



Deliverable 5.2.1 – 5.2.2

**Transferability plan at pilot area and regional scale
(country and transboundary level)
- Region of East Macedonia and Thrace-**



Pilot area: Alexandroupoli-Makri/Thassos-Keramoti



Background

CO-EVOLVE is an Interreg MED modular project co-financed by the European Regional Development Fund, which lasted from January 2017 up to October 2019. It aimed at analyzing and promoting the co-evolution of human activities and natural systems in touristic coastal areas, allowing sustainable development of touristic activities based on the principles of Integrated Coastal Zone Management (ICZM) and Maritime Spatial Planning (MSP).

As all Interreg MED modular projects, Co-Evolve was divided in three phases: the studying phase, the testing phase and the transferability phase. During the first phase of the project - the studying phase -, an unavailable analysis at MED scale of threats and enabling factors for sustainable tourism with local studies on representative pilot areas has been performed in order to demonstrate through pilot actions the feasibility and effectiveness of a ICZM/MSP based planning process. The coherent and cross-fertilized analysis performed constituted the basis of indications for the testing phase, which translated in practice those findings in order to implement pilot actions (plans, concrete actions and measures) in selected coastal zones, setting the conditions for a sustainable tourism in coastal areas. Finally, the transferring phase, in the framework of which this document has been produced, targets two levels: the pilot/regional scale and the Mediterranean scale. At the local/regional level, the objective is to transfer the results of the analysis and demonstration actions beyond the immediate territorial and administrative limits of the pilot area. At the Mediterranean level, the objective is to transfer Co-Evolve major findings, conclusions and outputs to relevant authorities from each Mediterranean countries.

It should be noted that the purpose of this document is not to present in detail the results of Co-Evolve, be it research or pilot area experiences, but to give an overall overview of what has been achieved. The individual reports are available on the Co-Evolve website <https://co-evolve.interreg-med.eu/> and the direct references of the reports mentioned in this document are listed in the bibliography.



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Chapter 1: Results from the studying phase

The coastal areas are very coveted spaces, which are also fragile and limited. The concentration and competition of human activities have led to degradation of coastal ecosystems. The challenge of sustainable development in these areas is to preserve outstanding natural spaces without hindering the development of human activities. Tourism is one of the major economic activities on the coastal zone of the Mediterranean region. In 2014, it accounted for 11.3 percent of Gross Domestic Product (GDP) and 11.5 percent of employment in 2014, with expected significant growth through 2025 including a 0.6 percent increase in total contribution to GDP¹. As such, this activity has a crucial role to play in the development of the region. Though, the continuous growth of tourism in Mediterranean coastal areas exerts pressures on environmental and cultural resources of the coastal zones, and affects negatively social and cultural patterns of tourist destinations.

The approach of Integrated Coastal Zone Management (ICZM) is perceived by European Union (EU) and numerous international organizations as the most appropriate approach for the development and the management of coastal zones. ICZM is defined as “a dynamic process for the sustainable management and use of coastal zones, taking into account at the same time the fragility of coastal ecosystems and landscapes, the diversity of activities and uses, their interactions, the maritime orientation of certain activities and uses and their impact on both the marine and land parts”². It is complemented on the sea side with maritime spatial planning (MSP) principles. MSP aims at “analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve objectives usually specified through a political process”³. In order to better understand which are the threats tourism poses to the coastal zones, but also which are the most relevant enabling factors for its sustainability, an analysis has been performed, and its results are summarized below.

¹ Plan Bleu, 2016. Tourism and Sustainability in the Mediterranean: Key Facts and Trends.

² UNEP/MAP/PAP/RAC, 2008, ICZM Protocol

³ Ehler, C. and Douvère, F. 2009. Marine Spatial Planning: a step-by-step approach toward ecosystem-based management, Intergovernmental Oceanographic Commission and Man and the Biosphere Programme. IOC Manual and Guides no. 53, ICAM Dossier no. 6. Paris: UNESCO.

1.1. Threats and enabling factors for tourism sustainability

1.1.1. Tourist fluxes and carrying capacity⁴

Massive tourist fluxes can alter and compromise tourism destinations causing several potential direct and indirect impacts, strictly linked to the increasing need of local resources, space and to the over-production of waste/pollution. Diversification of the tourist offer, de-seasonalization and distribution of the flows on wider areas are all key actions to reduce the pressure from tourist fluxes.

The Tourism Carrying Capacity Assessment (TCCA) is a valuable decision-making tool for maritime and coastal tourism destinations planning. A system of metrics for a logical assessment of TCCA for maritime and coastal tourism in the Mediterranean was developed in the frame of CO-EVOLVE.

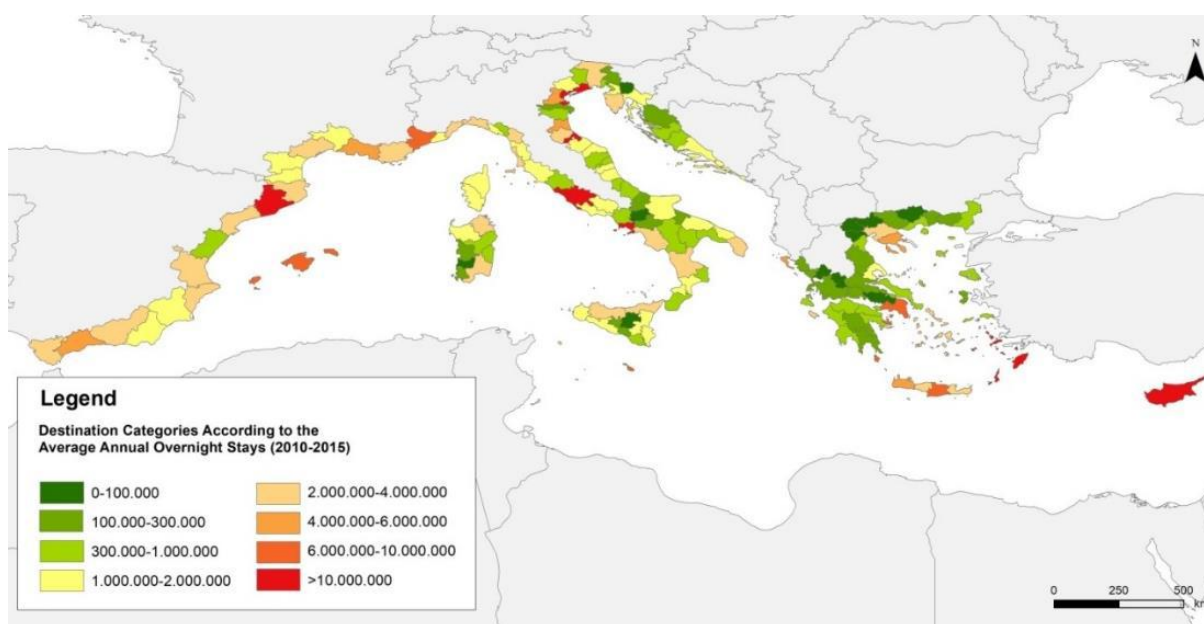


Figure 1: Destination categories according to the Average Annual Overnight Stays (2010-2015) (from Coccossis, H. and Koutsopoulou, A., 2017(b))

⁴ CO-EVOLVE project: Coccossis H. and Koutsopoulou A., 2017(a); Coccossis H. and Koutsopoulou A., 2017(b)



1.1.2. Littoralization and urbanization⁵

Urbanization and especially coastal urbanization or littoralization, namely land occupation by urban land uses and related infrastructure in coastal areas, is a long-standing and intense phenomenon in the Mediterranean region.

Between 1950 and 2010, the Mediterranean urbanisation rate increased from 42.86% to 65.63%, while estimations show that, by 2050, 73.96% of the Mediterranean population will live in urban areas. The population residing in urban areas is shown in Figure 1.

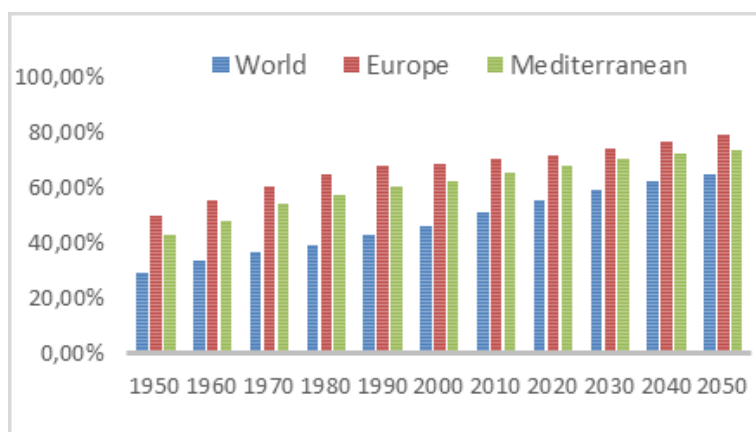


Figure 2: Increase of the population residing in urban areas (%) (Coccossis H., Stavridou K. and Koutsopoulou A., 2017, based on United Nations Environmental Programme Data Set, 2015)

The population within 100 kilometres of the Mediterranean coast has increased almost 1.5 times in the period from 1975 to 2005 (figure 1). Likewise, the population density at the European coast of the Mediterranean, from 1950 to 2013, is continuously increasing but with a lower growth rate over the years.

If the urbanization rate of European countries is expected to increase by a moderate degree by 2050, North African countries' rate will grow even more rapidly.

Coastal urbanization/littoralization can be considered both as a threat to and a main component of the tourist destinations development. Mature tourist destinations with high tourism dynamism show the highest degree of coastal urbanization/littoralization, while regions characterized by low to medium touristic pressure are still predominantly rural.

The ICZM Protocol is the main instrument at the basin scale to address littoralization/urbanization. In its article 8, it requires the contracting parties to establish a setback zone where construction is not allowed in the first 100 meters from the shore. At the national level, all Mediterranean countries have developed strategies and plans to manage land use in their coastal areas.

⁵ CO-EVOLVE project: Coccossis H., Stavridou K. and Koutsopoulou A., 2017.



*1.1.3. Land-sea interactions*⁶

The Mediterranean has long been the focal point of interactions between different coexisting and often conflicting socio-economic activities, such as fisheries and agriculture, energy extraction and exploration, and maritime transport. However, currently the maritime and coastal tourism is the largest sea-related economic activity in the Mediterranean region. Future scenarios indicate that in 2030 the Southern and Mediterranean Europe will receive 103 arrivals per 100 inhabitants. The forecast for energy extraction and exploration is for an increased exploitation of offshore oil and gas deposits; while for maritime transport a 4% annual growth rate in global trade over the next decade can be anticipated.

Similarly, fish aquaculture production in the Mediterranean countries of the EU is expected to increase by 112% between 2010 and 2030 (Piante & Ody, 2015⁷). Impacts from other activities on tourism include, for instance, negative interactions with marine aquaculture (conflicts over the use of space and local degradation of ecosystems), the density and negative influence of ports infrastructures, and negative interactions with off-shore oil and gas infrastructures.

*1.1.4. Coastal erosion and protection measures*⁸

Many important tourist destinations along the EU Mediterranean coast are exposed to erosion.

If over the past decades the broad erosion along the Mediterranean coasts has been basically related to the anthropogenic development, which altered the overall sediment budget and the natural balance of littoral sand nourishment, the future erosion trends will additionally largely depend on the climate change effects (sea-level rise and extreme events). Building coastal defense structures is a concrete way to prevent or reduce erosion at the local level. A significant presence of hard defense structures is observed in several Mediterranean areas characterized by sandy beaches and high urban development. Well-designed defense structures generally reduce the erosion rate of the protected beach, and are often combined with sand supply, dredging and nourishment in the framework of ICZM policy development. Although the technique of beach nourishment is nowadays becoming

⁶ CO-EVOLVE project: Coccossis H. and Koutsopoulou A., 2017(d)

⁷ CO-EVOLVE project: Piante C., Ody D., 2015. Blue Growth in the Mediterranean Sea: the Challenge of Good Environmental Status. MedTrends Project. WWF-France

⁸ CO-EVOLVE project: Carniel S., Gaeta M.G. and Bonaldo D., 2017(a); Carniel S., Gaeta M.G. and Bonaldo D., 2017(b); Rizzetto F. and Vacca C., 2017(a).

much more adopted in the Mediterranean region, it is often applied as a measure of a remedial rather than preventive strategy. Therefore, an overall long-term planning, coastal management, and regular monitoring of the coastline should be included in the planning of this type of measures as part of ICZM policy.

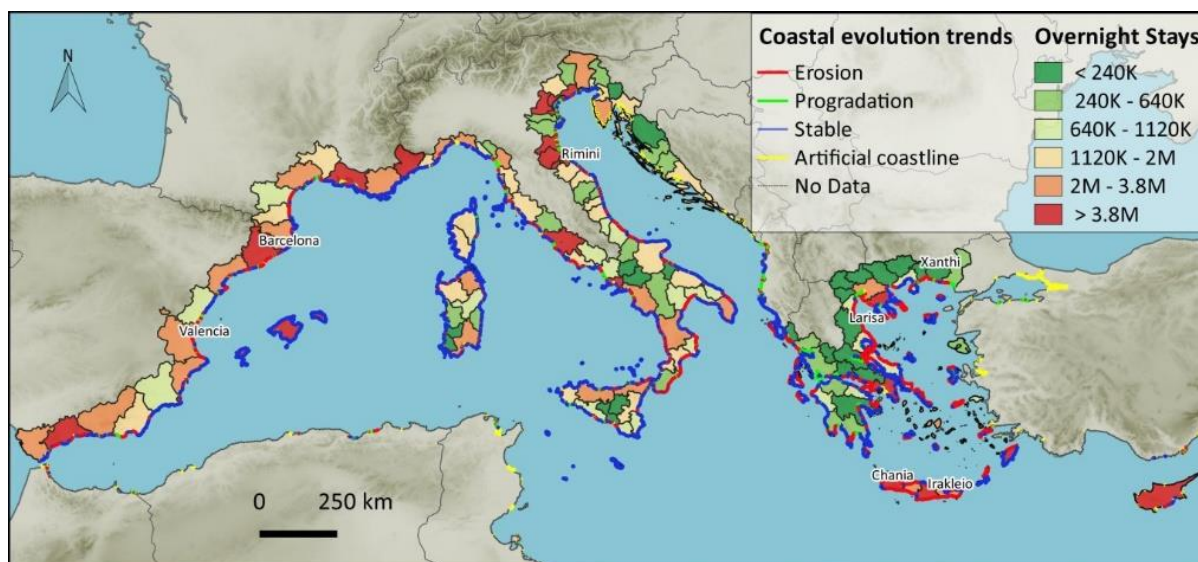


Figure 3: Coastal evolution trends and NUTS III overnight stays (average 2010-2015) in the Northern Mediterranean
 (from Drius et al. 2018)

1.1.5. Ecosystem threats and protection ⁹

The main threats tourism poses to ecosystems are ecosystem fragmentation and degradation; wildlife disturbance and exploitation, solid waste production, water pollution, air pollution, introduction of alien species, noise pollution and light pollution.

On the other side, healthy coastal ecosystems provide multiple benefits for coastal tourism. They support recreation, wellbeing, aesthetic experience and intellectual stimulation. These so-called “cultural ecosystem services” rely on other services provided by coastal ecosystems crucial for tourism development, such as for instance micro-climate regulation and protection from coastal erosion. Considering the importance of ecosystem services for coastal tourism, current regulations, such as the MSP Directive, need to be supported and guided by an ecosystem approach, which takes into adequate consideration also the role of ecosystem services.

⁹ CO-EVOLVE project: Drius M., Bongiorno L. and Pugnetti A., 2017 (a); Drius M., Bongiorno L. and Pugnetti A., 2017(b); Drius M., Campanaro A., Bongiorno L. and Pugnetti A., 2017

Conservation measures are concentrated more in the EU Northern Basin (Corso Ligurian Basin) and in the Central Basin (between Tunisia and Sicily), than in the southern Mediterranean Basin.

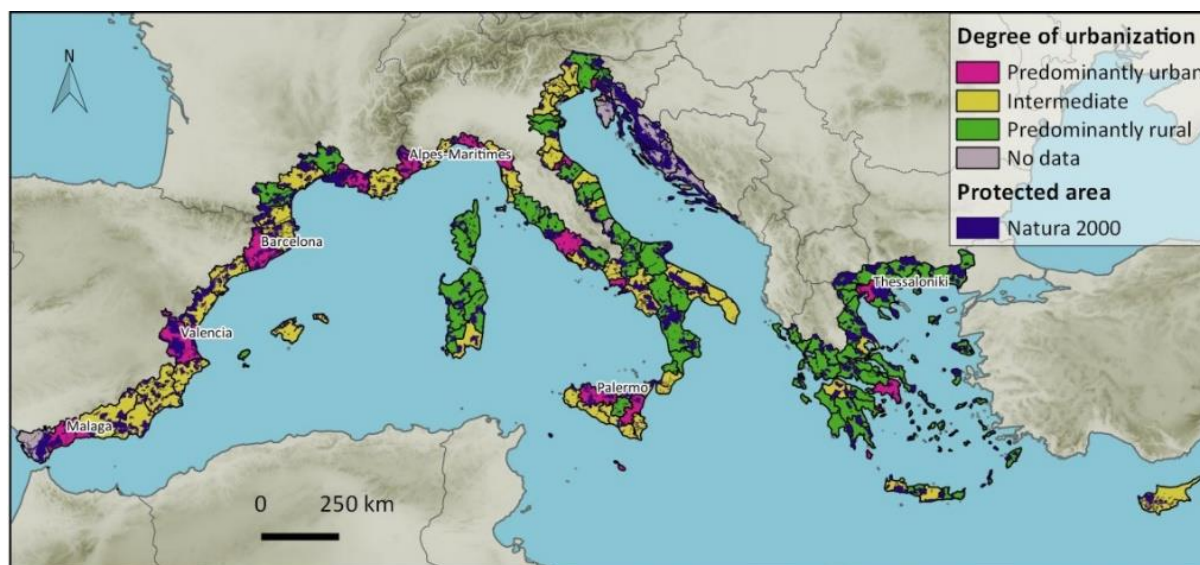


Figure 4: Degree of urbanization and distribution of Natura 2000 sites in the Northern Mediterranean (from Drius et al. 2018)

1.1.6. Water management ¹⁰

Most of the impacts of tourism on water resources are linked to seasonality, with peak demand coinciding with the dry season (summer). Spatial concentration along the coast, at locations with scarce local water resources (islands) and often in fragile natural environments, is particularly problematic. There are numerous conflicts among uses (drinking water, agriculture, industry, ecosystems).

¹⁰ CO-EVOLVE project: Kennou H., Miquel S., Burak S., Margat J., and Dubreuil C., 2017

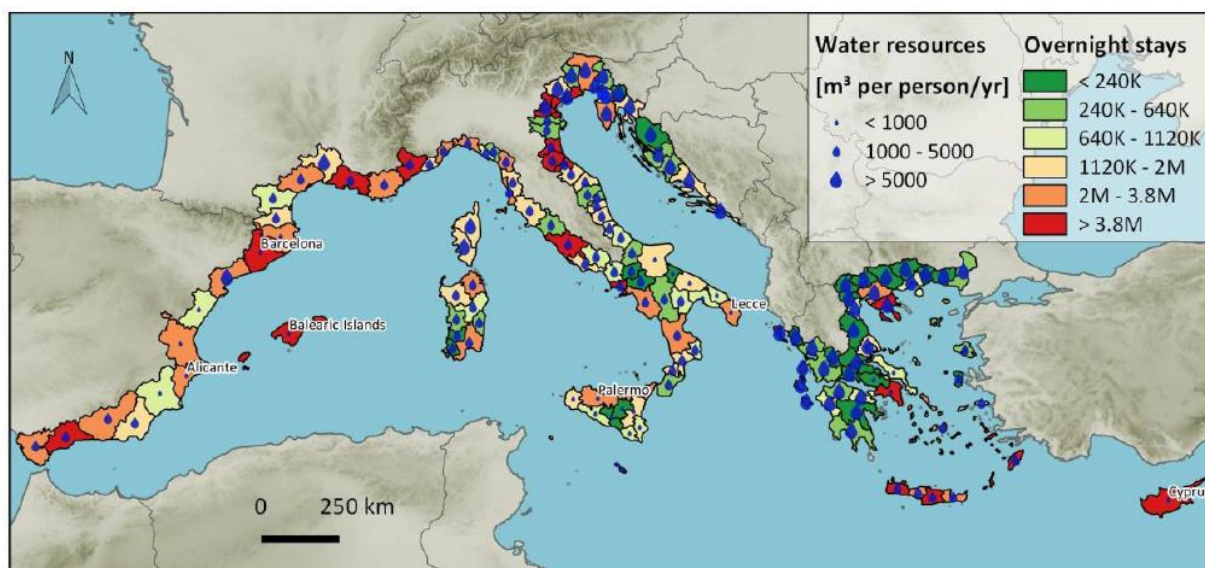


Figure 5: Availability of water resources and high tourist pressure (from Drius et al. 2018)

In the southern countries, as well as in Turkey, where water demand is still increasing and the resources are most threatened by climate change, the supply-side policy, mainly for development purposes, is still predominant. Overexploitation of groundwater is still unequally mastered. One of the main objectives of water policies is to prevent the consequences of drought and the risk of water shortage, as well as the current and future “water crisis” caused by climate change.

1.1.7. Transport and accessibility¹¹

Transport can be considered as a key factor in the success of sustainable tourism development. Accessibility of a tourist destination in order to attract tourists largely depends on the availability and efficiency of transport needed to travel to that destination. On the other hand, poor accessibility to destinations can discourage visitors from attempting to reach these places altogether.

¹¹ CO-EVOLVE project: Sakib N., Musco F., and Gissi E., 2017. State of the art and future development of Transport and Accessibility at Mediterranean Scale.

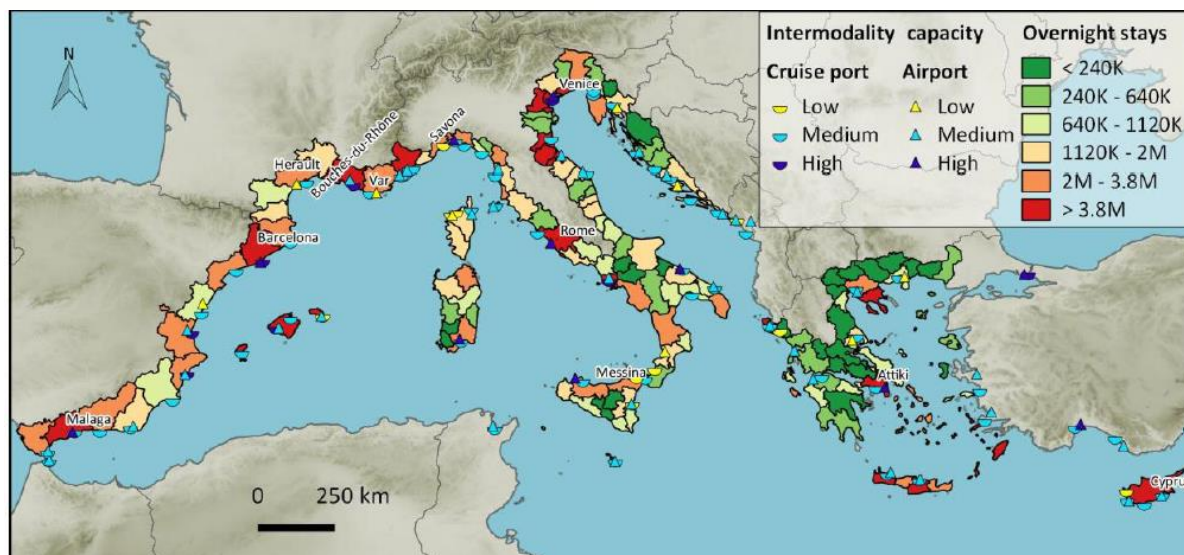


Figure 6: Intermodality capacity for cruise ports and airports is higher in Western Mediterranean than in Eastern Mediterranean, consistently with tourism fluxes (from Drius et al. 2018).

1.1.8. Interaction among threats and enabling factors ¹²

All T&EF are expected to increase in the near future, although at different speed and intensity, with the exception of “pollution and other anthropogenic pressures affecting ecosystems” which should stay constant, owing to the good environmental policies and practices. In general, the intensity of the interactions between T&EF is increasing, with the three main drivers being: i) the morphological instability of coastal areas, also due to climate changes; ii) the increase of tourist fluxes; iii) the protection measures to put in place on the coasts and ecosystems in order to respond to threats and allow for sustainable tourism development. The expected increase of other uses of the coast and the sea within a general expansion of sea economy and their coexistence with tourism will be another major issue. This analysis, although simplified, clearly shows the importance of a multidisciplinary, integrated and long-term view and effort on policy and governance.

1.1.9. Governance for a better sustainability of tourism ¹³

Even though they cannot be considered as “silver bullets”, the ICZM Protocol and MSP principles can be considered as major tools for the improvement of sustainability of tourism since they address all the crucial issues, which the Mediterranean basin is facing. Considering tourism through their prism can also help adopt a holistic approach which is essential in order to balance the uses of the coastal zone, as well as to reduce the conflicts

¹² CO-EVOLVE project: Drius M., V. Evers, S. Bellacicco, L. Petrić, M. Prem, A. Barbanti, 2018.

¹³ CO-EVOLVE project: Evers V., Petric L. and Prem M., 2017.



among them. Five main cross-cutting obstacles to sustainable tourism can be identified when adopting this holistic perspective.

- Obstacle 1: Countries' excessive orientation and over-dependence on tourism as an economic activity;
- Obstacle 2: Misbalance between destinations' carrying capacities and demand volume;
- Obstacle 3: Seasonal concentration of demand;
- Obstacle 4: Over-use and pollution of (natural and cultural) resources by tourism industry;
- Obstacle 5: Illegal activities by tourism industry.

The ICZM Protocol, as a legally binding instrument, complemented by the MSP principles on the marine part of the coastal zone, provides a legal basis for getting over these obstacles, and may act as a key enabling factor for co-evolution of the tourist areas of the Mediterranean region. Its implementation through the national laws, as well as through local practices, should enable the coastal destinations to keep or turn their coastal zones into healthy, attractive, economically balanced and diverse ones, which is the basis for developing sustainable tourism. Besides, it enables dealing with the emerging coastal environmental challenges, such as the climate change.

1.2. Co-evolve's planning methodology¹⁴

The guidelines produced in the framework of the project offer a step-by-step methodology to construct a tourism-driven strategic plan for sustainable development of coastal areas. They integrate the main principles and goals of ICZM and of sustainable tourism. The proposed planning methodology is organized in different consequential steps that constitutes an adaptive and cyclical process. It consists of 6 major phases, each of which includes key tasks and steps. The iterative process of tourism-driven strategic planning in coastal areas is reported in the figure bellow.

¹⁴ CO-EVOLVE project: Filippo Magni, Federica Appiotti, Denis Maragno, Alberto Innocenti, Vittore Negretto, Francesco Musco, 2017.



Figure 7- Conceptual framework of the methodology to the tourism-driven strategic plans construction (from Magni et al, 2017)

A short summary of each phase of the process is presented bellow.

STEP 0 - PLANNING SET-UP: The main aim of this step, that can be considered the most important pre-planning phase, is to create the needed bases for the subsequent implementation of the whole planning process. In this phase, one will answer to the **questions** why (why do we need this strategy for), who (identification of the stakeholders and of the team which will develop the plan), when (timing definition, identification of the milestones), where (territorial boundaries), and how (which are going to be the costs).

STEP 1 - BUILDING KNOWLEDGE FRAMEWORK: The overall aim is to analyze the area, in a coherent and integrate way, in order to build up the knowledge to support the decision-making process provided in steps 2 and 3, in which the vision and objectives are defined and the strategy is constructed. This step is organized in 3 main tasks. The first task aims to collect information about the existing area status in relation to sustainable tourism development. The information that should be collected and subsequently analyzed are: (i) threats and enabling factors that affect the co-evolution of area's tourism development, (ii) area's sustainability status; (iii) existing policies and plans. The second task aims at



analyzing data collected in order to obtain a knowledge framework useful to construct planning priorities and subsequent goals and objectives. The analysis must be strongly focused on the planning main goal. Finally, the third task's purpose is to organize the results obtained from the previous phases to facilitate the subsequent steps execution. At the end of this phase, a final summary of existing conditions of the area should be produced focusing on the agreed points

STEP 2 - DEFINING GOALS VISION AND OBJECTIVES: The starting point to create an effective strategy for sustainable tourism development in coastal areas is to set the main direction to which we want to move: the vision and its related objectives. The construction of the vision for the area and the identification of strategic specific objectives must be constructed, on one hand, addressing the strategic issues emerged from the analytical phase, and, on the other hand ensuring the coherence and compliance with ICZM and Sustainable tourism principles and main goals. Therefore, the step should be subdivided in 3 main tasks: the first one will consist in designing a common and integrated vision for the area; the second one will be to identify the main planning goals and objectives; and the last will be to link objectives with ICZM and sustainable tourism goals.

STEP 3 - TOURISM DRIVEN STRATEGIC PLANNING CONSTRUCTION: The aim of this step is to develop the longer-term elements for a sustainable tourism-driven development of the area starting from the vision and objectives identified. The tourism-driven strategy identifies a feasible “trajectory” of change based on the approved objectives and consisting of concrete actions reported in a comprehensive action plan for its implementation. Therefore, the tourism-driven strategic plan is an integrated set of desired and integrated outcomes in which the actions for the realization of them are explained through an action plan. The action plan will consist in a series of management actions aimed at achieving one or more identified objectives.

STEP 4 - IMPLEMENTING THE PLAN: The purpose of this phase is to apply the strategic approach to priority issues, i.e., on a smaller, more practical scale. Design and implement of strategic action plans depends upon the strategic priorities identified within the second step. As it identifies the key undertakings in consultation with stakeholders while focusing on resources and partnerships, the implementation of strategic actions plans remains fully congruent with the Co-evolve project approach.

STEP 5 - REVIEWING THE PLAN: The revision step is one of the most critical planning steps, and is an activity designed to provide constant feedbacks on the progress of the planning process and on the status and efficiency of its implementation. The revision step



includes a phase of monitoring and a phase of evaluation. The aspect of tourism sustainability can be monitored using the “Sustainability toolkit” presented below, and the indicators selected for the specific area in the building framework step (step1). The use of indicators will show the trends of change after the actions’ implementation.

The importance of stakeholder involvement

It is important to stress the development of the plan should be done in a participatory way. The participatory process shall start from the very beginning of the process (STEP 0), starting from concept development through implementation, to monitoring and evaluation of results. Early stakeholder engagement in decision-making has been frequently cited as essential if participatory processes are to lead to high quality and long-lasting decisions.

In order to be efficient, stakeholders involved should include not only the actors likely to have an impact on the project, but also the people who will be affected by the project. Categories of stakeholders usually considered as relevant in tourism context include government, residents, local business, visitors, tourism employees, academics, and civil society. The participation process is complex and can be problematic, as there has to be collaboration among stakeholders holding different opinions on the same subject. For example, investors and hotel managers often don’t share the point of view of NGOs.

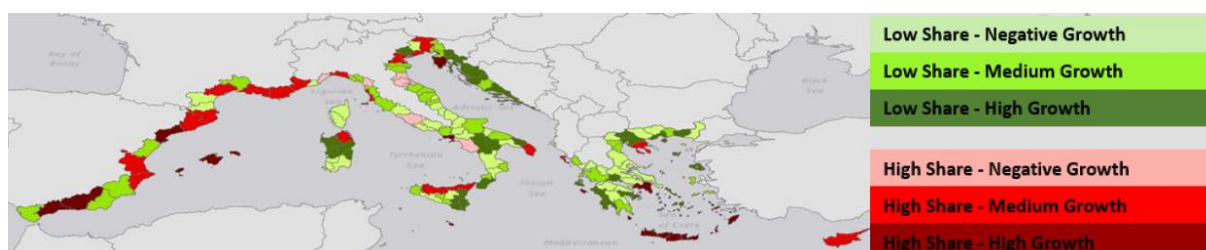
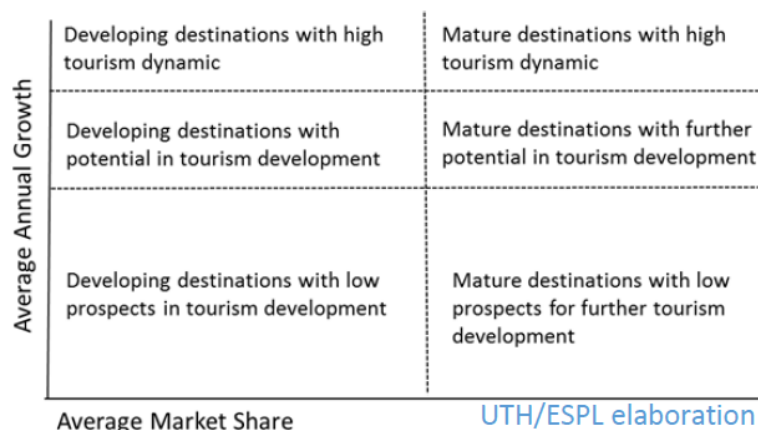
1.3. Co-evolve’s tourism typology and indicators¹⁵

Tourism typology

The use of a common typology in tourism development substantially contributes to the identification of goals and objectives, the highlighting of trends, problems, conflicts and opportunities for development, the improvement of the decision-making process and the production of alternative scenarios for each type of destination. In CO-EVOLVE, the typology developed is based on two variables that form the basis for the classification. The first refers to the average share of overnight stays at each destination against the total overnight stays in the Mediterranean destinations and the second refers to the average annual growth of overnight stays at each destination.

¹⁵ CO-EVOLVE project: Coccossis H. and Koutsopoulou A., 2017(e); Coccossis H. and Koutsopoulou A., 2017(f).

The use of the two variables led to 6 main destination types that provide useful insights about the state and potential of the tourism sector in the Mediterranean regions (figures 8 and 9).



Figures 8 and 9 - State and potential of the tourism sector in the Mediterranean regions (Coccossis H. and Koutsopoulou A., 2017(e))

Building upon the typology, the conceptual model of indicators developed in CO-EVOLVE represents an extended and flexible tourism sustainability toolkit that can be customized according to the specific needs and characteristics of the highly diversified Mediterranean coastal destinations.

The toolkit (figure 11) constitutes a three-tier system composed by the following sets of indicators:

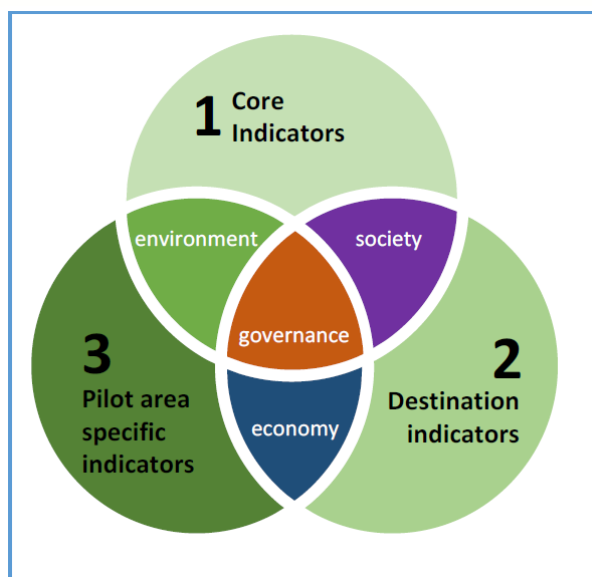


Figure 11: CO-EVOLVE toolkit (Coccossis H. and Koutsopoulou A., 2017(e))

Core indicators: 40 indicators have been selected from the European Tourism Indicator System (ETIS) to serve as the basis for comparison of the level and trends of sustainable development for all types of destinations

Destination indicators: an extensive set of indicators developed to address the specific issues of coastal areas according to the characteristics and particularities of the predominant type of tourism activity in each type of destination (Beach/Maritime tourism, Urban/Cultural tourism, Cruising, Recreational boating, Nature/Ecotourism).

Pilot area-specific indicators: a set of indicators developed on the basis of area-specific critical issues with linkages to the main threats, enabling factors and governance issues identified in Mediterranean coastal areas.

The starting point for adapting the Toolkit to each destination is a list of priority indicators selected from the Toolkit which refer to the most common critical issues and specificities encountered in Mediterranean coastal tourism destinations. The list is meant to act as a baseline for comparisons among coastal tourism destinations in the Mediterranean.

The use of the Toolkit provides hints for improving existing - or shifting towards alternative - tourism models, it highlights existing data gaps & provides guidelines towards relative measurements. It can also be used as a starting basis to measure and quantify stakeholders' perceptions, define thresholds through public consultation processes, develop probability scenarios to adjust future planning actions and policies and to monitor changes in sustainability in the future.

Chapter 2 – Results of pilot experiences

2.1 Presentation of the baseline situation

The pilot areas tested in the Region of West Macedonia and Thrace are Makri and Keramoti.

Alexandroupolis/Makri is an urban and suburban coastal area with a port next to a Natura 2000 protected area. Makri is a coastal settlement of the municipality of Alexandroupolis in the regional unit of Evros. It is the basis of the local community of Makri and is considered one of the largest settlements of Alexandroupolis with a population of approximately 800 inhabitants and it is situated 12 kilometers west of the center of Alexandroupolis. Makri is an emerging coastal tourism destination in the summer months with a heavy secondary housing construction status.



Territorial coverage of Alexandroupoli/Makri Pilot Area

The pilot area of **Alexandroupoli-Makri** faces important threats that mainly relate to:

- **Climate Change effects,**
- **Morphological stability,**
- **Urbanization,**
- **Touristic fluxes and Carrying Capacity,**
- **Pollution and other anthropogenic pressures affecting ecosystems and the environment,**
- **Conflicts among different uses on land and at sea and land-sea interaction.**

More specifically, the vulnerability of the area to climate change has caused severe erosion to the shoreline and is expected to be aggravated in the future due to the construction of the port and its navigation channel.

In addition, increased littoralization pressures are identified from the city of Alexandroupolis towards Makri settlement, in spite of the planning procedures to orientate urban



development towards the hinterland. Efforts to upgrade and differentiate the area's tourism product are in place, in order to attract more qualitative tourism and increase the currently low touristic fluxes. A final key challenge for the area is the successful management of the waterfront which is currently concentrating many conflicting activities.

The enabling factors of the pilot area are mostly focusing on addressing the key threats already identified. Coastal protection measures such as sand nourishment and defense mechanisms have been adopted to manage erosion problem; water treatment plans to address overexploitation and salinization problems of coastal groundwater; studies to estimate needs and cost of port dredging; transport plans to ensure the accessibility to the beach and connect the commercial port to the international highway; governance mechanisms to overcome existing gaps in national legal and administrative framework.

Tourism in Alexandroupoli/ Makri needs to increase in both **tourism flows** and related **infrastructure**. Tourism plans and policies seem to focus only on the development of beach and maritime tourism which is mainly attributed to the rich natural resources of the pilot area (e.g. all beaches are awarded with Blue Flag and have excellent water quality - although lacking infrastructure in some cases). Tourism and land use planning as well as coordinating mechanisms for MSP/ICZM exist but are not always implemented or functioning. The municipality is strongly focusing on increasing coastline protection measures, especially from erosion and coastal flooding, in order to support the co-evolution of tourism with the environment.

Data available is very limited for accurate interpretation and include many qualitative estimations and spatial inconsistencies. Data coming from official statistical sources is rarely available and in most cases at a municipal level. Data availability at destination level is limited to estimations from municipal authorities, showing important gaps in measuring and monitoring.

Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years. Also, satisfaction levels on key issues are difficult to be defined e. Even when estimated, they only represent the perspective of official municipal authorities instead of an overall perspective of official authorities, experts, public and private stakeholders involved in tourism sector.

It results that key characteristic of Alexanroupolis/Makri pilot area is the diversified needs envisaged between the Eastern, Urban and Western Part of the Alexandroupolis.



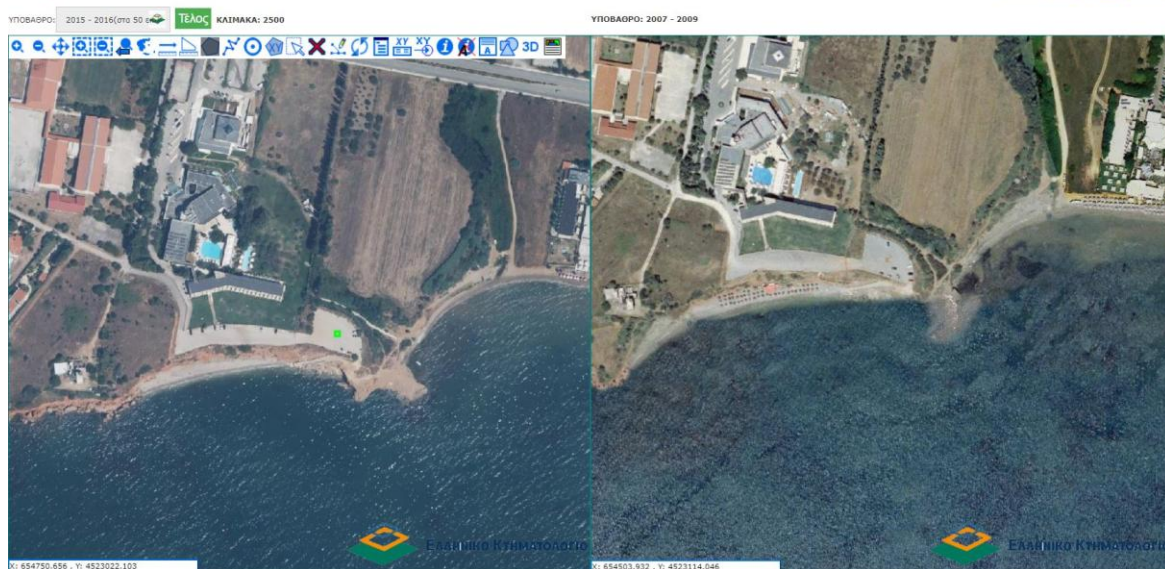
Reference documents for the spatial, urban and coastal planning of Alexandroupolis/Makri pilot area

It results that the eastern part is developed/ expanded based on urban control zone planning, the city part is developed based on the urban development master plan and the western part is severely affected by the National Park of Evros River Delta.

The analysis shows significant opportunities for tourism development, mostly in the field of beach and maritime tourism, constrained by important inconsistencies in the implementation and monitoring of tourism related policies and actions at destination level.

Future efforts should focus on integrating indicators related to governance factors (currently not considered of high priority) and management and optimization of the pilot area's key assets, especially in the case of beach and maritime tourism.

During the project, autopsies were carried out at specific under pressure areas indicated by the stakeholders (e.g. Municipality of Alexandroupolis and Port Authority of Alexandroupolis), in order to document the phenomenon of pressure on the coastal front of the pilot region, both within the urban area (Western Basin of the port) and in suburbs, near the area of Nea Chili (Kokkina Vrachia). Relevant photographic and satellite material is shown below.



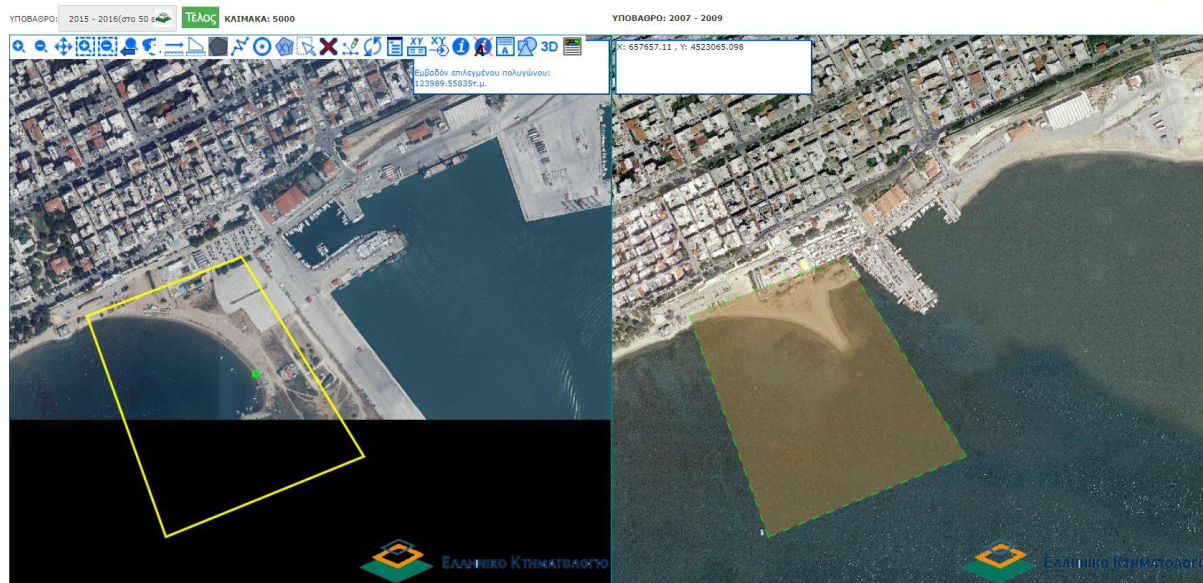
Alexandroupolis – Kokkina Vrachia (2015/2007)



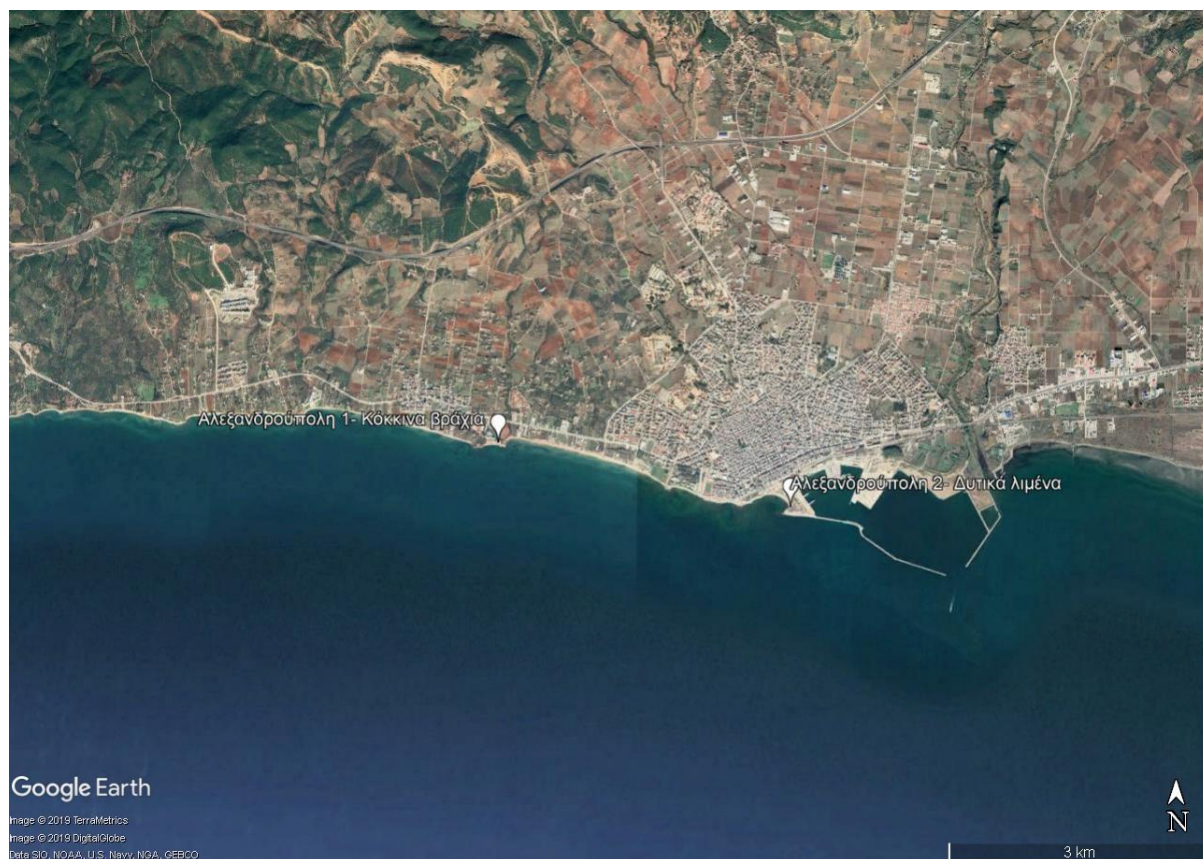
Alexandroupolis – Kokkina Vrachia (2015/ 1945)



Alexandroupolis – Western Basin of the port (2015/ 1945)



Alexandroupolis – Western Basin of the port (2015/ 1945)



Alexandroupolis – Google Earth



Alexandroupolis (Kokkina Vrachia) – The path now leads into the sea

Alexandroupolis (Kokkina Vrachia) – The path now leads into the sea



Alexandroupolis (West of the Western Basin of the port) – Backfilling phenomena

Alexandroupolis (West of the Western Basin of the port) – Coastal erosion phenomena

Alexandroupolis – Observation

Keramoti-Thasos is a coastal area in a Natura 2000 protected area and an island destination with major tourist and coastal activities. The pilot area is shown in below picture.

Geographical Context | KERAMOTI



Territorial coverage of Keramoti/Thasos Pilot Area

Keramoti is a town and a former municipality of the Kavala regional unit, East Macedonia and Thrace. The municipal unit of Keramoti has a territorial coverage of 115.095 km² and as of the 2011 census it has a population of 5,115 inhabitants while the town of Keramoti has a population of 1,438. Keramoti is structured at an altitude of 10 meters, situated 42 kilometers from Kavala and across Thasos island. It is located on a small peninsula which forms a natural harbor near the estuary of Nestos. It was initially a small fisherman's village, though currently it is an emerging touristic resort with heavy infrastructure developments including hotels and rented apartments. Keramoti has a sea freight and passenger port with ferry connections to Thasos. The harbor is up to 7.5 meters deep and functions as a fishing shelter as well.

The village of Keramoti is "inside" the Natura 2000 protected area and the port of Thasos is "surrounded" by another Natura 2000 protected area. Keramoti is one the two ports connecting the island of Thasos to the mainland (the other is Kavala). The island of Thasos is a tourist destination known for its "wild character": rich forest near the sea, combining "sea and sand" and "summer mountain" activities.

The island of **Thasos** is located in northern Greece, across the coasts of Eastern Macedonia and it is administratively governed by the region of Eastern Macedonia and Thrace. The length of Thasos coasts is 115 km and its territorial coverage is 378.84 km². It is situated 18 nautical miles away from Kavala and 6 miles away from Keramoti and Kavala Airport. Its population is approximately 14,000 inhabitants. Tourism is currently an emerging sector and is considered a heavy economic industry mainly during the summer period.

The pilot area of Keramoti-Thasos faces important threats that mainly relate to:

- **Climate change and morphological stability,**
- **Littoralization and urbanization,**
- **Conflict among different uses on land and land-sea interaction,**
- **Coastal Protection Measures,**
- **Transport and accessibility (port activities development),**
- **Governance.**



Severe coastal erosion is identified in the Municipality of Nestos. The set of images below depict the evolution of erosion (before/after) and sets the basis and the goals for the identification of measures for the safeguarding of the coastal front.

Additionally, other joint coastal/ tourism problems/needs have also been identified. In particular, a set of relevant problems are presented below:

- **Sources of pollution and systematic ecosystem degradation**
 - Uncontrolled disposal of marble waste from the marble industry
 - Uncontrolled disposal of waste
 - Uncontrolled disposal of waste from ferryboats in the port of Keramoti
- **Lack of infrastructure**
 - Lack of docking infrastructure during the high-demand summer session
 - Lack of protection of vessels from western winds
- **Lack of co-ordination between the competent authorities**
 - Municipality of Nestos and Developmental Agency of Nestos, Developmental Agency of Kavala, REMTH, The Nestos River Delta Managing Body, Kavala Forestry Office
- **Lack of promotion activities related to the local touristic product**
 - Visitors do not visit the protected areas and do not know the natural richness of the coastal and marine environment

In this context, and in accordance with the WP3, the pilot area of **Keramoti-Thasos** faces important threats that mainly relate to:

- **River delta retreat and sea water intrusion;**
- **Tourism development of the Natura 2000 protected area (promotion of eco - tourism);**
- **Future planning of ecotourism activities and low impact economic activities (aquaculture, agriculture etc.).**

Keramoti

Based on the outcomes of WP3, the pilot area of Keramoti faces important threats that relate mainly to Climate Change and morphological stability, Touristic fluxes and Carrying Capacity and land-sea interactions and conflicts. More specifically, the increased erosion level of the shoreline has led to significant degradation of the coast, which is expected to deteriorate in the future due to medium estimated sea level rise. Increased coastal flooding events cause important accessibility problems (urban flooding, collapse of the road network) as well as salinisation of the lagoons and groundwater system. The port infrastructure also causes great problems such as traffic, noise, degradation of the road infrastructure and the urban environment, significantly limiting the space and opportunities for tourism activities. The carrying capacity of Keramoti is also limited by insufficient infrastructure for tourism development. Regarding land and sea interactions, the main conflicts identified between tourism and maritime transport as well as tourism and ecosystems protection.



The enabling factors of the pilot area are mostly focusing on Ecosystems Protection, Transport and accessibility and Water Cycle and Depuration. The area is targeting to more quality tourism and tries to shift from the typical “sun and sea” model to eco-tourism activities and diversify its tourism product to eco-friendly activities; water supply management plans and waste treatment plans have already been completed or will be in the near future; plans to move all commercial marine traffic to nearby ports and transform Keramoti port to a marina (or at least only serve as passenger port) are under discussion. In terms of governance factors, the municipality of Nestos and the Managing Authority of Nestos - Vistonis are working together to set common objectives and build common planning instruments. However, in spite of the important threats posed by climate change, no coastal protection measures are currently taken to address them.

Data available is very limited and include important spatial inconsistencies. Data coming from official statistical sources is rarely available and in most cases at a municipal level. Data availability at destination level is limited to estimations from municipal authorities or existing academic studies, thus showing important gaps in measuring and monitoring.

Moreover, no information is currently available regarding the trends of highly prioritized indicators over the past years while thresholds based on satisfaction levels could not be defined at this stage.

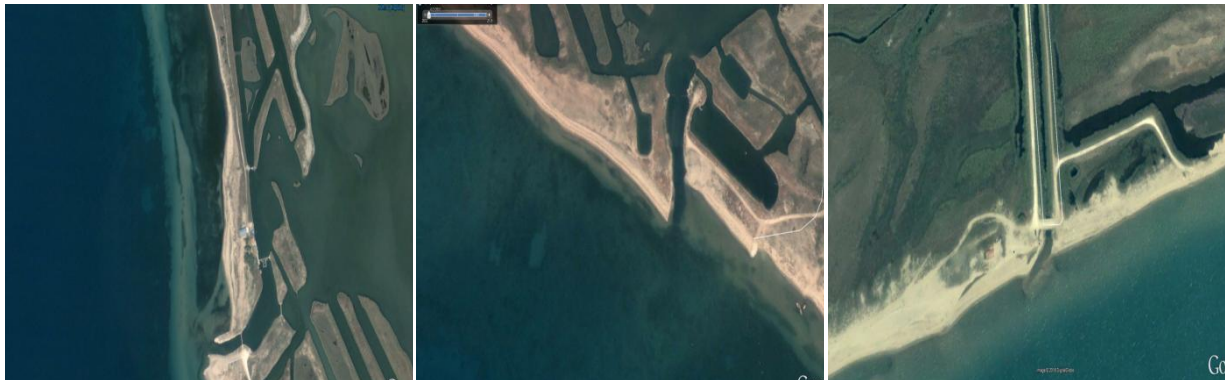
In a preliminary assessment, the pilot area of Thasos/Keramoti needs and aims to attract more quality tourism (in terms of spending per capita) as well as to limit seasonality and expand its tourism period.

Tourism plans and policies seem to focus mainly on the development of nature and ecotourism and far less on beach and maritime tourism. This is mainly attributed to the fact that Keramoti is a settlement within a protected area with important natural resources to support the development of ecotourism activities. However, considerable lack of data is observed in recording and monitoring both sites and species (e.g. state, number and conservation status) within the limits of the protected area in order to fully assess the dynamics of tourism development at the destination. Since most infrastructure activities are restricted by the protection framework of the area, Thasos/Keramoti is mostly focusing on increasing coastline protection measures to prevent erosion and coastal flooding.

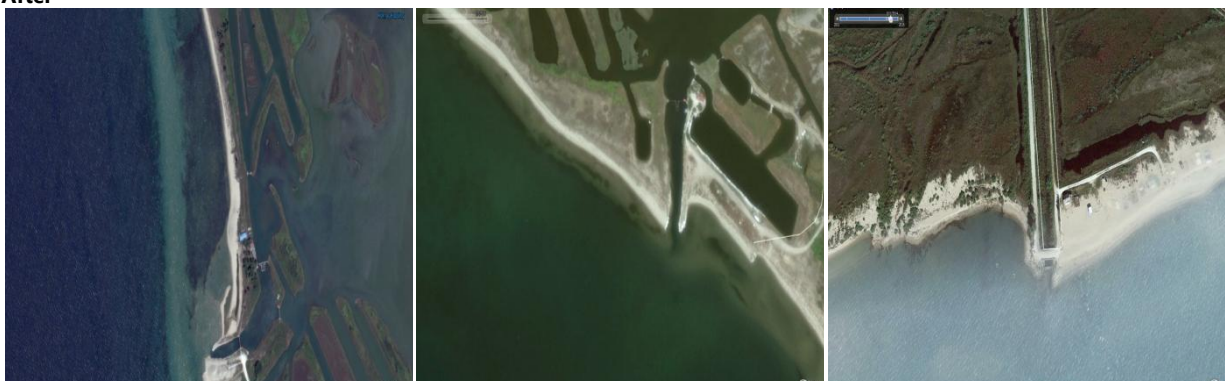
The results partly reveal significant opportunities for tourism development in the area, mainly in the field of nature/ecotourism, but the respective data is considerably limited in order to fully assess the dynamics of tourism development at the destination.

Special attention should be given in recording and monitoring the key assets for the development of ecotourism in the area (threatened sites, endangered and endemic species) as well as monitoring the actual implementation of tourism and environmental plans and policies.

Before



After

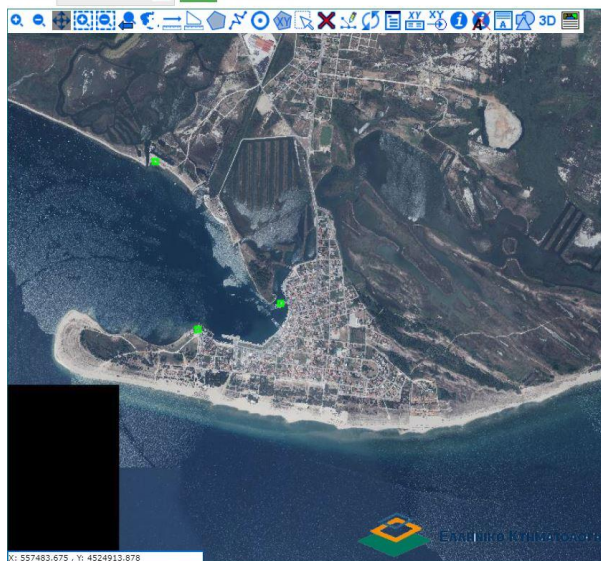


The effects of coastal erosion in Keramoti/Thasos pilot area

During the project, autopsies were carried out at specific, under pressure areas, indicated by stakeholders (e.g. Nestos Municipality), in order to document the pressure on the coastal front of the pilot area, in particular in the coastal zone from the eastern part of Nestos Delta to the west of Keramoti settlement at the point where the productive activities of fish farms develop. Photographic and satellite material is shown below.

ΥΠΟΒΑΘΡΟ: 2015 - 2016 (στο 50 % ΤΕΛΟΣ) ΚΑΙΜΑΚΑ: 20000

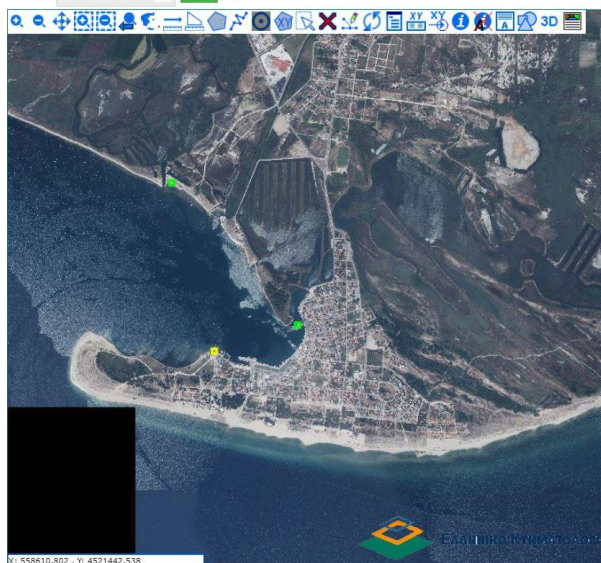
ΥΠΟΒΑΘΡΟ: 1945 - 1960



Keramoti (2015/ 1945)

ΥΠΟΒΑΘΡΟ: 2015 - 2016 (στο 50 % ΤΕΛΟΣ) ΚΑΙΜΑΚΑ: 20000

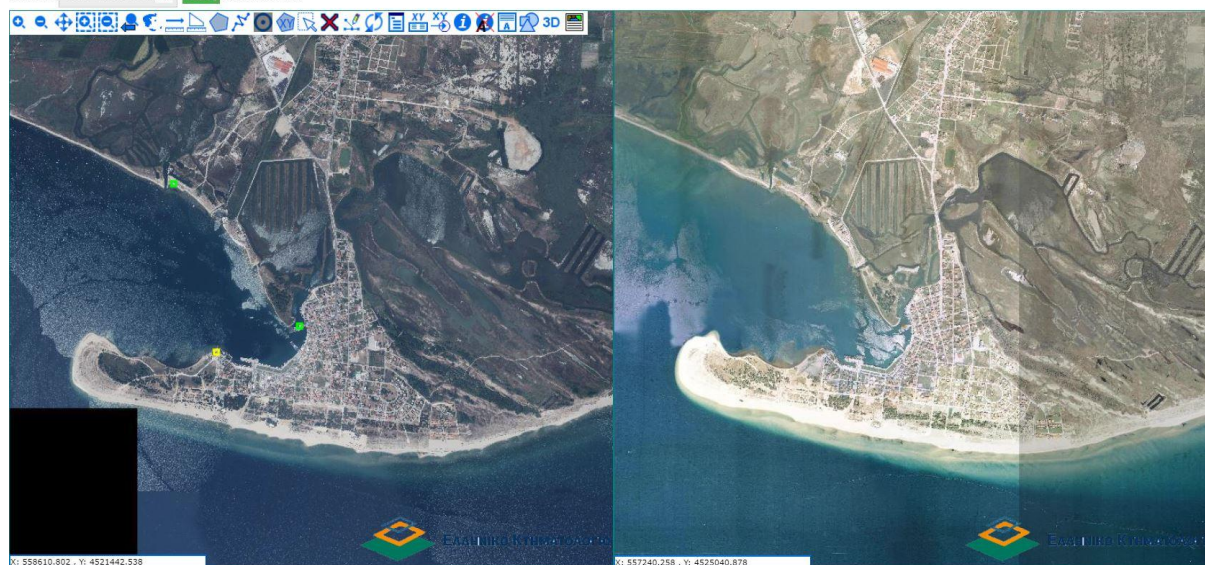
ΥΠΟΒΑΘΡΟ: 2007 - 2009



Keramoti (2015/ 2007)

ΥΠΟΒΑΘΡΟ: 2015 - 2016(στο 50%) ΤΕΛΟΣ ΚΑΙΜΑΚΑ: 20000

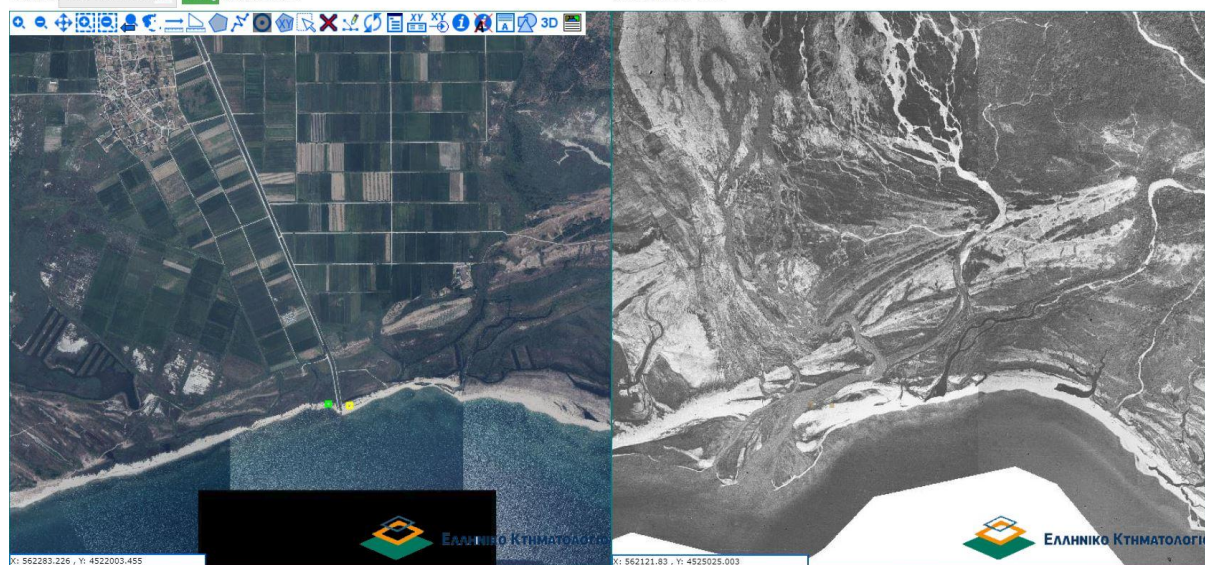
ΥΠΟΒΑΘΡΟ: 2007 - 2009



Keramoti (2015/ 2007)

ΥΠΟΒΑΘΡΟ: 2015 - 2016(στο 50%) ΤΕΛΟΣ ΚΑΙΜΑΚΑ: 20000

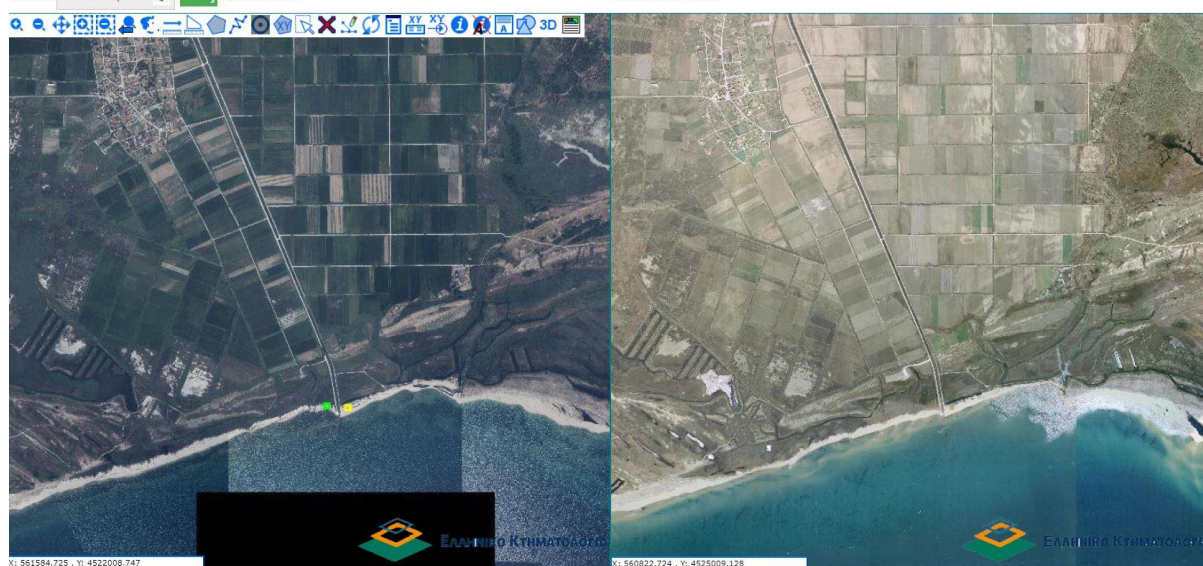
ΥΠΟΒΑΘΡΟ: 1945 - 1960



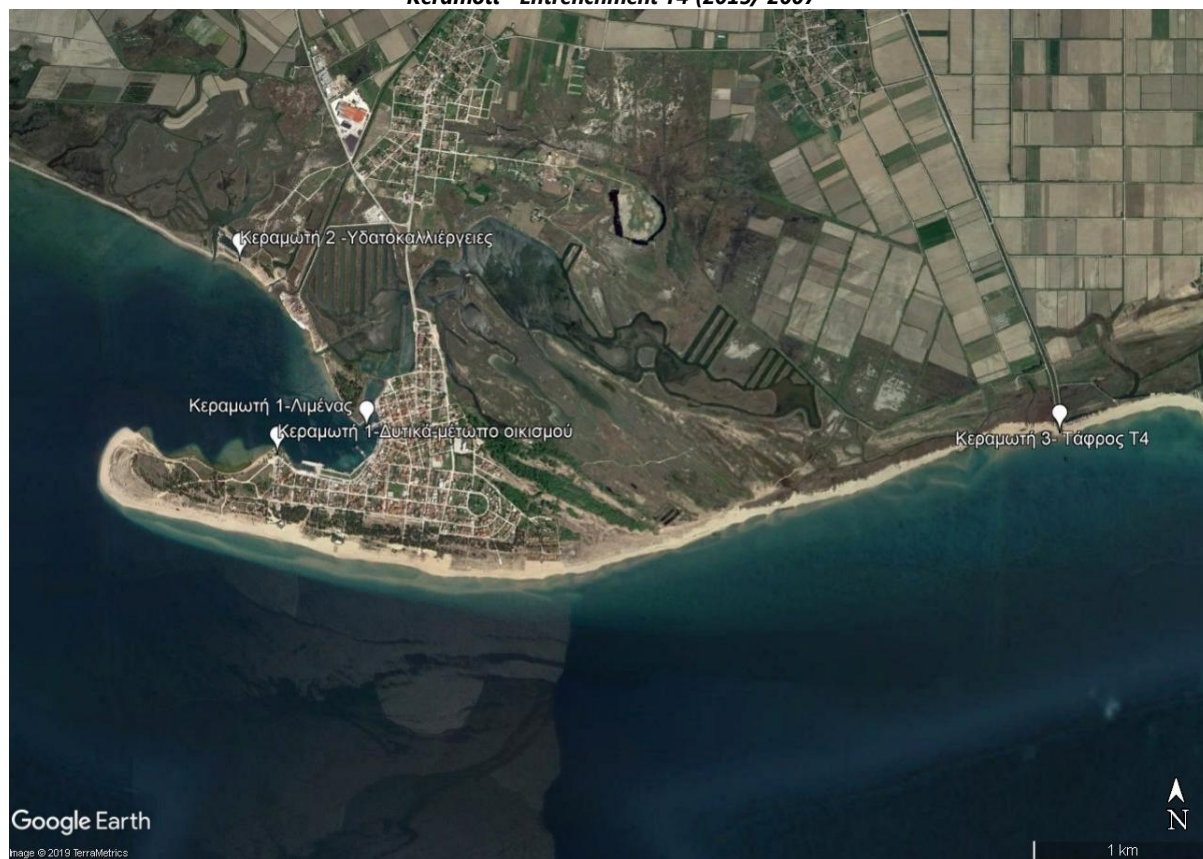
Keramoti - Entrenchment T4 (2015/ 1945)

ΠΡΟΒΑΘΡΟ: 2015 - 2016 (στο 50 % Τέλος ΚΑΤΗΜΑΚΑ: 20000

ΥΠΟΒΑΘΡΟ: 2007 - 2009



Keramoti - Entrenchment T4 (2015/ 2007



Keramoti – Google Earth



Keramoti-Port-City view



Keramoti-Port-City view



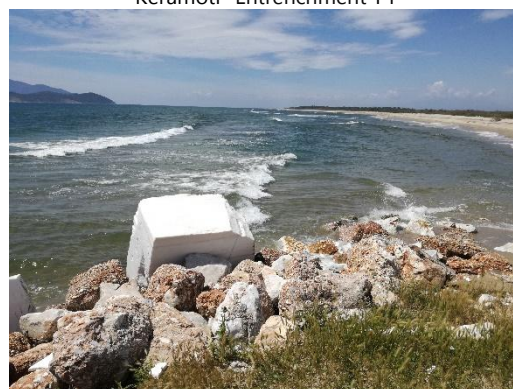
Keramoti-Fish farm



Keramoti- Entrenchment T4



Keramoti- Entrenchment T4



Keramoti- Entrenchment T4

Pictures of the under-pressure areas

Areas under pressure, as indicated by Municipality of Nestos, constitute the entire coastal front of the city, the area of fish production area west of the city and the area near the estuary of the Nestos River in the Entrenchment T4 floodplain, east of the city.

2.2 Methodology used at pilot area

REMTH followed the strategic planning process guidelines that were developed in the direction of strategic priorities identified by all stakeholders through a consultative process. In particular, the two tourism-driven strategic action plans for sustainable development of



coastal areas integrating the main principles and goals provided by the Integrated Coastal Zone Management recommendations and the Sustainable Coastal tourism approach guidelines where structured for the selected pilot areas clearly focusing on providing viable and bankable solutions. The CO-Evolve methodology proposed for the definition of strategic planning tourism based on these pilot areas was organized on 6 major phases, each of which includes key tasks and steps.

Besides the selection of core, destination and pilot area-specific indicators, REMTH applied the participatory process according to the Co-evolve trainings and seminars provided. The fine-tuning and tailoring of the proposed approach was mainly based on site-specificities (i.e. in some cases lack of quantitative data for specific percentage of shoreline subjected to erosion, etc.) and specificities related to the administrative and governance characteristics applied horizontally in Greece (i.e. although in Greece the democratic publicly-driven initiatives are very common, generally the top-down decision making approach is in effect).

2.3 Stakeholders involvement

To achieve a robust stakeholders' involvement one of the first steps was to set-up a process that will lead to the **identification of stakeholders**. This step was carried out in the early WP4 phases (even during the WP3 phase) and the update of the stakeholders pool is a continuous process as it is based on the potential of the beneficiaries to influence the selection of measures, the political, technical, scientific and social link with coastal activities and coastal erosion and with the need to include stakeholders from the quadruple helix in order to have a broad acceptance of the proposed measures. The stakeholders have been recorded in an easy-to-use database.

The relevance, the added value of the entities, as well as their adaptability to provide usable information and services relevant to the project were key criteria for their selection.

In more detail, the methodology used to map the local stakeholders for the Region of Eastern Macedonia and Thrace is presented below:

- Record and assess the discussions held at project meetings level concerning the criteria that the stakeholders should meet. Use of the project's template for stakeholder's data.
- Further study and analysis of the Application Form and deliverables prepared with particular emphasis on the objectives and expected results.
- Investigate and record local bodies (including their activities) related to the pilot actions of the project.
- Application of evaluation/assessment criteria (in accordance with the project objectives) for the selection of stakeholders.
- Stakeholders selection.



Currently, **approximately 120 stakeholders** have been included in the stakeholder's list (common for both pilot areas) mainly from the local/ regional context. The list is being constantly updated.

The stakeholders involved (indirectly or directly) with the sustainable coastal tourism management and integrated coastal zone management and also with the implementation of the action plan are as follows:



As regards the public consultation the **methodology followed for the participatory process** was designed before the organization of the 1st infoday session (5 October 2018) and was based on the approach presented during the 1st training course in Bologna (Co-Evolve project), while for the 2nd event (May 22, 2019) it was based on the methodology presented at the 2nd training seminar in Barcelona (Co-Evolve project). The 1st step included the identification of main stakeholders. Stakeholders that participated during the kick off pilot area meetings were included in the list and were invited as keynote speakers during the 1st infoday.

The preparatory work for the 1st (5th October 2018) and 2nd (22 May 2019) public consultation included all the preparatory work designed for the pilot areas and in particular the set-up of the **working team, the territorial scope**, the process that has led to the **identification of stakeholders**, the methodology foreseen for the **participatory process** as well as the construction of **the work plan** and the **definition of milestones**.

In particular, the stakeholders which have a stake at the development of the Action Plan and which also have the potential to influence policies, facilitate the selection and implementation of measures and ensure the sustainability and acceptance of specific measures include:

- **All competent regional authorities;**



- **The pilot area municipalities;**
- **Port Authorities;**
- **Universities;**
- **National Real Estate Service;**
- **Managing Bodies of Protected Areas;**
- **Other relevant bodies and actors.**

1st Infoday/ Public Consultation

The **1st Infoday was organized on 05 October 2018** in Komotini. All stakeholders were officially invited by the REMTH Governor. Approximately 40 stakeholders and members from the pilot areas and members of all stakeholders from the working team participated in the infoday which was formulated in **two sessions**.

Keynote speakers were the Regional Councillor in charge of the European Projects Mr. Mpoutos Ioannis and the project co-ordinator Ms Paraskevi Chouridou from REMTH who presented the current status and advancements of the CO-EVOLVE project activities in order to homogenize and share the knowledge among the participants. Ms Maria Chamitidou, deputy co-ordinator and supervisor of REMTH's pilot activities was the moderator of the infoday.

The 1st session was about the project themes and goals and was mainly formulated in a way that would allow the stakeholders from the pilot areas to present the current status of the pilot areas, to present the current pressures and identify possible threats and solutions. For this reason representatives from the Municipality of Alexandroupoli and from Municipality of Nestos analytically presented both pilot areas and openly discussed with the participants.

The **1st session** also included a presentation about synergies and in specific about the role of other regions, namely the Region of Crete in the sustainable development of the Coastal-Marine environment. This presentation fed the discussion about possible synergies between European Projects for the engagement of the local society and the coastal zone users. This discussion was moderated by a representative from Region of Crete.

Following, the University of Thessaly, Co-evolve project partner, presented the sustainability indicators system for the Monitoring and Assessment of Tourism in Coastal Areas and distributed a questionnaire tailored to the selected indicators for the pilot areas.

The **2nd session** of the infoday was formulated as a workshop for the sustainable development of Coastal and Maritime Tourism in the Pilot Areas.

The discussion was moderated by Ms Chamitidou and keynote speakers were professors from the Aristotle University of Thessaloniki and from the Democritus University of Thrace. The discussion was about **REMTH's Coastal Zone** mainly focusing on the coastal erosion and offshore structures and on prospects of economic growth in the blue economy context.

2nd Infoday/ Public Consultation

The **2nd Infoday was organized on 22 May 2019** in Komotini. All stakeholders were officially invited by the REMTH Governor. Approximately 25 stakeholders and main members of pilot areas working teams, such as Alexandroupolis Municipality, Port Authority of Alexandroupoli and competent directorates from the Region participated in the event which was formulated in **two sessions**.



The first session concerned the brief presentation of the project, the methodology for drawing up the action plans and the expected results of the consultation in order to determine the context and structure of the dialogue that would follow during the 2nd session. Main speakers of the 1st session were Ms Maria Chamitidou, deputy co-ordinator of the project, who welcomed the participants, facilitated the consultation and co-ordinated the discussion, and the project co-ordinator Ms Paraskevi Chouridou from REMTH who presented the current status and advancements of the CO-EVOLVE project activities in order to homogenize and share the knowledge among the participants. In the end of the 1st session the consultant of REMTH, Mr. Konstantinos Karampourniotis presented the pilot areas, the findings from the field surveys so far, as well as the expected results of the current consultation with a view to listing specific actions included in the action plan of the pilot areas.

As a result, the findings and results from the participatory process exclusively following a bottom-up approach were reflected in the two local site-specific action plans.

2.4 Tools applied

The proposed actions, namely those proposed in the two site-specific action plans, besides the fact that they are in line with the requirements and approach of the Co-evolve project as they result from the bottom-up participatory approach of the project, also help to solve critical issues and proposals already identified in the framework of the consultation and elaboration of the integrated program for REMTH coastal zone management (2012), and more specifically the Operational Plan for the Implementation of a Conservation Program and Sustainable Coastal Zone Development in the REMTH Region.

The participatory process as designed in the Barcelona training seminar was followed. Besides the selected project indicators, a set of further qualitative criteria/ indicators were identified and assessed per selected action indicating potentially positive/ negative/ neutral effects on the following categories:

- Biodiversity, flora, fauna protection
- Residential health and life improvement
- Soil protection and quality restoration
- Water resources protection and qualitative / quantitative improvement
- Climate and Air quality improvement
- Assets protection and enhancement
- Cultural heritage protection and enhancement
- Landscape improving
- Job opportunities
- Benefit Diffusion

The selected customized indicators from the Tourism Sustainability Toolkit are the following:

Core indicators

C.B1.1. Number of tourist nights per month

C.B2.1. Average length of stay of tourists (nights)

C.B3.1. Direct tourism employment as % of total employment in the destination

C.C1.1. Number of tourists/visitors per 100 residents



- C.D5.2. % of tourism enterprises taking actions to reduce water consumption
- C.D6.2. % of tourism enterprises that take actions to reduce energy consumption
- C.D6.3. % of annual amount of energy consumed from renewable sources (Mwh) compared to overall energy consumption at destination level per year

Destination Indicators:

- Di.Beach/Maritime tourism
- Di.A4. Number of second homes per 100 homes in coastal zones*
- Di.B1. % of tourist infrastructure (hotels, other) located in coastal zones*
- Di.C2. % of beaches awarded the Blue Flag
- Di.D1. Existence of up to date tourism plans and policies (YES/NO)
- Di.D2. Existence of a land use or development plan (YES/NO)

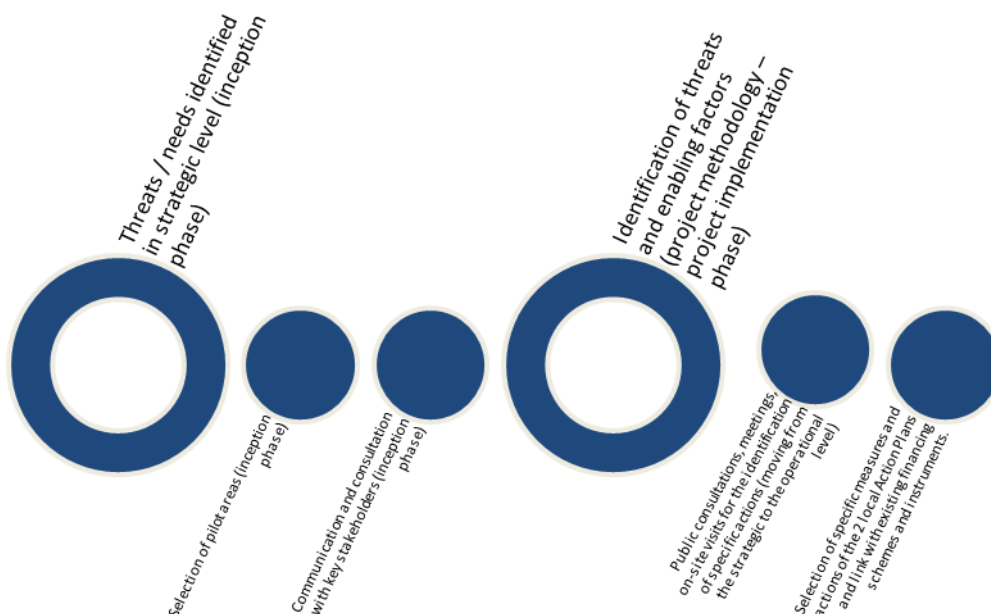
Pilot area-specific indicators

- P.A1.2. % shoreline subjected to erosion
- P.A1.6. Coastal flooding events per year(number)
- P.A5.1. Total use of water by tourism sector (Tourism as a % of all users)
- P.B1.1. Existence of a coastal planning management system
- P.B1.2. Length of protected and defended coastline (km)

However, the ultimate key design tool of the proposed bottom-up driven measures that were included in the action plan was the availability of funds and their bankability. All proposed measures were concretely linked with existing national or EU funds and can be potentially funded either at regional or municipal level. The main funding tool for the direct implementation of the proposed actions is the Eastern Macedonia and Thrace R.O.P and in particular actions under Priority Axis 2. The analysis has shown that there are relative investment priorities, but also a budget available to finance them.

2.5 Proposals of solutions

The participatory process and the results of the 1st and 2nd infoday held in Komotini facilitated the definition of common problems and shared vision for the pilot areas. Those results and proposals are an integral part of the measures identified and the action/measures proposed in the action plans. The actions described are inextricably linked to existing financial instruments with the aim to strengthen the sustainability of the measures and the partial exploitation of the action plans. The proposed actions concern the coastal front of the selected pilot areas (Alexandroupoli/Makri and Keramoti/Thasos). In operational context, the selected actions - included in the action plan – is an outcome of public consultation aiming to maximize the commitment of the stakeholders involved in their implementation and to create a sense of ownership of the proposed actions, and therefore the effort to implement them. In summary, the steps taken until the selection of the specific actions are as follows:



In summary, the steps taken up to the final selection of actions and measures for the regional sustainable tourism development, within the needs and targeting of the project, included initially the visualization of the relative regional threats / needs at strategic level - as presented above - before the start of the project. This analysis led to the selection of the pilot area that was the benchmark for further risk / threat / needs analysis in the area.

Thus, even before the start of the project, communication and consultation with the stakeholders was carried out and relevant problems were recorded this time, taking into account the views of the immediate stakeholders to confirm the need and to support the preparation of the local action plan. At the beginning of the project, threat and enabling factors / index inventories were systematized following a specific methodology defined by it (Work Package 3 of the Co-evolve project).

In this way, the relevant needs were ratified / reformed and on the basis of these needs, public consultations were held with all stakeholders invited, meetings and autopsies were held, with the aim of selecting concrete actions, the transition from strategic to operational and the selection of more actions / measures that are part of a wider local action plan.

The action plans for both sub-areas include some common and concrete actions (TABLE 1) as well as one action related to main characteristics and problems arise in each sub-area (TABLE 2). Concerning Alexandroupoli/Makri pilot area actions concerning the erosion problems where undertaken while for Keramoti/Thasos actions considering the protection of natural environment and biodiversity in the Natura regions are planned.



TABLE 1. Common Actions for both pilot areas

ACTION TITLE	SHORT DESCRIPTION
Integrated Management Study of Coastal Zone	The study will be a tool for identifying strategic axes, policy scenarios, decision-making and resource promotion to solve erosion problems and sustainable tourism development in the area.
Investments for the prevention and management of flood risks	The proposed action concerns flood protection interventions. It is a proposed action because specific flood protection projects, is a strategic priority for the tourism development.
Investments in coastal erosion protection measures	Coastal erosion problems, have a serious impact on the environment, the human activities, infrastructure and the further development of economic activities related to tourism.
Identification of the organizing authorities and the interaction of the stakeholders for the definition, adjustment and management of the coastal zone	The proposed action aims in the reduction of licensing requirements, the continuation of bottom-up information for resolving issues related to sustainable tourism development and the cooperation between regional and academic organizations.
Results capitalization for sustainable tourism development and coastal zone management	The proposed action aims at exploiting the results of existing projects and best practices defined from similar initiatives developed at local, regional, national and transnational levels in the wider Mediterranean region.

TABLE 2. Actions related to main characteristics and problems arise in each pilot area

ACTION TITLE	SHORT DESCRIPTION
Establishment of a permanent Erosion Monitoring/ Measuring Mechanism inside and outside the urban area (at the Port Authority of Alexandroupolis, covering the coastal front of the study area)	The proposed action results from the need to collect primary data for the study of the coastal erosion mechanisms in the pilot area of Alexandroupoli
Support of Protected Areas Management Bodies for the management of natural environment and biodiversity in the Natura regions of the Region of Eastern Macedonia and Thrace	The action concerns the support of the Protected Areas Management Bodies (NPPs) responsible for the Natura designated areas of REMTH.



Chapter 3 – Replicable tools and methods

3.1 Positive experiences with a replication potential

The main common problem identified before the desing and drafting of activities foreseen was the lack of funding. Concerning the action plans for the pilot areas, except for the technical description of the actions the funding tools and financing methods are also included and described. The main tool for funding is the Regional Operation Programme (ROP). The realistic planning as well as financing availability ensure feasibility. Furthermore, the ROP is also available as funding tool also for other Municipalities and Regions in national (and european level) given that the governance and adminstrative set-up of ROPs is similar in all EU countries. In this respect, the actions described can also be replicable in other local authorities with same problems. This fact ensures a strong potential and high possibility to replicate actions in other areas. The actions plans described for Alexandroupoli/Makri and Keramoti/Thasos can become a guide for other local authorities as far as the technical description of actions but also the financing instruments offering a complete tool for the implementation of the described activities.

Furthermore, the targeted and careful planning before the implementation of the actions led to the correct identification and involvement of key stakeholders. Thus, the participation and consultation procedure defined the main problems while the productive dialogue ensured sustainable measurements. The strong participation of key stakeholders also had a very positive impact on project outputs. Another positive experience derived during project implementation was the continuous cooperation and successful coordination of different actors. In this respect transferability of CO-EVOLVE experience, with lessons learnt and good practices, to other local and regional authorities as well as tourist operators and other actors is possible.

Concerning transboundary scale, the Action plans described can become a useful tool and map for foreign countries and areas with similar characteristics and problems. The financing tools foreseen for Greece are also contents in foreign financing schemes. The funding tools described can be used to identify possible instruments in country level budgets or, if not available, to foresee them in national financing instruments. Furthermore, some actions included in the action plan can be financed by EU Programs (interregional, transnational, cross-border, etc.), Neighbouring Mediterranean Partnerships (Interreg Mediterranean, ENI MED), EU thematic programs (e.g. Horizon2020, LIFE, etc.), which can become a strong motivation for further transboundary cooperation and knowledge transfer.



3.2 Negative experiences to be avoided

During the project course and mainly during the participatory processes, a set of weaknesses/ threats which however, can be easily turned to opportunities were identified:

- Lack of exploitation of results of **pilot-demonstration-research projects that will result in beneficial and tangible results** for end-users (e.g. integration of mature projects in invitations by the Regional Special Operational Programs Management Services).
- Lack of exploitation of **data to identify local problems and to select mitigation measures** (e.g. drawing up simple and exploitable data and tools through the transformation of knowledge and primary data of projects and studies).
- Need to **reduce bureaucratic licensing requirements** for coastal zone erosion mitigation projects.
- Need to **strengthen the capacity of the competent authorities**.
- Need to clearly define the **regional priorities for erosion** and **selection / identification of high-risk areas** (synergy between technical services and political leaders).
- Need to continue the **bottom-up information feed to resolve issues related to coastal erosion and sustainable tourism** development in the Region.
- Need to promote **co-operation between regional and academic bodies** to solve the erosion problems of the area (exploitation of existing knowledge and available).

Further, technical application and infrastructure projects always suffer from the lack of data and mature studies. Studies necessary to build infrastructure or the acquisition of permits for technical interventions always delay implementation. Proper preparation and planning before a project's launch can reduce this negative impact; however, the latter are always considered as difficult to assess threats.

Another negative experience is the complex bureaucratic stipulations and the frequent changes in regulatory framework. This fact can be reduced by the ministries and public services involved. During the last years a significant effort concerning reduction of bureaucratic and other procedures is observed. It is estimated that the time needed for permission approval and construction of works will be eventually reduced. Finally, legislation for the implementation of coastal protection projects is multifarious and time-consuming and needs modernization and improvement.

The gap concerning financial instruments for specific actions can also become a negative factor for the implementation of plans. The complexity of the available funding tools concerning description as well as the large number of supporting documents required prevent stakeholders from seeking and participating in financing processes. Furthermore, even if the procedure is easy for some interested parties the long time for approval of the proposals as well as the long time for payment procedures is a negative factor.



Finally, lack of technology, knowledge transfer and communication between universities and local authorities is another obstacle which must be taken into account. Although universities and research institutions are among the best in Europe there is no knowledge and technology transfer to the municipalities and local authorities related to tourism and environmental protection sector. Most of research activities remain in experimental level and pilot scale. There are no efforts to link scientific achievements and knowledge to commercial and industry level. Moreover, academic and scientific institutions should promote training and knowledge transfer to local authorities, chambers and directorates.



Chapter 4 – Actual replication/transfer

The main objective of the replicability plan is to transfer knowledge and actions of the CO-EVOLVE Project to other territories after the testing phase, and therefore to gain the commitment of other municipalities in replicating the action plan and methodology of the CO-EVOLVE project through a specific Protocol (MoU). The transferability plan will try to be concrete and direct. The success of replicability phase depends on understanding the most important factors needed to ensure the durability and the sustainability of the Action plan activities described.

The main success factors for sustainability and transferability of results are as follows:

- Development of cooperation and networks with other cities and stakeholders both national and foreign. A strong relationship with related stakeholders or cities can emerge new opportunities and establish the possibility of participation in other EU projects with same objectives.
- Results adoption in local or regional level as part of a sustainable strategy maintains and strengthens the activities planned and developed through the CO-EVOLVE Project.
- Producing specific results and outcomes ready to be capitalized, offering not only the methodology but the tools and specific elements ready to be adapted and implemented.
- Finding new funding, through sponsors, public or private funding sources (EU, national or regional funding) and convince municipalities and stakeholders that foreseen actions and plans are investments and not expenses.
- The adoption of project results by relevant carriers and institutions related to thematic stakeholders strengthens the project outcome.

The transferability plan as well as the Action Plan, involves public and private agents. The main target of this process are the municipalities, mainly coastal cities, although inland municipalities with part of its territory in the coast or adjacent to a coastal massive destination could also be included if showing a strong interest. Without the active involvement of the local government, the implementation of the CO-EVOLVE outputs will not be completely effective.

Without the right stakeholders involved, the implementation of the model will not be possible. Although cities are the main objective, there are economic actors representing tourist services who might have a special interest and involvement. The main stakeholders involved for the implementation of successful transferability plan are:

- **Local authorities (Municipalities and Regions)**, involving staff and decision makers linked to the tourism, environmental or economic development areas, including tourism information offices. No matter up to which implementation phase the



municipality is interested to participate, the commitment of the local authority is essential. Association or network of municipalities can be a key stakeholder to reach interested cities.

- Management bodies, environmental associations and agencies, NGOs.**
 Management bodies can undertake the collection, classification and processing of environmental data as well as the establishment and operation of relevant databases. They can contribute in the development of studies and surveys as well as the execution of technical or other works necessary for the protection, conservation, restoration and promotion of protected objects within their area of responsibility. NGOs can be useful to gather specific information and data or to participate and support the municipality and the suppliers in public communication and training initiatives.
- Tourism Service Providers,** interested directly or through their associations. It is the core stakeholder to support and promote overall local tourism as the one dealing directly with the tourists and visitors. This group can also include service providers for accommodation (hotels, camping sites, B&B, ...), restaurants, cafes, local products suppliers and beach resources and services. Tourism service providers are responsible for the initiatives to strategically strengthen the local tourism product and thus the local economy. They also intervene to remove any obstacles or disincentives to create a friendly economic environment for the related businesses.
- Universities, Scientific Institutions or Private Companies,** can undertake the preparation or implementation of national or European programs and actions related to the development of the strategy agreed. These elements are crucial for the funding and durability of actions foreseen.

After recognizing the main stakeholders and potential municipalities and areas to start transferring the next step is the organization of a transferability event to start raising awareness on the initiative and to explain the aim of the Action plan and how to implement it. The partners involved in transferability in each territory will be the ones to guide the new stakeholders acting as a bridge between them and the CO-EVOLVE project platform, tools and partners.

Transferring Partners can support the signatories of the protocol with several actions aimed at motivating them to implement the CO-EVOLVE project outcomes in a larger scale. Attention should be given that the actions concern the transferring and not the implementation phase. Thus, the project will not be able to support stakeholders & suppliers through training, help desk, etc. but it offers a support to start up and facilitate all available tools, which explain in detail how to implement the model.

The partners involved in transferring phase can offer the following support:

- After identifying the stakeholders and once they have signed the protocol of interest, a transferring event will be organized in the targeted area. All stakeholders identified



should be invited as well as potential suppliers to engage. This will be an opportunity to raise awareness so the stakeholder's motivation to reach media is highly recommended.

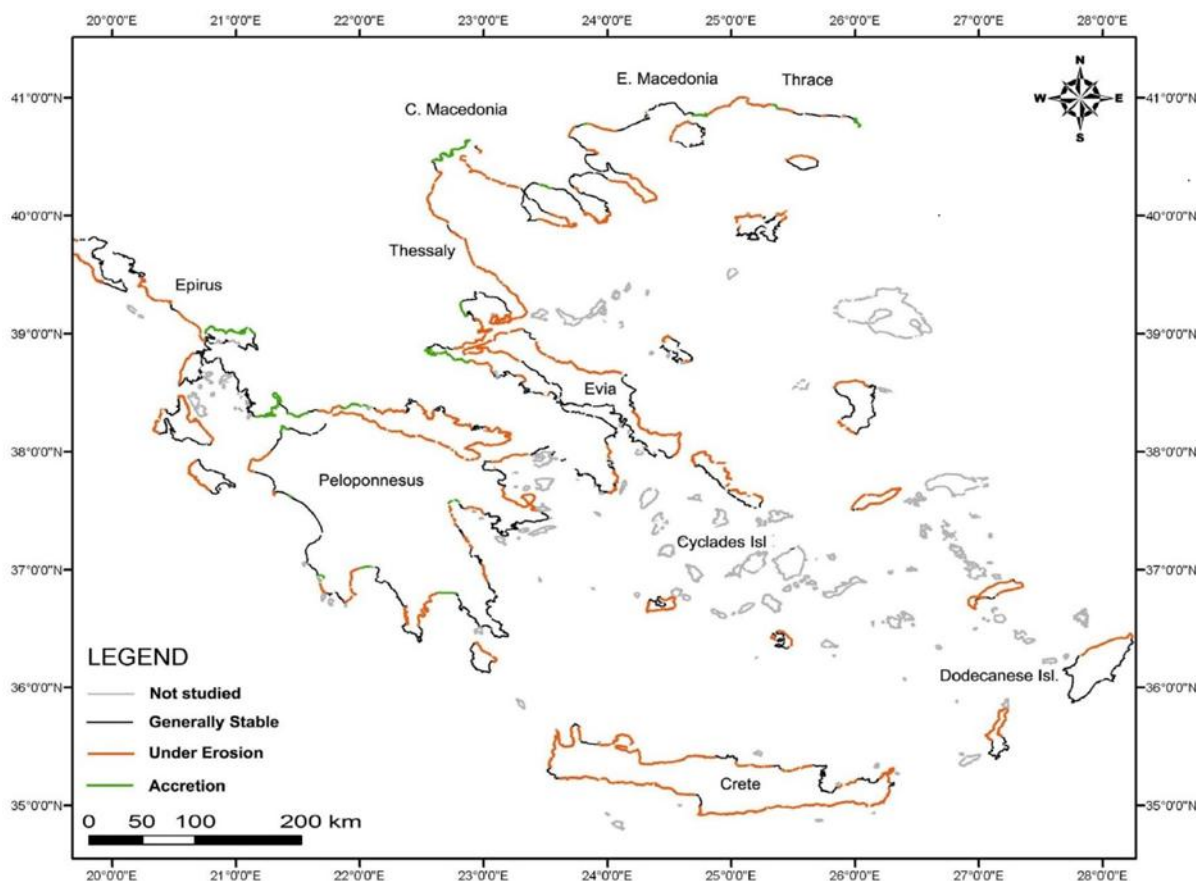
- The Transferring Partner will provide the stakeholders and suppliers involved with basic material produced (at least: posters, leaflets, brochures, factsheets). They will have to provide stakeholders and suppliers interested, with all the guidelines to implement the actions.

4.1 Replication at the local level

The Greek coastline can be geomorphologically classified, according to the EuroSION program (2001), into four main types of coast:

- Deltaic coastline (6%). Deltaic coasts are characterized by the deposition of loose sediments at low altitudes and are highly vulnerable with high displacements depending on the dynamic erosion / deposition equilibrium
- Neogene and Quaternary soft sediment shores (36%). These include coastal zones of either short length (200-1000m) separated by rocky promontories or extended beaches (> 1km) as well as coastal marine shorelines (eg barriers, spits) including artificially enriched beaches. These coasts are of medium vulnerability and in case of rising sea levels strong corrosion effects are possible
- Rocky shores of hard material (44%). The rocky shores are of low vulnerability
- Soft rock formations often containing small (<200m) pocket beaches (14%).

The total coastline of Greece is 16,000 km, about 7,000 km are sandy beaches. River deltas, lagoons and other coastal ecosystems are the most vulnerable to rising sea levels. These phenomena are expected to intensify in the coming years, because the causes are simply exacerbated. The percentage of beaches currently experiencing erosion problems is 28.6% (Alexandrakis et.al 2013).



Picture 1 Greek Coastline characteristics

**source: Alexandrakis et.al 2013 and own processing*

According to the above picture the most vulnerable to erosion phenomena areas in Greece, except East Macedonia and Thrace, are Crete, North Peloponnese and Thessaly. In this respect, the action plans derived from the CO-EVOLVE project concerning REMTH pilot areas have a great potential for transferability and replicability both within the Region or in other areas in Greece. As described before the Action plans include both the description of actions and the funding tools for the implementation. The main funding tool as described is the ROP. The Managing Authority of the ROP is body related with REMTH and under the supervision of the Regional Governor. This fact enhances replicability actions since within the cooperation of REMTH and Managing Authority possible financial schemes will be included if missing or updated if already exist in the ROP. Further areas of the Region can benefit from these schemes and replicate all or some of the actions related to their needs and described in the Action Plans. Furthermore, since ROP is a national programme available also in other regions these priorities and schemes can also be included in their planning.

To enhance the potential of transferring knowledge and experience earned **a meeting between staff of REMTH and representatives of ROP Managing Authority will be held.** The purpose of the meeting will be the analysis of the Action Plan and the potential to launch

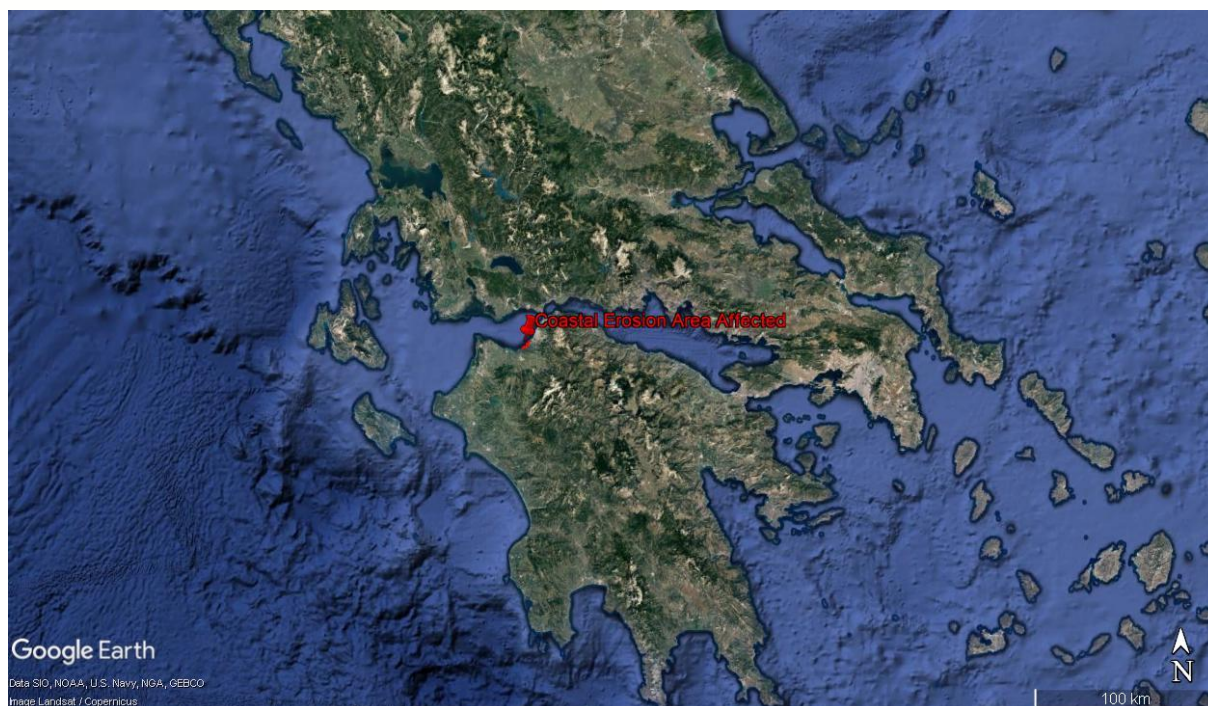


similar calls for proposals, address the needs of the areas as results from a bottom-up approach, transfer actions in other local authorities, the discussion of possible missing funding tools to finance the actions described in the Action Plans and detection of potential areas to replicate the actions developed. The objective is to transfer the results of the analysis and demonstration actions beyond the immediate territorial and administrative limits of the pilot areas. In order to extend the local impact of the project, efforts will be invested in strengthening cooperation within municipalities with same problems and needs, as well as between regions. The local and regional public authorities will be the main target groups. Apart from the financial instruments recognition and extending them to other municipalities within and outside the region another step for the successful implementation of the transferability plan is the mapping of other potential municipalities & areas to start transferring.

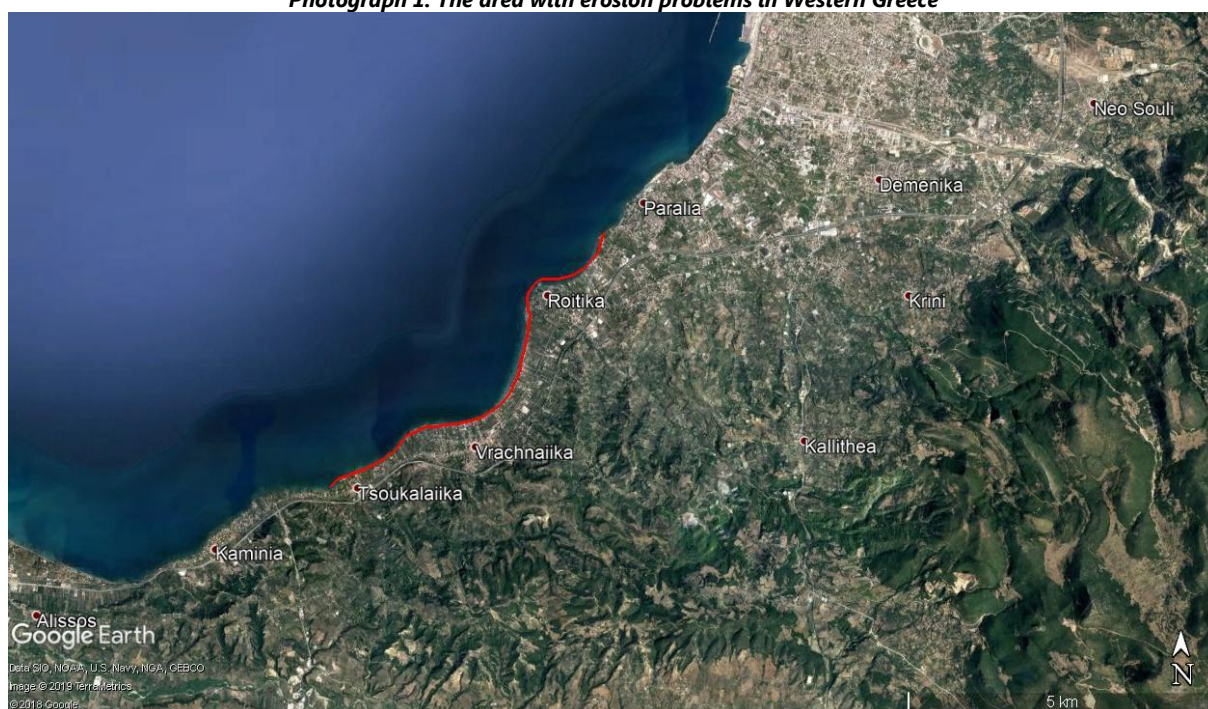
In particular, one of the vulnerable areas to erosion in Greece is Region of Western Greece and more specifically the coastline of West Achaia. According to Region of Western Greece, coastal areas of western Greece are affected by widespread coastal erosion, both due to natural causes, stormy winds, high waves and anthropogenic activities such as urban expansion, tourism development and coastal infrastructure. Thus, Region of Western Greece is a potential local authority to cooperate and discuss the outputs of project CO-EVOLVE and transfer knowledge and actions described.

In the future, the Region of East Macedonia and Thrace can get in contact and arrange a meeting with representatives of Western Greece Region in order to present the results and outcomes of project COEVOLVE and transfer knowledge and experiences earned. During the meeting discussions can will be held concerning the specific problems occurred in the area as well as the solutions including possible financial tools for their implementation. The MoU provided by the project can be the basis of cooperation between REMTH and the area of replication.

The area in Region of Western Greece is shown in the following pictures. The potential area for transferability actions is located west of Patras city close to Brachnaiika - Tsoukalaiika – Monodendri-Niforaiika – Kalamaki- Alissos cities as depicted in photo no.1 and no.2.



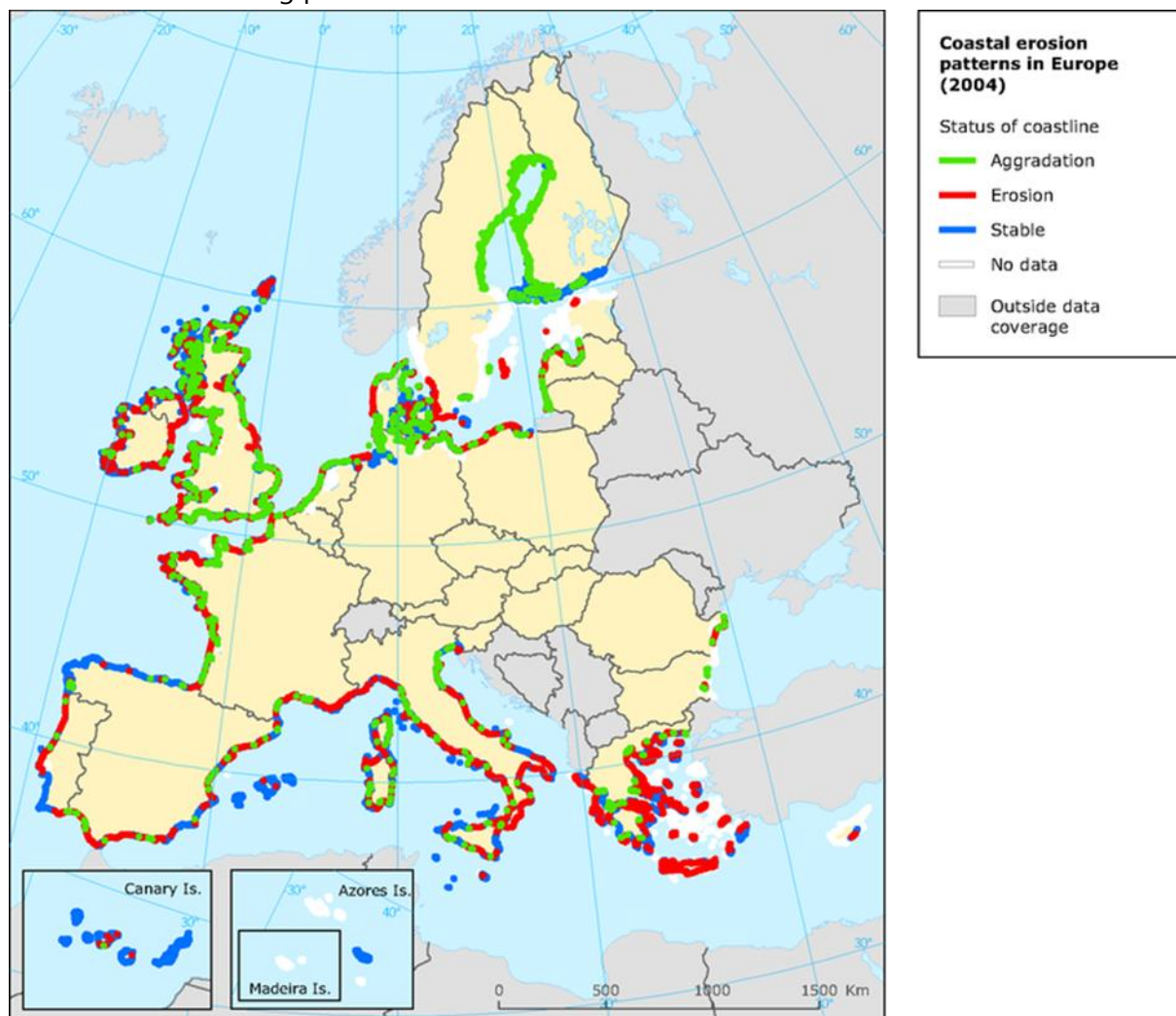
Photograph 1. The area with erosion problems in Western Greece



Photograph 2. The coastline area affected by erosion problems in Western Greece

4.2 Replication at the regional level in a transboundary context

According to report by the European Commission's Program Eurosion, both the Mediterranean and the inland seas are more affected by erosion mechanisms, with significant parts of them already facing erosion problems. The coastal erosion patterns along Europe is shown in the following picture.



Picture 2 Coastal erosion in European Countries

*source: <https://www.eea.europa.eu/>

In Mediterranean level according to above findings, erosion mostly affects Italy as well as the island of Cyprus and especially the southeast coastline. Cyprus is the third larger island in the Mediterranean and is located in south-eastern basin of the Mediterranean Sea. The total Cypriot coastline measures 735 km. Erosion poses the greatest threat to the coastal zones of Cyprus. About 40% of the coastline is currently subject to erosion, assumed to be caused by a combination of human activities as well as natural events such as extreme wind waves.

Particularly vulnerable to coastal erosion are the areas of Limassol and Larnaca as depicted in photograph no.3.



Photograph 3. The coastline area affected by erosion problems in Cyprus

Erosion rates have increased in Cyprus since the 1960s, mainly as a result of uncontrolled urbanization and various human activities in the coastal zone, including reservoir building, river sand mining, port/coastal protection structures, and dredging works. Hard engineering structures that have been applied to stabilize the coast include groins, dikes and seawalls. Beach nourishments have only been used occasionally, more associated with recreational rather than protection purposes. One of the main problems is the shortage of appropriate sizes and amounts of sand.

In Cyprus, coastal protection as well as financing is mainly a national matter. The main institutions involved are the Ministry of Communications and Works, Ministry of the interior, Ministry of Agriculture, Natural Resources and Environment as well as Municipalities. The Coastal Section of the Ministry of Communications and Works is the main actor involved in coastal defence. Permission for coastal defence works needs to be obtained from different governmental departments as well as local authorities. The Coastal Section of the Public Works Department, Ministry of Communications and Works, is the agency responsible to plan, design and survey coastal protection and improvement works. Before any protection works can be carried out, permission needs to be obtained by the District Officers, Ministry of the Interior, who are the owners of the coastal zone. Such a permit is subject to an environmental impact assessment to be approved by a Technical Environmental Committee, subordinate to the Environment Service of the Ministry of Agriculture, Natural Resources and



Environment. Several governmental departments are represented in this Committee as well as delegates of the ecological and environmental NGOs of Cyprus.

At sub-national level the municipalities are involved. Municipalities have their own technical department responsible for issuing town planning permits in their area. However, for coastal structures they also need to obtain the permission of the District Officer, Ministry of the Interior. Financing of the coastal protection structures is shared between the government and the municipalities.

In this respect Region of East Macedonia and Thrace can potentially get in contact with representatives of Ministry of Communications and Works as well as representatives of Larnaca and Limassol Municipalities, to exchange experience as well as knowledge transfer concerning actions held to tackle problems from erosion phenomena. The MoU provided by the project can be the basis of cooperation between REMTH and the representatives. The main contents of the discussions can be:

- Identification of problems concerning tourism development and coastline erosion problems;
- Transfer major findings, conclusions and outputs;
- Identification of stakeholders involved;
- Methods, processes and tools used to solve problems and improvement of situation;
- Equipment and infrastructure development;
- Instruments, procedures, relevant methodologies for sustainable tourism development;
- Financial instruments used for the implementation of actions.



Conclusion

The CO-EVOLVE Project provides an integrated analysis at Mediterranean scale of the main Threats and Enabling Factors for a sustainable and ecosystem-based coastal tourism development, informing the development and implementation of sound policies and the establishment of effective governance systems. CO-EVOLVE recognizes as a key challenge for sustainable coastal and maritime tourism development the strengthening of cooperation among Regions and the joint development and transferring of approaches, tools, guidelines and best practices. The actions envisaged are systemic, ecosystem-based and dynamic, taking into account future scenarios of natural (i.e. climate change) and anthropogenic changes.

Concerning REMTH two pilot areas were studied. The needs were preliminary identified and ratified based on public consultations, meetings and autopsies in the pilot areas. The results and outcome of the meetings, discussions with stakeholders and on-site visits led to the design of two action plans, one for each pilot area: Alexandroupoli/Makri and Thasos/Keramoti.

The selected measures/actions included in the action plan, is the outcome of a bottom-up approach, are realistic and are concretely linked with financial schemes and in most cases with available funds that in due time could facilitate their implementation (i.e. through the Regional Operational Programme). The actions are described in detail and in most cases budget is available (or similar calls had been launched in the past). The ultimate goal of the actions is to ensure feasibility (i.e. realistic planning and budget availability for financing), confirm sustainability (i.e. ensuring ownership by engaging the competent stakeholders/bodies for implementation) and facilitate replicability/transferability (i.e. ambitious but high added-value measures).

The Action Plan for sustainable tourism development is developed according to the ICZM and MSP principles, which ensures the sustainable development of the tourism sector.

Linking actions with financing tools with EU origin (i.e. ROPs and EU-funded initiatives) gives a strong potential for replicability and transferability actions to other areas both in national and transboundary level. The careful planning of actions included as well as the experiences earned through public consultations can become guide for other local authorities to adopt the methodology and actions described. Furthermore, the selection of the pilot areas was targeted and not accidental. Both areas suffer from erosion problems and also include in their coverage NATURA protected sites; however, the one is an emerging touristic destination and the other has already reached a high touristic peak/status. These characteristics are often met in several Mediterranean and other countries. This fact gives the potential to related partners of the project to replicate and transfer knowledge and findings in several other countries and territories.



To ensure the transferability and replicability a meeting with Managing Authority (MA) of ROP which is the main tool for financing the described actions in the Action Plan is foreseen. The main purpose of this meeting is to analyse the Action Plan to the Ma representatives and discuss the possibility to transfer project's outputs to other local authorities through specific funding tools. To enhance the replicability of the CO-EVOLVE findings REMTH has also identified another Regional Unit in Greece (Region of Western Greece) which faces problems from erosion phenomena, as well as another Mediterranean country, namely Cyprus, having similar coastal protection and touristic needs.



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