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Cooperating across borders in the Mediterranean

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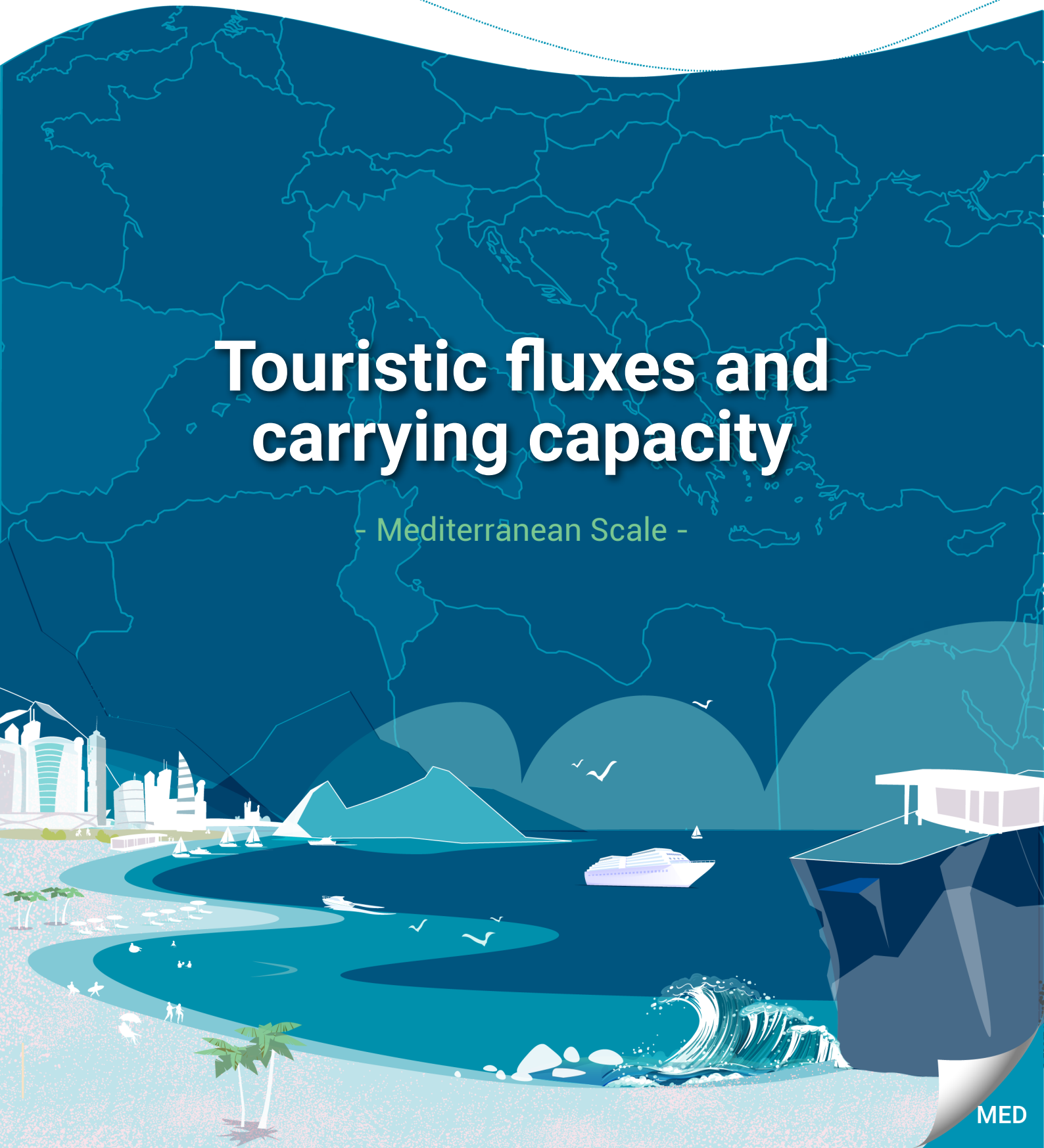
Co-Evolve4BG

Touristic fluxes and carrying capacity

- Mediterranean Scale -



MED

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OVERVIEW

The present document was produced in the framework of **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 Program (Grant Agreement A_B.4.4_0075).

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Abstract

The Mediterranean region has developed a unique set of tourism activities related to the sea, sports, health, nature, business, cruises and culture.

The sector represents a stable source of employment (11% employment) and economic growth (11% GDP of the region).

However, the economic growth brings impacts with the development of tourism, as it often happens to compromise environmental integrity and social equity.

Dependence on mass beach tourism (sea-sand-sun), governance deficiencies, degradation of cultural heritage, environmental pollution, resource depletion, contribution to climate change and vulnerability to its influence, political insecurity, social instability, flight of human and economic capital ... all these factors are threats to sustainable development of the Mediterranean maritime economy in general, and specifically tourism.

I. Introduction

Tourism is one of the most important economic activities of all Mediterranean countries, with Spain, Greece and Italy being among the top five in the world in terms of tourist arrivals, as well as Tunisia being among the best destinations in the central south of the Mediterranean basin with Lebanon in the east (Ozcan, C. (2016)).

The Mediterranean Sea is the world's leading tourist destination, with one in three tourists choosing to visit it. It was in the 1960s that tourism in the Mediterranean experienced a considerable boom, thanks to the simultaneous emergence of several factors.

Mediterranean tourism has long been considered a tourism of sun, sand and sea, and the Mediterranean climate remains a major factor in attracting tourists from around the world.

Despite the recent expansion of the tourist area to the south, tourism is more developed in the northern Mediterranean. Unstable political situation and lack of infrastructures have long been the main reasons for this disparity In addition, the statistics on tourist flows provided by the World Tourism Organization or Eurostat are collected at the national level and do not distinguish between regions (e.g destinations located on the Mediterranean coast and those located on the "Atlantic"), when it is said that the Mediterranean concentrates 30% of global tourist arrivals, it is considered the flow of tourists to the whole Mediterranean countries.

II.
Overview of the study area

II. Overview of the study area

II.1. Geographical location

The Mediterranean Sea is an intercontinental sea almost completely closed, of coordinates 37°N, 18°E, bounded by the coasts of southern Europe, North Africa and Western Asia, the Strait of Gibraltar, the Dardanelles in the west and the Suez Canal in the east. It covers an area of about 2.5 million square kilometers.

II.2. Climate

The Mediterranean climate is part of the so-called temperate climate group. Its main characteristic is that the subtropical anticyclone extends towards the poles in summer (thus hot and dry summers) and disappears in autumn and winter, allowing extratropical disturbances or polar air from the western Atlantic to flow into its northeast. Thus, the average characteristics of the different Mediterranean climates are as follows:

- A rhythm with four contrasting seasons, hot and dry summers, a distinct though mild winter (the average monthly temperature never falls below 0°C), a sometimes very rainy spring and the autumn, the autumn has obvious advantages.
- Therefore, the Mediterranean climate type has the peculiarity of the coincidence between the annual rainfall minimum and the thermal maximum, which is clearly reflected on the nomogram.
- In other words, it is the only climate with the hottest season and the least precipitation. According to the method proposed by 'H. Gaussen', the summer droughts correspond to periods when the average precipitation is less than twice the average temperature (P<2T).

Tourism is a vital sector for the Mediterranean economy and is a very important source of jobs and foreign exchange for all the States of the Mediterranean coast.

II.3. Hydrographic network

From 2003 to 2008, six social science and humanities research teams conducted the exchange project "Social and Institutional Innovations in Irrigation Management in the Mediterranean". The project was implemented in collaboration with irrigation development agencies and agricultural water users' associations from 11 Mediterranean regions. The partners come from six countries: Spain, Egypt, France, Italy, Lebanon and Morocco. They have continued to collaborate after this project.

This chapter deals with a synthesis of the components of the water and irrigation field.

A comparison of eleven Mediterranean regions shows great singularity. It also specifies that the demand units whose limits are inherited from a long hydraulic history must be considered. Faced with the watershed management agency, it is necessary to propose an agency for the management of overflowing basins, to occupy the network of canal and water conservation projects, and to achieve the sharing of resources.

II.4. Geology

The Mediterranean Sea is the nearest ocean, the last of the Quaternary, but formed in the Miocene. In its present structure, it consists of deep basins juxtaposed, well separated from each other.

The first is filled with thick Tertiary sediments that mask the bottom. The latter has not yet been reached by underwater drilling. However, geophysical data suggest a thinned crust and high seismic velocities, suggesting that the bottom is oceanic in nature. They would then represent the result of recent oceanization associated with extreme inflation and low submergence of the continental margins as shown by the tectonic structure in Figure 1.

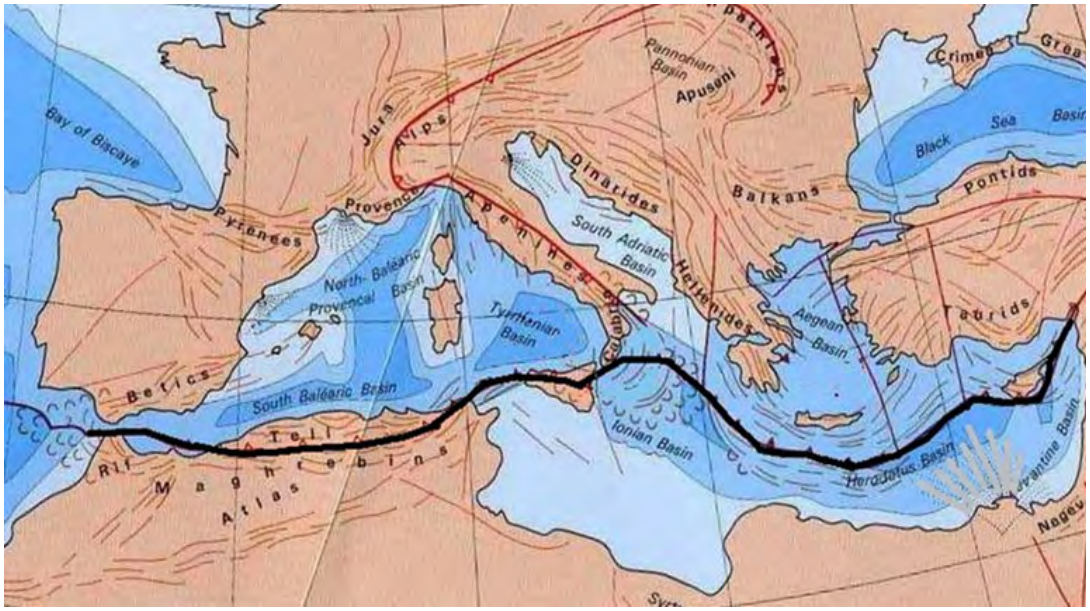


Figure 1. Tectonic structure of the Mediterranean Debelmas, J. (1980).

The other deep-water basins are the Ionian and Levantine basins, but the latter is fractured by faults and partially overlain by the submarine Nile Delta. Both are outside the Eocene range, so may predate them. It is generally thought to be a remnant of the early Tethys Ocean that emerged between the European and African tectonic plates as interpreted by these faults in Figure 2.

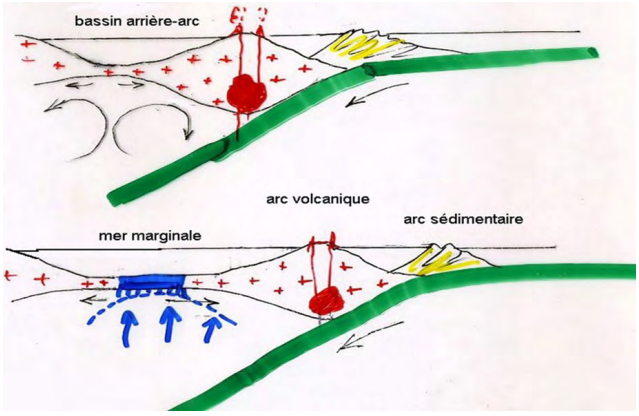


Figure 2. Fault and magma chamber. Debelmas, J. (1980).

II.5. Swells

As the waves recede from the sand, it returns to the sea, so bathers who are not paying attention will gradually be drawn into it until they can no longer return to the shore. Some may also fall and be swept away by the force of the swell.

As a result, a person can quickly find himself or herself dozens of meters from shore, caught in the current and unable to return. Children, the elderly and the infirm are particularly at risk.

Waves between 1.5 and 1.75 m (max more than 2 m) can make it dangerous to swim on shores more used to calmer waters, but when the waves start, it can be very dangerous, the Mediterranean is not always a “sea of oil” that presents no danger to its bathers and others.

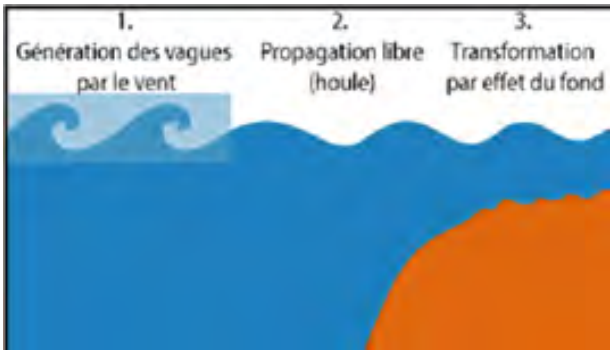


Figure 3. Creation of swells (www.nageur-sauveteur.com)

II.6. Erosion

Coastal erosion is a natural or artificial phenomenon that occurs in many places in the world. Different events can lead to a coastal retreat that local enrichment cannot compensate: slight rise of the ocean, phenomena of rebalancing of equilibrium, stabilization of mud, loss of dunes or vegetation in the banks (due to too aggressive cleaning), dams, the contribution of terrigenous sand has decreased.

This erosion is therefore controlled by many local factors (sediment balance and availability of sediments, hydrodynamic conditions, anthropic activities), but tourist flows play a very important role in erosion or accretion on the Mediterranean coast as shown in Figure 4 by an erosion of a dangerous case.

Figure 4. Cases of erosion on the coastline.

III.
Tourism

III.Tourism

The explanatory factors of the evolution of Mediterranean tourism can be summarized in socio-cultural, economic, political, technological and ecological.

The indicators in these studies are as follows:

- Growth in tourist arrivals (%).
- Growth of tourist establishments (%).
- Visitor expenditure in (Euro).
- Tourism by seasonality (Yes/No).
- Number of overnight stays per year.
- Average length of stay (%).
- Number of rooms (Beds).
- Number of hotels.
- Quantity of energy consumed by the tourist establishment in (KWh).
- Volume of water used by the tourist establishment in (103.m^3).

The five countries studied that are related to these factors and bordering the Mediterranean Sea are the following as shown in Figure 5 :

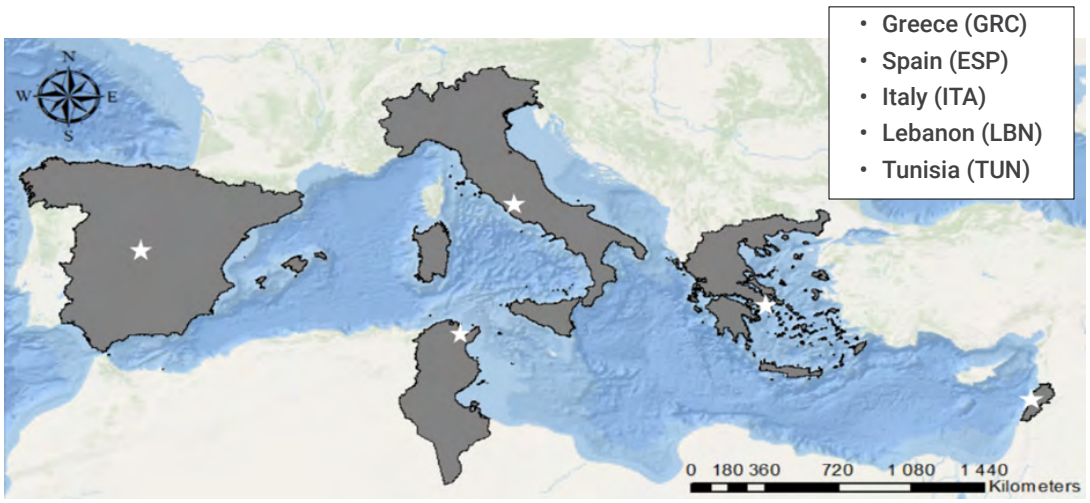


Figure 5. The five countries studied bordering the Mediterranean Sea.

III.1. Greece

Tourism is one of the most important productive sectors in many countries, including Greece, making a particular contribution to GDP, job creation and economic growth. The multidimensional nature of tourism and the increase in tourism "flows" have led to its continuous evolution into a dynamic and productive sector of the economy. Given the importance of tourism to economic development, this report briefly highlights the contribution of tourism to the Greek economy in 2019, while examining tourism flows and highlighting the countries' main tourism markets in the same year. Although since 1960 the tourist product "Sun and Sea" is still the main product of Greek tourism, due to the intense competition and seasonality of tourist flows, the central strategy for the development of the Greek tourism industry is focused on enriching this tourist product to create new alternatives with high added value, allowing the Greek tourism industry to strengthen its position in the highly competitive tourism market, mainly from Mediterranean countries. At the same time, since the results of tourism development are not always positive as they can have negative impacts, the calculation of the carrying capacity of a destination using indicators is a key tool that helps to formulate appropriate development policies. Conservation at the social, economic and ecological levels. An important factor in its assessment is the "life cycle" of the destination, as it determines the stage of development at which the region is.

This report summarizes the results of a literature review of the carrying capacity of thirteen regions of Greece, on the basis of which, with the exception of a few tourist areas, the marginal capacity is largely exceeded.

This figure 6 describes the distribution of tourist arrivals by their countries.

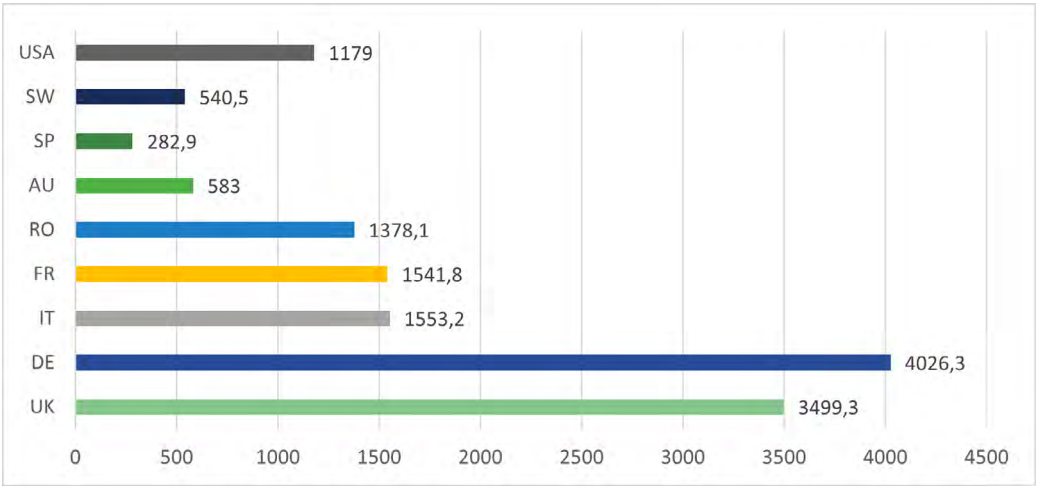


Figure 6. Distribution of arrivals by country of origin in Greece, 2019.

(https://news.gtp.gr/2019/08/22/etc-greece-russia-tourism-year-fails-to-hit-the-mark/).

III.2. Spain

A good climate, friendly people, rich cultural heritage, gastronomy and rich landscapes, Spain has all the ingredients to be the ideal tourist destination.

In 2018, Spain welcomed a record 82.8 million foreign tourists, making it the third most visited country in the world after France and the United States, according to the National Statistics Institute (INE).

A record of 89.856 billion euros was also reached in terms of turnover, this Table 1 shows the tourist flows and parameters of the capacity of reception.

Table 1. Hosting capacity parameter (www.ine.es)

Parameter	Variable	Description
Number of establishments 2014 and 2019	Number	Identify the number of tourism establishments in the coastal district/region
Growth of tourist establishments for last 5 years	%	Track the increase/decrease of tourism establishments over time.
Number of tourists per year 2014 and 2019	Number	Formula: [(NEstablishment_nf - NEstablishment_ni) / NEstablishment_ni] * 100
Growth of tourist arrivals for the last 5 years	%	Track the increase or decrease in visitor length of stay
Number of Hotels (2019)	Number	Identify the growth in tourist arrivals at tourist establishments [(TArrival(n+1) - TArrival(n)) / TArrival(n)] * 100
Number of rooms (Beds)	Number	Identify the number of hotels in the coastal district/ region
Number of nights per year (2019)	Number	Identify the number of beds available in the destination's tourism establishment
Average length of stay (2019)	Number	Track the increase or decrease in the number of overnight stays recorded in the tourist destination
Visitor expenditure	Dollar/ stay	Track the increase or decrease in the percentage of overnight stays in the tourism destination
Amount of energy used by the tourism establishment	Kwh	This is the total consumption expenditure made by a visitor during his or her stay at the destination
Volume of water used by the tourism establishment	m^3	Track the energy consumption of tourist establishments

Tourism is characterized by seasonality	Yes/No	Identify the volume of water used by tourism establishments

According to the World Tourism Organization, Spain ranks second in its UNWTO Tourism Highlights report, surpassed only by France as of 2018, ahead of countries like the United States and China.

For the sixth consecutive year, the number of visitors reached a record level, mainly from the United Kingdom, Germany and France.

One of Spain's main tourist attractions is its immense cultural heritage.

It is the third country in the world (after Italy and China) with the highest number of places designated as World Heritage Sites by UNESCO.

III.3. Italy

Italian coastal tourism began to develop in the 1950s, became very important after the 1970s, while before the 1960s it was mainly domestic tourism, followed by major developments on the international market.

In Italy, the 1960s were the years with the largest increase in Italian international tourist arrivals, but in the following decades the increase was also very significant, although the increase was about 13% (1967-1970/1972-73), +10.1% (1982-1986), +6.6% (1987-1991).

In general, the northern regions (Liguria, Tuscany, Friuli-Venezia Giulia, Emilia Romagna, Marche, Abruzzo) have developed seaside tourism, while the southern regions (Lazio, Campania, Puglia, Calabria, Sicily, Sardinia) with large developments were made in the 70s and 80s.

In the case of the Lazio region in the mid-1980s, tourism was still growing and therefore linked to urban development.

In Circeo National Park, estimates of housing development in the period between 1985 (first law) can be obtained from data on the "condono edilizio" law (legalization of illegal construction or expansion by landowners) and 1994 (law 2) about 3,500 new buildings or extensions were completed, only in two towns (Circeo NP, pers. com.)

Regarding spending on international tourism and international tourists, according to the Bank of Italy (www.bancaditalia.it), coastal tourism is the second type of spending after cultural cities.

In cultural cities, consumption increased from 2004 to 2017, reaching 41.9% of total

spending in Italy by international tourists (28.2% in 2004), but beach tourism was not far behind, accounting for 14.7% of total consumption (28.2% in 2004) 13.3) % in 2004).

III.4. Lebanon

Lebanon's strategic location on the eastern shore of the Mediterranean Sea, as well as its natural, cultural and unique landscapes make it a tourism leader in the region. In fact, the so-called "Switzerland of the Middle East" is the only country in the Arab world with four different seasons and snow-covered mountains for months in the west.

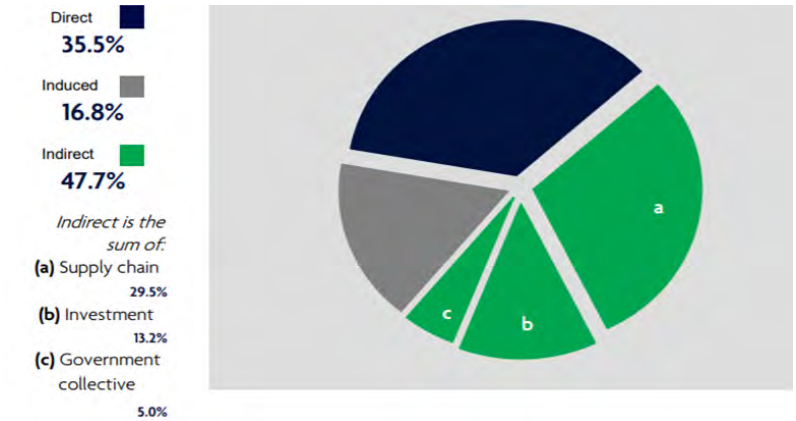
As such, it is a destination that encourages tourists to participate in its year-round activities and to stay in its hotels and resorts in two main seasons: skiing on the well-equipped slopes in winter and swimming and enjoying the sandy beaches in summer.

Tourism in Lebanon allows visitors to tour the national heritage, archaeological sites and museums, enjoy high-caliber Lebanese restaurants and taste the best of the country.

Finally, it invites visitors to enjoy commercial and financial services through luxury shopping and exhibitions. Currently, Lebanon has several large exhibition centers, most of which are located in hotels.

The provision of large exhibition centers in hotels, on the waterfront (Beirut) and Tripoli (Rachid Karami), and in the free zone, offers a significant opportunity for the development of business and convention centers to meet the growing demand for world-class conventions.

Therefore, tourism is one of the main economic sectors in Lebanon, representing a major pillar and source of income and employment. In fact, the direct contribution of travel and tourism was valued at US$3.8 billion in 2018, representing 7% of Lebanon's GDP (www.unwto.org/).



The contribution of domestic tourists to direct travel and tourism GDP in 2017 compared to foreign tourist spending was 13.6% and 86.4%,

respectively figure 7.

Figure 7. Contribution of tourism to national GDP, 2017.

III.5. Tunisia

Tourism is a major phenomenon in contemporary society. In 2019global travel and tourism reached 1.461 billion. This figure is an increase of 3.8% compared to the previous year (2018).

According to the United Nations World Tourism Organization, this is the 10th consecutive year of growth.

One of the characteristics of tourism is that both developed economies (776 million tourists) and emerging economies (685 million tourists) benefit (www.unwto.org), with a small gap between the two.

Moreover, tourism is the leading economic sector in the world today and even e-commerce.

As such, it should have a bright future: even the most conservative projections predict extraordinary results over the next two decades.

Tourism activities are designed to exploit the landscape and cultural potential of a particular host country.

It has important socio-economic implications for such a territory. Therefore, travel and accommodation form the basis of tourism and related activities: transportation, accommodation, business and entertainment.

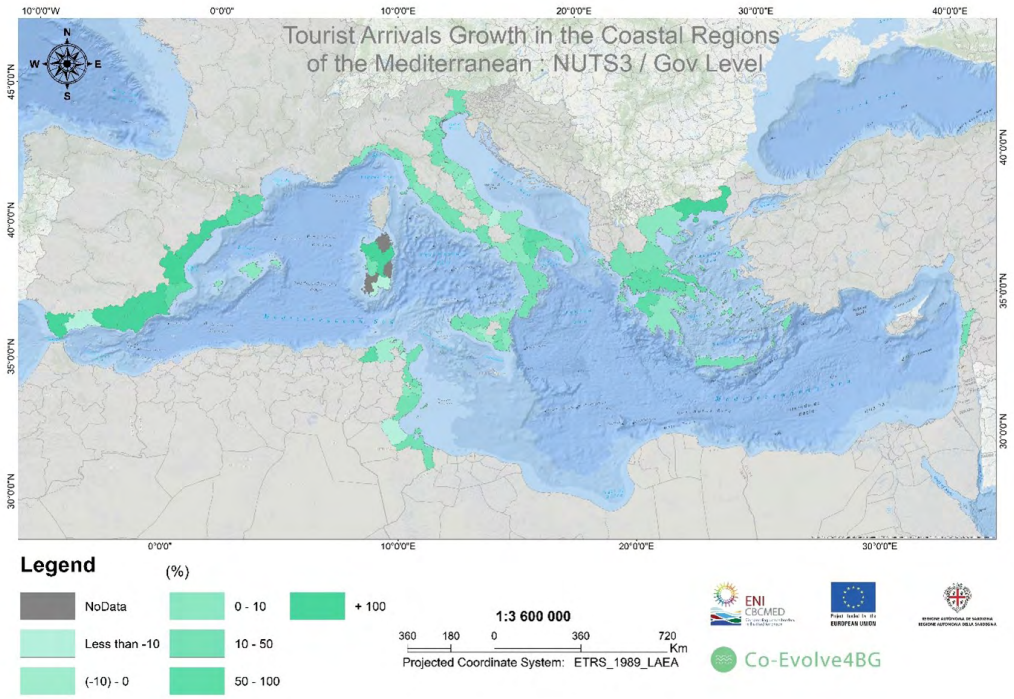
The following table 2 describes tourist arrivals by country in Tunisia.

Table 2. Global tourist arrivals by country (in thousands). geotourweb.com/new_page_34.htm.

Country	1994	1999	2019

IV.
Geospatial analysis of Tourist Flows

Egypte	2,356	4,489	13,600
Maroc	3,465	3,950	13
Tunisie	3,856	4,880	9,429
Turquie	6,033	6,800	45,100



For this purpose, the UNWTO, an international agency created in 1973 and specialized

in tourism research, defines a tourist as "any person who has been away from his or her usual residence for at least 24 hours (or one night) and for a period of more than 4 months for one of the following reasons: Pleasure (vacation and weekend stays),

well-being (e.g. spa treatment, thalassotherapy).

IV. Geospatial analysis of Tourist Flows

The excessive and exaggerated increase in the growth of tourists creates enough pressure on the host places to form a restriction of natural resources uses and a congestion of the means of transport and leisure, which also accelerates the difficulty of moving and meeting daily needs, especially for the inhabitants of coastal cities this factor denotes in both Figures 8 and 9.

Figure 8.. Map of the growth of tourist arrivals per years.

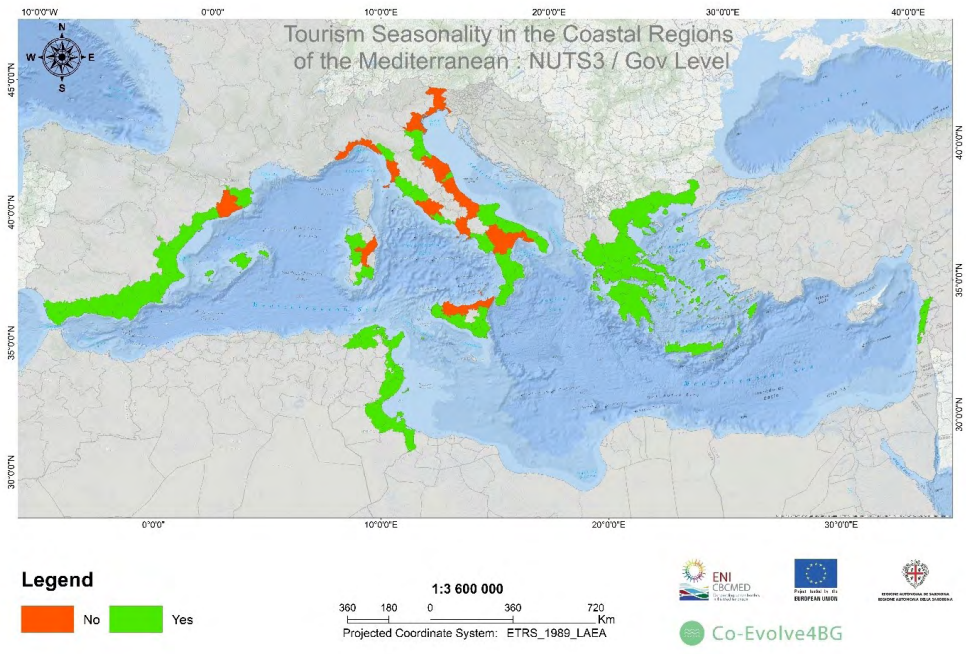
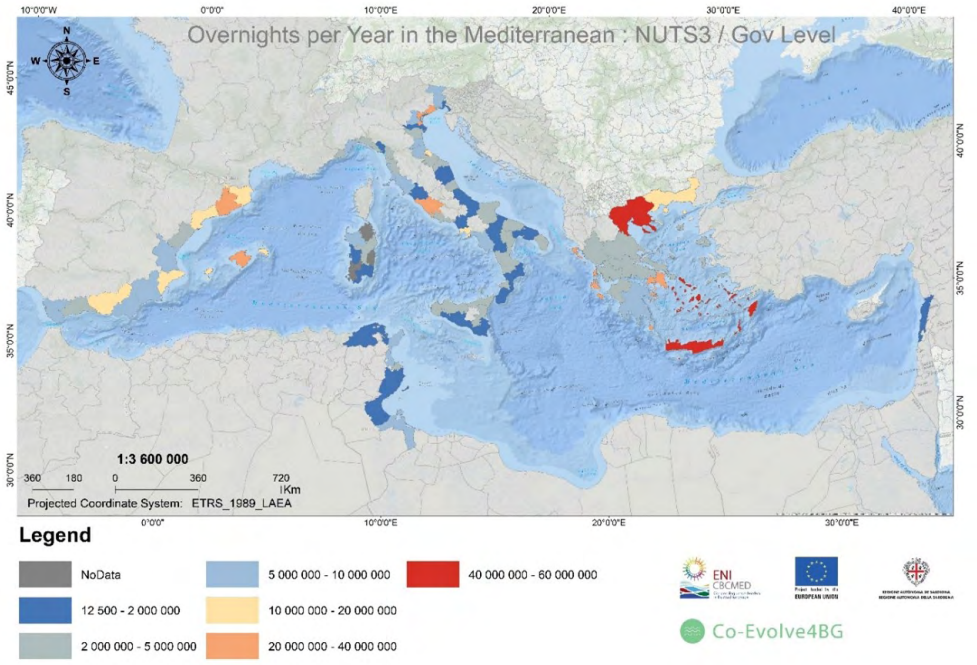


Figure 9. Graph of the growth of tourist arrivals per year.

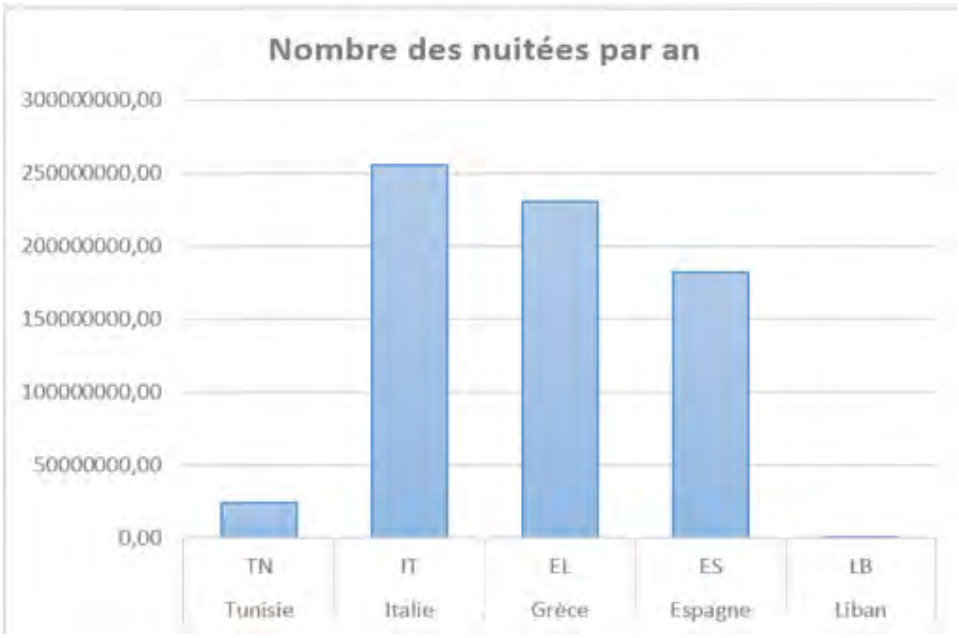
IV.1. Visitor Spending

It is the total consumption expenditure made by a visitor during his stay at the destination.

The spending of foreign currency by visitors in tourism development, accelerates the inclusion of hard currency and accelerates the financial and tourism development., which is beneficial for the economic engine and internal development of the country,



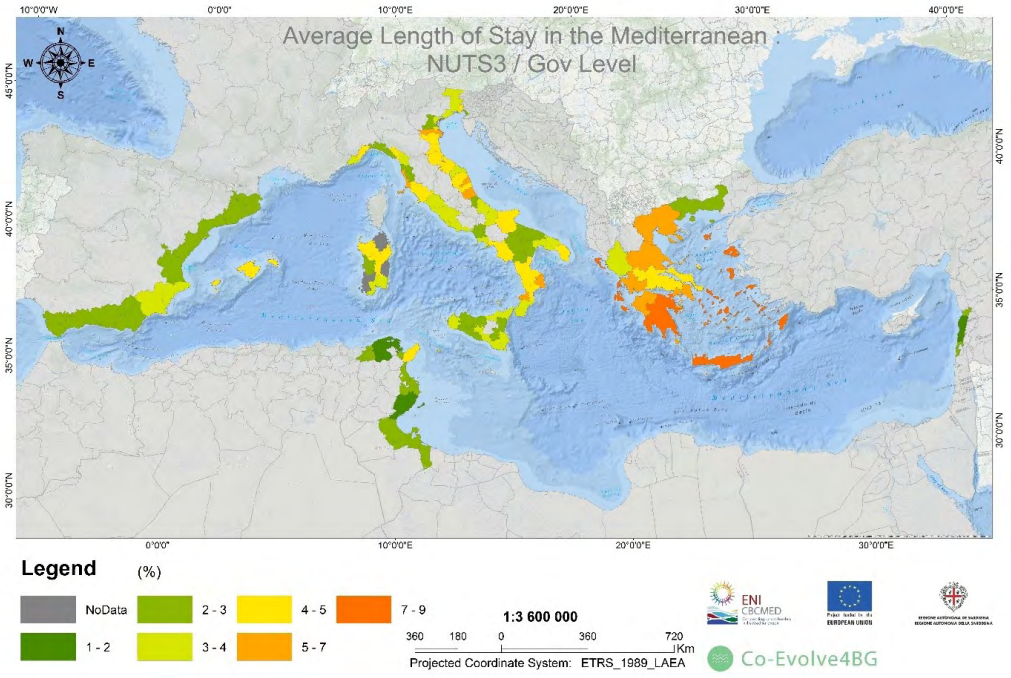
but at the same time it contributes to the development of inequality and creates an



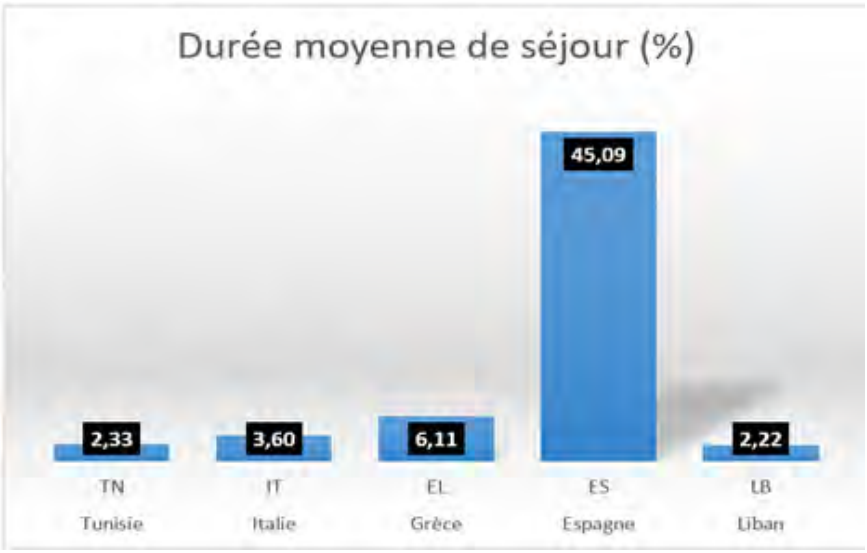
imbalance between the coastal areas and the interior regions are what tilts internal development to the coast, which ultimately leads to an imbalance in the economic

and social balance, both Figures 10 and 11 describe this statistic .

Figure 10. Map of tourism by seasonality.



IV.2. Number of nights per year



The number of overnight stays per year spent for the tourist, gives a clear indication of the sufficiency of the development of the tourist establishment or destination of

that region, and this can evaluate the success of the tourist season and the amount of hard currency paid often, which is beneficial for the development in the region or destination concerned, but if this criterion is exaggerated, it can create inequalities in development and inequalities in a negative way. Both Figures 11 and 12 describe this statistic.

Figure 11. Map of the number of nights per year.

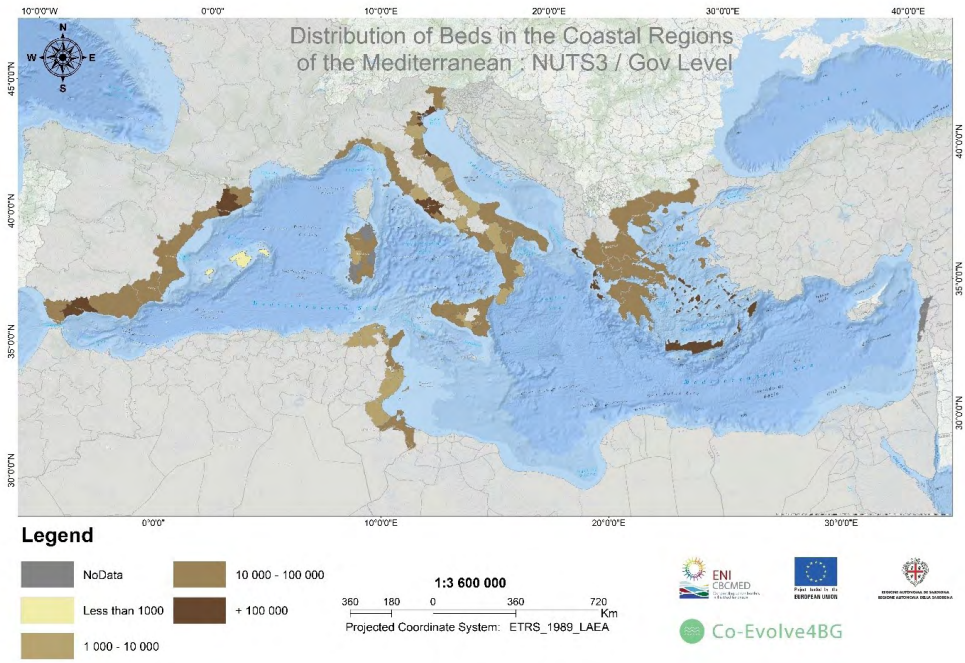
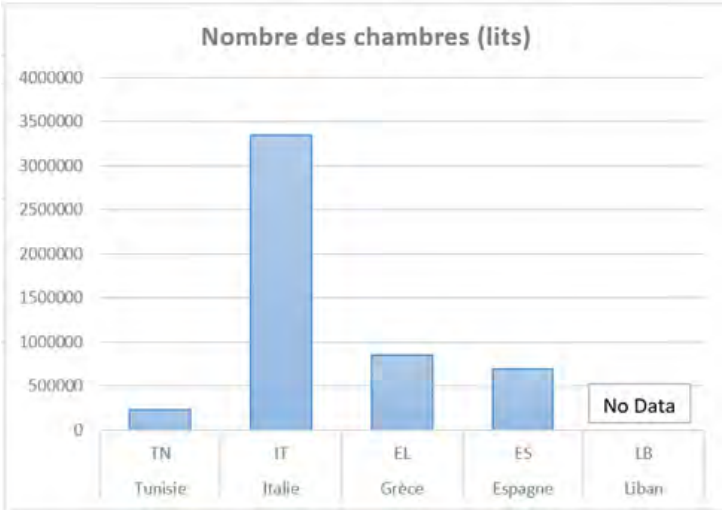


Figure 12. Graph of the number of nights per year.



IV.3. Average duration of stay

The following two figures show the average length of stay for the five countries

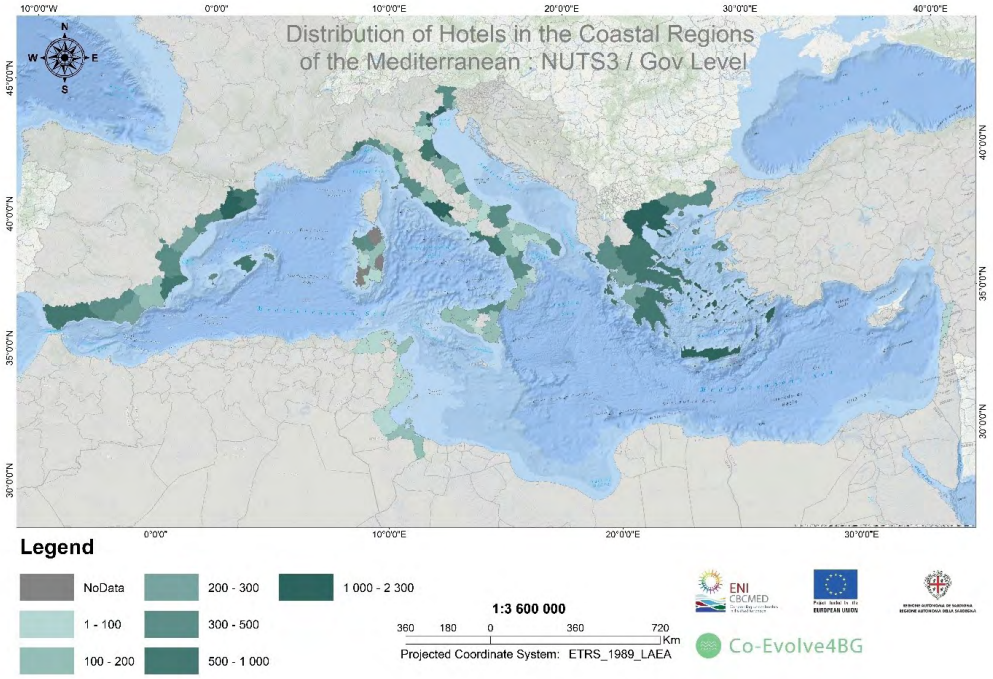
Figure 13. Map of the average duration of stay.

Figure 14. Graph the

average duration of stay.

IV.4. Number of rooms (Beds)

The increase in the number of hotels and rooms on the issue in an unplanned and random way accelerates the erosion of the coastline and the marked poverty of the sandy mass and the dangerous progression of the sea level, which creates looseness in the land mass and poses a permanent danger to all the facilities of other urbanisms.



Identify the number of beds available in the tourist establishment of the destination as described in the two Figures 15 and 16.

Figure 15. Map of the number of rooms (Beds).

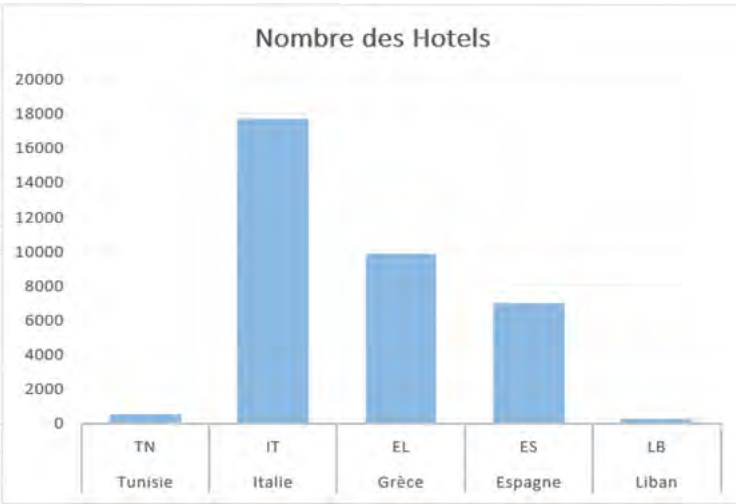
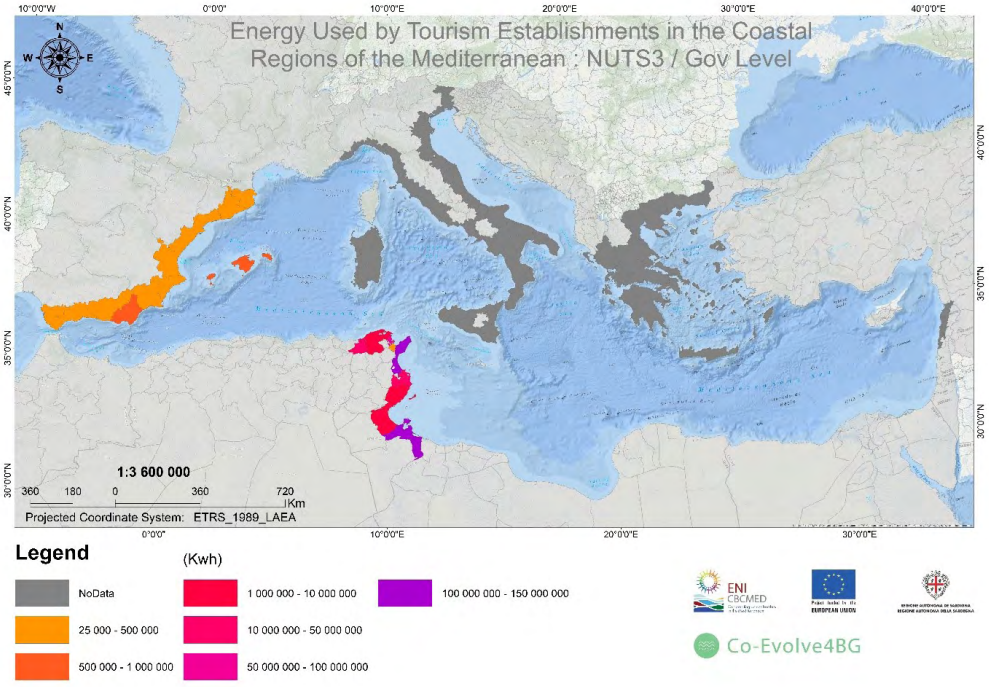
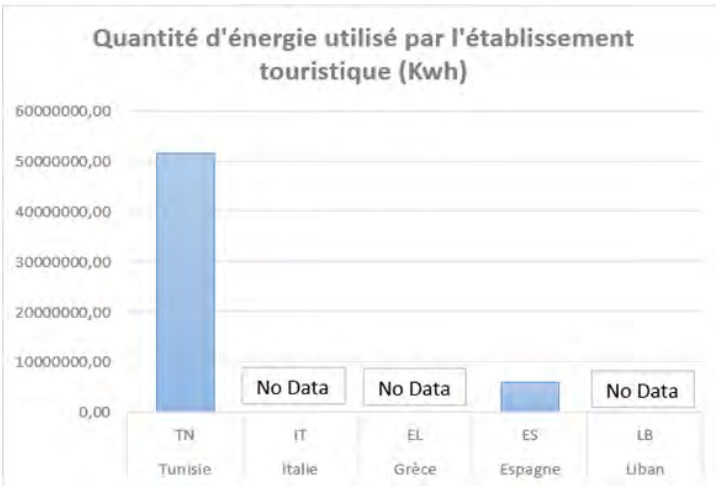


Figure 16. Graph of the number of rooms (Beds).

IV.5. Number of hotels

The increase in the number of hotels and rooms on the issue in an unplanned and random way accelerates the erosion of the coastline and the marked poverty of



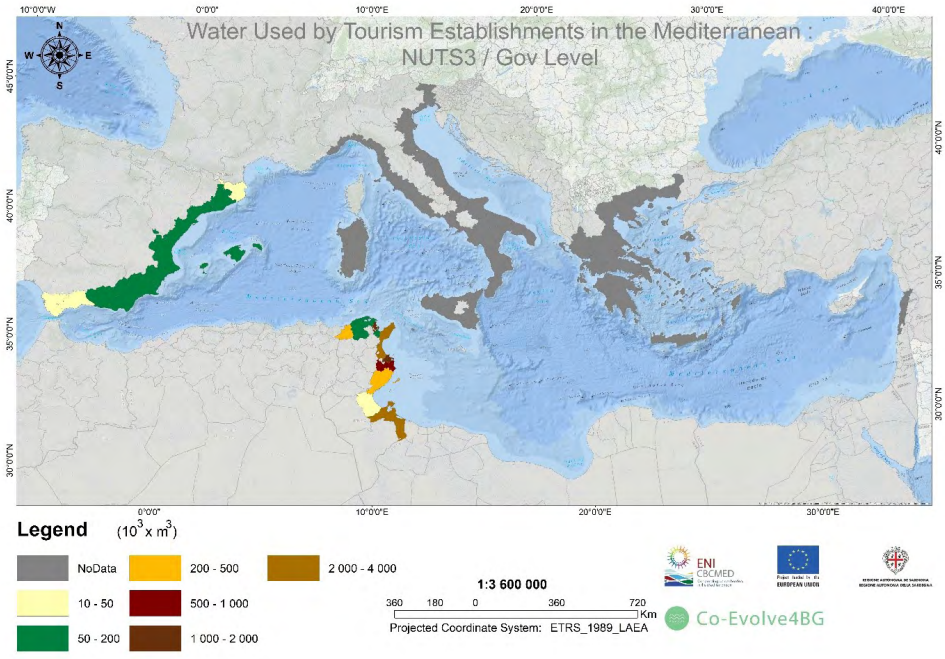


the sandy mass and the dangerous progression of the sea level, which creates looseness in the land mass and poses a permanent danger to all the facilities of other urbanisms.

Identify the number of hotels according to their classification in the coastal district/region as

described in the two Figures 17 and 18.

Figure 17. Map of the number of hotels.



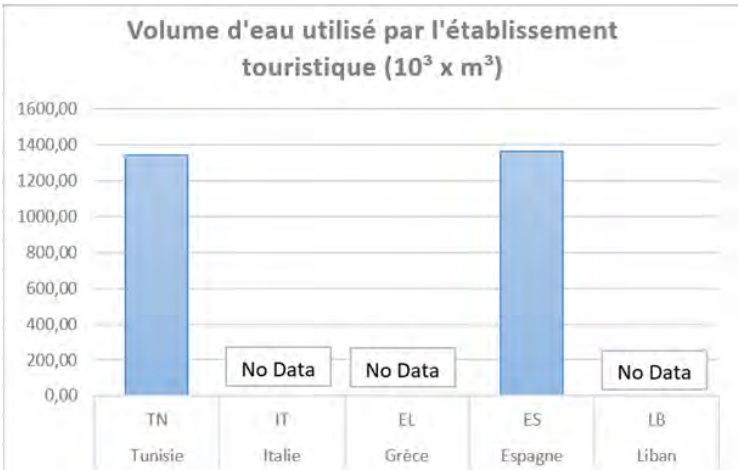


Figure 18. Graph of the number of hotels.

IV.6. Quantity of energy consumed by the tourist establishment

Energy is one of the most important sources

V.
Comparative presentation of the main issues in the countries

and raw natural resources that finance economic development in all countries, but this factor supports pollution in the world and also on the Mediterranean scale given the scarcity of this resource, tourist institutions create an increased burden on energy resources in the absence of a clear logistical program that reaches the consumer, making countries that do not achieve self-sufficiency difficult to difficulties in all areas, even non-tourist.

This value showing with the unit in (KWh) as denotes the two Figures 19 and 20.

Figure 19. Map of the amount of energy consumed by the tourist establishment.

Figure 20. Graph of the amount of energy consumed by the tourist establishment.

IV.7. Volume of water used by the tourist establishments

The unregulated and exaggerated consumption of water for tourist establishments for drinking and leisure purposes such as swimming pools and water games, and the increasing supply of electrical energy without recycling, lead to a poverty of fresh water, already threatened by the depletion of groundwater resources, which are a naturally scarce resource for the southern Mediterranean countries that suffer from a severe drought and dangerous to their water security

Identify the volume of water used by the tourist establishments. This value showing with the unit in 103 times cubic meter (103 m3) denotes by the two Figures 21 and 22.

Figure 21. Map of the volume of water used by the tourist establishment.

Figure 22. Graph of the volume of water used by the tourist establishment.

V.Comparative presentation of the main issues in the countries

The marine ecosystems of the Mediterranean: are under enormous pressure, these risks are not only related to the intrinsic value of ecosystems, but also to the loss of biodiversity and natural habitats, which play an important role in human health, living environment, food production and supply of natural resources for economic and social needs, development and belong to the riparians. The Mediterranean Sea is subject to anthropogenic disturbances, especially along the coastline, new potential or actual pressures on the open sea are emerging, and changes in environmental characteristics due to global change.

Coastal development (agriculture, industry) and urbanization and its associated sources of impact are the main threats.

450 million people live in the Mediterranean basin, 40% of whom live along the coast.

This significant population growth in the coastal zone has led to landscape degradation, soil erosion, increased marine litter, destruction and fragmentation of natural habitats and a worsening of the situation of endangered species.

Maritime transport: is another important economic activity in the region: it represents about 30% of international maritime commercial activity and 25% of maritime oil transport. The risks associated with accidental or deliberate contamination and the transport of exotic species are still poorly controlled.

Professional fishing: is another important activity in the Mediterranean region in terms of employment, income and food security.

Recreational fishing is an important sector in some regions. Its continued development is poorly controlled.

Years of uncontrolled growth of fishing effort in many Mediterranean countries have led to the decline of many fish stocks. According to the latest assessment of the General Fisheries Council for the Mediterranean (GFCM), nearly 90% of the fish stocks assessed are overexploited.

Climate change: the Mediterranean is also considered as one of the seas where the consequences of climate change will be most pronounced in the coming years; many areas are already affected by these effects, particularly in terms of coastal erosion.

V.1.Common problems

Coastal erosion, which affects about half of the Mediterranean coastline, is only one factor in this larger challenge, partly a natural phenomenon that can never be fully controlled. It is also a problem that affects the rest of the European coasts.

Coastal erosion: can and must be managed in a way that better aligns economic development with environmental protection.

This does not mean that in terms of human settlements, agriculture, freight transport, industry and coastal tourism, policy makers should consider themselves exempt from the responsibility to challenge certain environmentally damaging land use technologies, but also to challenge the mismanagement of waterways. through dams or reservoirs for flood control or irrigation purposes. Good management of coastal resources and landscapes with systematic evaluation of the quality of the project from an environmental point of view, real time monitoring of coasts and coastal areas, follow-up of implemented measures and restoration of some necessary sites.

Pollution: The Mediterranean Sea is the largest intercontinental sea, covering 2.9 million square kilometers and representing 0.8% of the world's waters. It is located between Europe, North Africa and Western Asia, as its name suggests, "in the middle of the land". Its location has become an aggravating factor in the concentration of plastic pollution.

These waters are renewed at a rate of about 90 years, while plastics sometimes take hundreds of years to disappear. Plastic debris breaks down under the influence of UV light, wind, salinity and wave movement. In the Mediterranean, the release of microplastics has become increasingly problematic as the concentration of microplastics reaches record levels: 1.25 million fragments per square kilometer.

"When we knew that 80% of marine litter came from the land, we really wanted to draw the public's attention and warn them against the use of plastic."

The association Participe Futur counts in its ranks sailors, teachers, scientists and volunteers, all eager to raise awareness of the marine environment, but according to the president of the association, "The biggest problem comes first from polymer manufacturers, and that's what we should act on. the source. Most of the plastics produced are not recyclable, so they end up in the sea. "

The starting point of several great civilizations, the Mediterranean Sea is one of the main reservoirs of marine and coastal biodiversity, and these waters are home to 10,000 to 12,000 marine species, 25% of which are endemic. Of these, 15 are listed as critically endangered by the IUCN.

V.2. Key issues and main findings

- The increase in construction of tourism and recreation facilities puts increased pressure on natural resources and landscapes, as the use of land to build hotels or other infrastructure and the use of construction materials can have direct impacts on renewable and non-renewable natural resources. Forests are often negatively impacted by tourism, in the form of deforestation for firewood collection or other land use.

- The impact of recreational activities can be attributed to the pressure of intensive tourism development or non-tourist recreational activities in urban and/or rural areas. Noise from jet skis, cars, buses, nightlife, and other activities is one of the major problems associated with recreational activities. Golf courses have long been associated with coastal areas. In many areas, these lands are an important part of the local economy, and many of them help protect valuable fragments of dune habitat from urbanization and agricultural control.

- Water Resources: Fresh water is one of the most unstable natural resources. Tourism typically over-exploits water resources for hotels, swimming pools, golf courses, and personal water use by tourists, which can lead to water shortages and pipe breaks, as well as large amounts of wastewater. In arid regions such as the Mediterranean, water shortages are critical. Due to the hot climate and the fact that tourists tend to use more water on vacation than at home, this can lead to 400/500 liters of water per person per day.

- Tourism pressure depletes soil resources, tourism development will increase the consumption of natural resources in areas where natural resources are already scarce, thus putting pressure on natural resources. Tourism has an impact on the quality of the environment, treatment and disposal of solid and/or liquid waste, especially during the peak tourist season, may be inadequate or non-existent. Consuming large quantities of water, not only for drinking but also for washing, laundry, pool maintenance and golf courses, can be a major problem in areas where freshwater resources are limited.

V.3. Sustainable tourism development

In the report “Tourism and the Environment in the Mediterranean: Challenges and Prospects”, the Blue Project experts defined several long-term options for developing Mediterranean tourism while protecting the environment.

According to the research of the UNWTO (World Tourism Organization) and the Blue Project, the following exogenous variables will strongly influence the future of Mediterranean tourism:

- Significant social and demographic changes (aging population.
- More female jobs and fewer working hours in the future).
- Little improvement in financial and economic conditions.
- Political and legislative changes, accompanied by a slowdown in the orientation of public opinion towards environmental protection in coastal areas.
- Technological advances in transportation and data production and transmission.
- Increased trade.
- Development of transport network infrastructure.
- Security of travelers (health, delinquency, terrorism), however, the Blue Plan experts emphasize that tourism in the Mediterranean will no longer grow compared to the past, because other markets, especially those of Southeast Asia, are increasingly competitive. Several scenarios have been proposed which take into account the complexity of the phenomenon.

However, Plan Bleu experts stress that tourism in the Mediterranean will no longer experience growth compared to the past, because other markets, particularly those of Southeast Asia, are increasingly competitive.

Several scenarios have been proposed that take into account the complexity of the phenomenon in this table 3.

Table 3. The scenarios taking into account the complexity of the proposed

Scénario	Description
Tendance aggravée T2	Caractérisée par un tourisme international de luxe et par une stagnation du tourisme national qui entrainera la création d'autres póles du tourisme d'élite. Un tel phénoméne pourrait entrainer une immigration illégale, une dérégulation totale, un protectionnisme, un développement du crime et du terrorisme et une injustice sociale. La nature ne serait protégée que dans quelques rares oasis et la qualité de l'environnement se détériorerait á cause de la raréfaction des ressources disponibles pour les collectivités locales.

Scénario	Description
Tendance modérée T3	Croissance á long terme, de type néolibérale. Croissance économique dans les pays méditerranéens. Ressources supplémentaires pour la protection de l'environnement. Tendance á la standardisation du produit du tourisme et augmentation du nombre de petites excursions et randonnées. Innovations technologiques permettant une meilleure gestion des ressources naturelles. Développement économique plus equilibré entre les pays du nord et ceux du sud de la Méditerranée. Scénario comportant de sérieux dégáts infliges á l'environnement par les pressions que le tourisme 131 peser sur les côtes et recherche de la qualité á l'intérieur des terres.
Coopération alternative: scénario de développment durable A1	Basé sur la protection de l'environnement, solidarité volontaire entre pays du nord et du sud de la Méditerranée. Le résultat est la création de complexes touristiques intégrés occasionnant peu de dégáts. La CE va encourager l'émergence d'une politique méditerranéenne basée sur le développement économique modéré et la protection de l'environnement en collaboration avec les pays hors UE . Les principaux aspects de cede politique sont : développement du tourisme rural á l'Intérieur des terres allant de pair avec un développement de l'agriculture ; éducation des autochtones ; gestion équilibrée des ressources en eau gráce á une contribution financiére du tourisme ; tourisme en tant qu'outil de formation et d'intéqration et de promotion sociale.
Alternative au regroupement régional A2	Ce scénario suggére une stratégie pour un « repli sur soi-méme ». La tendance va étre le regroupement par région : intégration des politiques environnementales et d'aménagement du territoire, d'avantage d'échanges de flux touristiques entre le nord et le sud de la Méditerranée.

The main objectives :

- Integrated planning for the development and management of the Mediterranean basin.

- Pollution monitoring and consequent research programs in the Mediterranean basin.

- Development of methods and preventive legislation to solve the problem and institutional and financial framework.

- It synthesizes these studies and creates the “Guide to an Environmental Approach to Tourism Planning and Management in the Mediterranean Region”.

VII. Conclusions

VII. Conclusions

Tourism is one of the most important economic activities, with a particular overall contribution -direct and indirect- to GDP and employment.

The Mediterranean basin and its 21 riparian countries constitute one of the planet's fundamental challenges in terms of sustainable development, as the region can be a model of development or, on the contrary, exacerbate global instability.

The recommended are integrated planning for the development and management of the Mediterranean basin, pollution monitoring and consequent research programs in the Mediterranean basin.

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