islands in the Aegean, the Ionian Islands west of Greece, and the case of the gulf of Corinthiakos in mainland Greece. These case studies are representative of the effects that tourism has on Urbanization in Greece.

IV.1. Urbanization tourism and other land uses: The case of Sifnos

The island of Sifnos is in the south-west of the Cyclades Island complex. Sifnos was selected because:

- It is a typical example of small Mediterranean islands in terms of history of land use, environmental conditions, topography, and vegetation.
- The island is in the EU Natura 2,000 network (Zerefos et al, 2011).

Sifnos is a small rocky island with an extent of 81.1 km² and an upper elevation of 6.81 m, with steep slopes and relatively few flat areas. In addition, the dominant land uses have been mining, logging, agriculture, and tourism.

The island of Sifnos has been labeled as a Special Beauty Landscape, while the central-west area of Sifnos has been designated as a Natura 2000 site (code GR4220008) because of the presence of important *J. phoenicia maquis* vegetation.

The names of some important locations are also provided. Apollonia is the capital of Sifnos, Kamares is the main port of the island and Vathy, Platys Gialos, Chrysopigi, Faros and Cherronisos are the sandy beaches accessible to tourists (Tzanopoulos and Vogiatzakis, 2011).

At the beginning of the 80s, the significant growth of the island of Sifnos was observed which is linked to the growth of the tourist industry, resulting in massive urbanization and construction of new roads (Tzanopoulos, 2002).

The decade of '90s was the peak period of tourism development in Sifnos, at that time two important infrastructures for vehicles took place, connecting the capital of Sifnos (Apollonia) with the towns of Vathy and Cherronisos

At a time when the agricultural sector was declining, the tourism industry was thriving, changing the economy and character of the island. Coccossis and Constantoglou (2005) reported a rapid development of tourism on Sifnos between 1991 and 2001 containing a boom in the number of leisure residences, and other tourist establishments. Data on the number of arrivals to the port of Sifnos (Fig. 6) displays the same increased pattern. The arrival of tourists takes place during the summer months (July and August), which is common with the other small Greek islands.

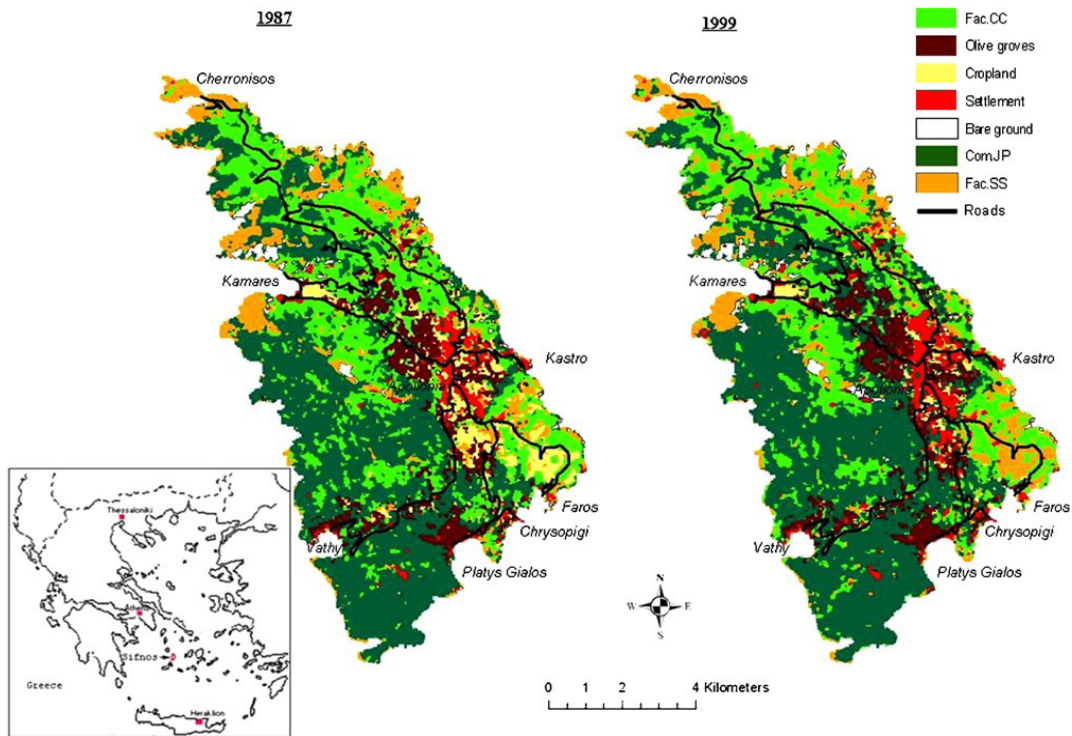


Figure 7. Location of Sifnos in Greece and land cover maps generated in 1987 and 1999

Year	No. of people
1995	79,331
1996	68,131
1997	80,959
1998	96,252
1999	101,064
2000	106,118
2001	110,667

Figure 8. The Number of arrivals (people disembarking) at the ports of Sifnos over the period 1995 – 2001 (Tzanopoulos and Vogiatzakis, 2011)

The tourism development has contributed to altering the sources of income for the permanent inhabitants, as well as the investment prospects for immigrants, which have reversed the depopulation trend observed in Sifnos over the past century.

According to the national census, between 1981 and 1991, the inhabitants of Sifnos increased from 2087 to 1960, although tourism increased, the number of inhabitants eventually increased by 25% in 2001. In addition to tourism development, the traditional manufacturing of ceramics started again.

Changes in the economy of the island of Sifnos have altered the pattern of land-use. In 1987 agricultural areas were spread all over the island, on the other hand, in 1999, not only had decreased by 62% but is now limited to very few areas, mainly close urban areas.

From 1991 to 2001 the inhabited area increased to 35%. This development has been spatially restricted near dominant villages or along the island's coastline and sandy beaches. The growth of the inhabitants' area is the result of either the expansion of the permanent inhabitants (urbanization) or the building of second/holiday homes and tourist establishments.

IV.2. Urbanization, tourism, and other land use: The case of Corinthiakos Gulf

The Corinthian Gulf is a deep and narrow inlet between the Ionian and the Aegean Seas, separating continental Greece from the Peloponnese. The Gulf extends from the strait of Rio - Antirrio (to the west), up to the gulf of Alkyonides in the east. The expanse of the Corinthian Gulf is 130 km, and its width extends from 5 to 30 km. Its max depth is 935 meters. From a geological perspective, the Corinthian Gulf is a submarine sedimentary basin and is part of the Corinthian tectonic fault. Specifically, it is the northernmost and currently the most active part of the moat. With a total area of approximately 2,400 km² out of a total of 4,100 km² occupied by the Corinthian moat, the Gulf continues to dilate and plunge.

Because of its affluent biodiversity and remarkable ecosystems and habitats, in 2016, the Corinthian Gulf was nominated by the Hellenic Ministry to be part of the Natura 2000 network.

The coastline of the Corinthian Gulf has been inhabited since the Neolithic era. Since ancient times, the Gulf has served as a navigation route. Today, the Gulf of Corinth is a clear and resourceful marine and coastal area, which hosts some human activities (inland and offshore). It is also an area where not only humans live permanently, but it is also a tourist area, with a significant number of holidaymakers.

Due to the geomorphology of the inner parts of the coastal region, the southern coasts (Peloponnese) are more attractive than the northern coasts of the Gulf of Corinth. The main human activities on the northern coast are agriculture, industry, mining, and aquaculture. On the north side of the gulf, urbanized areas are not common.

On the other hand, on the coasts of the Peloponnese Region, urban growth is very extensive; it is the result of the morphology (sandy beaches). Along the coastline are mainly leisure residences / second homes. The fact that the southeast parts of the Gulf are closer to Athens contributes to this effect.

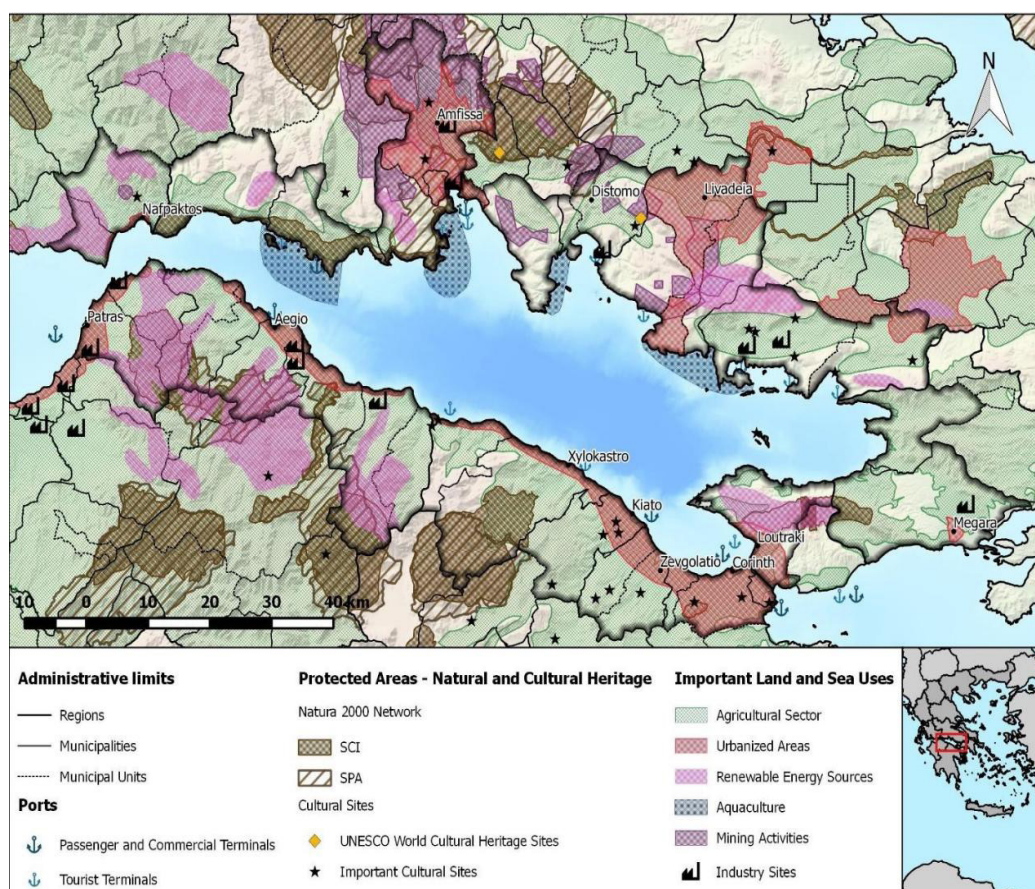


Figure 9. Important land and sea use and infrastructure in the case study area (Edited by the authors: synthesis of the four Regional Spatial Plans)

The southern coastal zone of the Corinthian Gulf, as it is showed in Figure 5 is an urbanized area. The growing human activities in the Corinthian coastal area experience high pressure on the marine habitat, but the main problem is that there is no organization and spatial planning of marine ecosystems in this region.

IV.3. Urbanization, tourism: The Case of Mykonos Island

Mykonos is one of the most famous holiday destinations in Europe. It was a poor fishing island, and the local activities were fishery and agriculture and ship construction.

In the early '1950s, the local economy changed, and the tourist industry came to the front.

The number of tourists has increased from 5,150 arrivals (at hotels) in 1965 to 60 000 in 1995. In 2015 1 million tourists were expected and more than 4,000 transfer visitors per day, who use the island as an intermediate stop on ferry routes or as a day trip destination. In the '60s only mini resorts existed, but due to tourism growth touristic establishments have expanded to more than a quarter of the island area between 1971 and 1991.

The habitants of the island have also increased in the last decades; they doubled between 1961 and 1991 from 3,700 to around 8,500, and now stand above 10,000 people. This development was followed by the growth of the infrastructure and investments that have increased the economy of the island.

Mykonos is a characteristic example of urban sprawl spatially distant from the urban area related to tourism. Till 1970 Mykonos had a tight spatial organization near the capital city and the harbor, which is commonly observed in several Mediterranean coastal towns.

Nevertheless, the island's land use has changed a lot due to urbanization. The growth in the number of buildings in suburban areas along the coastal edge has made the landscape poor and has implications for environmental degradation. The natural water recourses in Mykonos are insufficient; the dependence on tourism has provoked the development of new water management schemes, by making infrastructures such as dams. The new public investments also relate to the creation of new strategic infrastructures such as the expansion of the port and the airport.

IV.4. Urbanization and tourism: The case of the Ionian Complex

The islands of the Ionian Sea are found in western Greece. Kefalonia and Ithaca cover an area of 786,58 km², Corfu and Paxoi cover an area of 585,30 km², Zakynthos 405,55 km² and Lefkada 359 km². The Ionian Islands are characterized by dense natural vegetation. The human impact on these islands is intense seasonal tourism.

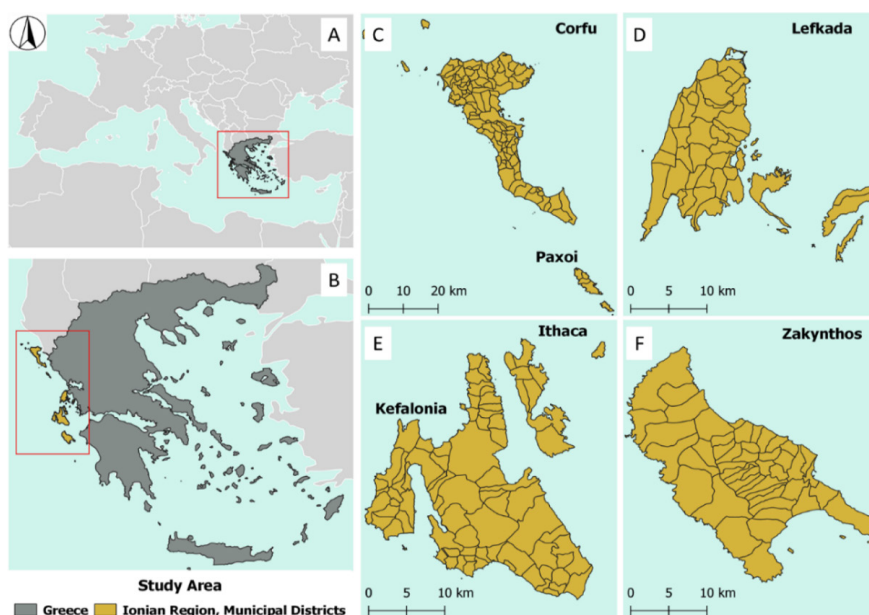


Figure 10. Ionian Islands in (A) the Mediterranean and (B) Greece and (C-F) each island complex (Kefalas *et al.* 2019)

Factors that have significant impacts on land use changes, especially in the tourist areas of the Ionian Islands, are the development of road networks, hotels, and holiday resorts. Additionally, to the herdsman above, the number of the population and employees increased for the census years 1990 and 2011 at the municipal level.

A study by Kefalas *et al.* (2019) examined the impact of Urbanization on several variables. Based on these results tourism development and the growth of tourist establishments showed an important positive contribution with fire frequency, as well as parameters connected to the urbanization on all but one island.

As in other cases, while there is an increase in settlements in the islands, this increase does follow the population trends. This discrepancy is due to new houses that are used as secondary houses. Therefore, urbanization and urban sprawl are connected to seasonal dwellers - vacationers – a primary effect of internal tourism.

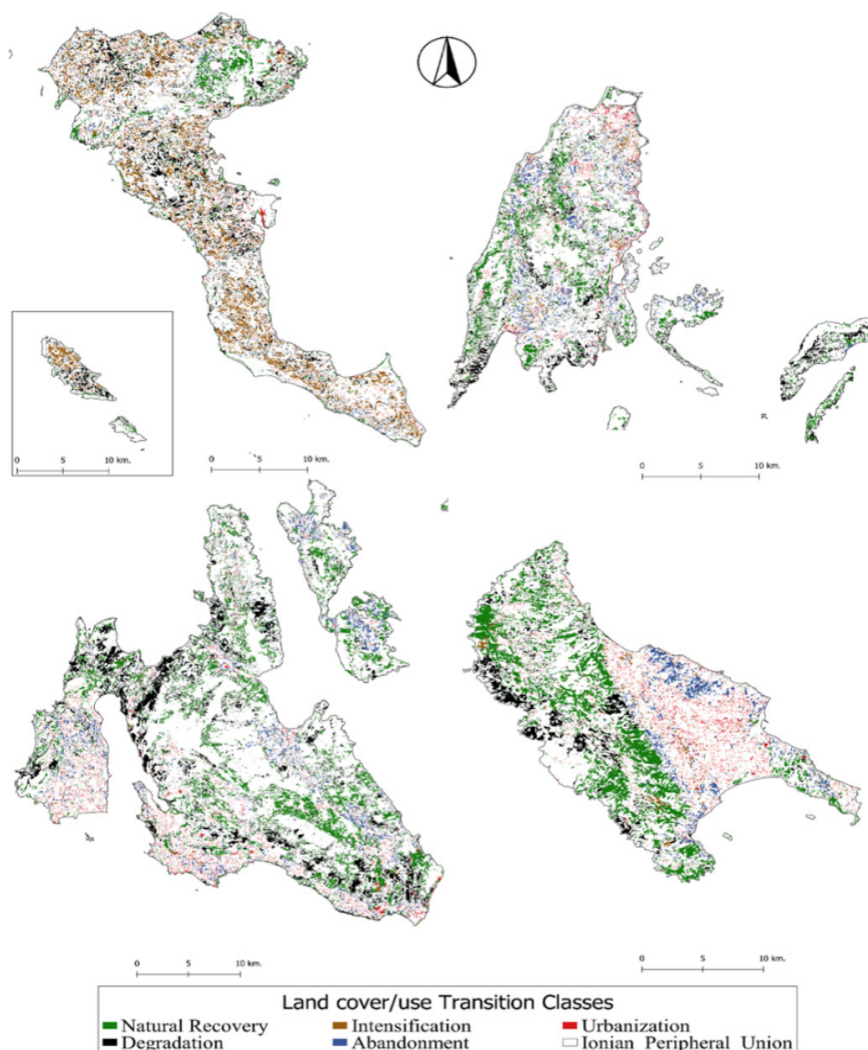


Figure 11. Land use on the four island complexes (Kefalas *et al.* 2019)

V. Urbanization parameters

A set of parameters has been developed within the frame of the Co-Evolve4BG project, to provide an overview of the trend of evolution of littoralization and urbanization coastal zones at national and Mediterranean scales. This set is composed of 8 parameters as presented in Table 1. Data relevant to these parameters were collected at both national and regional scales.

Table 1. Littoralization and Urbanization parameters

Parameters	Description
Urban Population in 2009	Number of people living in urban areas in 2009
Urban Population in 2019	Number of people living in urban areas in 2019
Urbanization rate of the last 10 years	Identify the increase/decrease of the urban population proportion over time
Urban Area in 2009	Area of agglomerations in 2009
Urban Area in 2019	Area of agglomerations in 2019
Urban growth of the last 10 years	Identify the increase/decrease of the urban area over time
Total Area in 2019	Total area of the region in 2019
Urbanization of the last 10 years	Identify the increase/decrease of urbanization over time

VI. Conclusions

The geographical location of the cities plays an important role in trade, tourism, industry, and growth. The areas that make up Greece today have traditionally relied on the opportunities offered by the coast like most of the Mediterranean. Since the first civilizations, cities have been mostly located by the sea, as well as most of the population. These trends have not changed in recent years, but other economic, demographic, and social developments have influenced the spatial organization trajectory of coastal areas.

A turning point for the evolution of the Greek cities in general and the coastal cities was the aftermath of WWII and the Civil War. The wars left the rural areas devastated and in combination with other social and economic drivers have led to unprecedented urbanization of the Greek population. While the biggest increase was in Athens and Thessaloniki - the two main (coastal) metropolises - internal immigration also increased the population of other cities, mainly in coastal cities.

The above flows created the canvas of the big urban centers in Greece, with four out of the five biggest cities being located on the coast, namely Athens, Thessaloniki, Patras, Heraklio and Larissa (the only non-coastal one).

At the same time, another important trend has led to urbanization and the urban sprawl of coastal areas, tourism. Even since 1960 parts of Greece have been accepting a significant number of tourists, while gradually tourism started to be considered the “heavy industry” of Greece. The pathways that have led to urban sprawl due to tourism are three.

The first is related to domestic tourism. between 1980 and 2010, the middle class was able to afford a second home which created pressure on the coastal areas close to the two major cities. The case of Corinthiakos gulf is presented as characteristic of the urban sprawl due to secondary houses. Although there is no study presented here, this is also the case for the Regional Unit of Halkidiki near Thessaloniki.

The second pathway is linked with (mainly) external tourism and the development of accommodation establishments of different kinds. This is the case for most typical tourist destinations like Crete, Rhodes, Corfu, and the Cyclades islands. The other three case studies presented here illustrate this path.

Finally, the economic development that internal and external tourism has brought, has led to the increase of the permanent population in some of the tourist areas. This increase in population has resulted in the expansion of typical urban areas.

VII. References

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