



BEACHMED – e

Strategic management of beach protection measures for the sustainable development of the Mediterranean coastal areas

INTERREG IIIC Sud

Proposed Implementation of Measure 3.2

“ICZM-MED: Concerted actions, tools and criteria for the Integrated Coastal Zone Management of the Mediterranean”

“Actions concertées, outils et critères pour la mise en oeuvre de la Gestion Intégrée des Zones Côtières (GIZC) Méditerranéennes”

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ICZM: Integrated Coastal Zone Management Introduction

- ICZM is a continuous process with the general aim of implementing sustainable development and maintaining diversity in Coastal Zones.
- The reference document within the EU is Recommendation 2002/413/CE issued by the European Parliament and the European Council and, within the Barcelona Convention, which has recently been initiated by PAP/RAC on the protocol for integrated management of Mediterranean coastal areas.
- Many parts of the Mediterranean coast in Europe are now protected or soon will be, thanks to ICZM projects, which however have been carried out at a local district level that therefore need a system that ensures a coordinated approach on a regional level.
- The **objectives** of this sub-project is the collection of existing studies in this sector in order to create a structure for integrated coastal zone management on a regional level and to select one pilot site in each region, where different approaches to ICZM will be applied.

PARTNERS **presentation**



P1- NAGREF - Fisheries Research Institute

- Belongs to the Hellenic National Agricultural Research Foundation.
- Situated at Kavala, Region of East Macedonia and Thrace in a site of 41000 m², with 4 main buildings of 3500 m².
- Personnel: 48 (7 researchers, 33 scientists, 8 administration).
- **Research subjects:** Fish biology, fisheries, fish processing, aquaculture, biotechnology, oceanography, marine ecology, coastal zone management.
- Coastal research vessel “Alkyoni” & fully equipped diving team.
- **Contact persons:** Dr. Manos Koutrakis, Dr. George Sylaios



P2 – CIRSA: Centro Interdipartimentale di Ricerca per le Scienze Ambientali

- CIRSA is a research center for environmental sciences located in Ravenna, **Region Emilia-Romagna**
- Its contribution will be mainly on obtaining data for the Cost Benefit Analysis (CBA), and of finding out whether beach visitors and sunbathing establishment managers may be willing to pay (through voluntary donations) for the beach defence from erosion.
- **Contact person: Prof. Silva Marzetti**, Univ. Bologna, Dep. of Environmental Economy



P3 – Litorale SPA

- **Litorale spa** regional agency was created to manage the “Programma Integrato degli Interventi” which was approved in 2003 by **Lazio Region** in order to develop the regional coastal area. Now it starts the third phase of the project.
- Litorale will contribute to the ICZM of the Lazio Region and formulate a framework for Cost Benefit Analysis (CBA), beach evaluation strategy and definition of the econometric model to assess rapidly the economic indicators for choosing the best coastal defence strategy.
- **Contact persons: Prof. Giuseppe Nascetti, Dr. Fulvio Cerfolli**



P4 – Dip. Di Ecologia e Sviluppo Economico Sostenibile UniTuscia (DECOS)

DECOS department is part of the Regional Commission on Integrated Coastal Zone Management since 2004 (**Region Lazio**). The Project is involving the selection of a pilot site to experiment an integrated strategy at local scale.

- DECOS is managing a new coastal oceanography and marine ecology laboratory funded in 2004,
- is planning a hatchery with a marine genetic centre to enhance fish stocks,
- is developing EU and national projects (i.e. on fish stock management, restoration of salines etc.)



Contact persons: Prof. Giuseppe Nascetti, Dr. Fulvio Cerfolli

P5 – Università degli Studi di Genova – Dipartimento per lo Studio del Territorio e delle Sue Risorse (DIP.TER.IS.)

- **DIPTERIS (Region Liguria)** was created to converge researchers from different backgrounds and disciplines, aiming to surmount the typical barriers of the disciplinary system and to influence policies in territorial management and planning.
- The activity of the team of Prof. Fabiano deal with topics related with ICZM, with particular attention to environmental quality assessment of coastal resources and to the application of the sustainability principle in coastal activities.
- **Contact persons: Prof. Mauro Fabiano, Maria Paola Moreno**



P6 – Landscape Natural and Cultural Heritage (ICCOPS)

ICCOPS (Region Liguria) , as NGO, has the observer status for the Mediterranean Action Plan of the United Nations Environment Programme (UNEP/MAP). It was established in 1992 with the aim of:

- Serving as a point of reference for groups and experts in coastal studies.
- Carrying out research projects in the field of coastal management.
- Fostering international networking and the discussion about current practices and future trends in coastal management.



ICCOPS activities consists of:

- scientific and technical consultancy/studies
- environmental and social analysis of coastal systems
- coastal landscape evaluation and planning

Contact person: Prof. Emmanuele Roccatagliata

P7 – Université de Montpellier 1

CEP/LASER

- Laboratoire des Sciences Economiques de Richter (LASER) is a research center in economics located at the University of Montpellier 1 (Languedoc-Roussillon Region).
- 12 full Professors and 14 Assistant Professors are currently part of the team and 39 PhD students are hosted.
- Centre d'Etudes de Projets (CEP) is a part of LASER.
- The objectives of the studies are: management of sustainable resources, financial and economic valuation methodologies, public policy analysis.
- For the past five years, CEP has been leading studies such as the economics of fisheries, human capital and education, local planning and development, and public policy evaluation.
- Contact persons: Dr. H el ene Rey-Valette, S ebastien Roussel



P8 – BRL

- Founded in 1955, as a Regional Development Company (a public private partnership controlled by the local governments of the **Languedoc-Roussillon Region**), BRL is now a group of companies that employs 700 people (500 in France), including :
 - **CNARBRL**, the parent company and group holding company.
 - **BRL Exploitation**, in charge of managing and operating large scale water production and distribution infrastructure in Languedoc-Roussillon: drinking water , irrigation water and industrial water, etc.
 - **BRL Ingénierie**, international consulting firm, working in areas related to water, the environment, land use development and assistance to developing countries in over 80 different countries.
 - **Contact person: Franck Bellet**

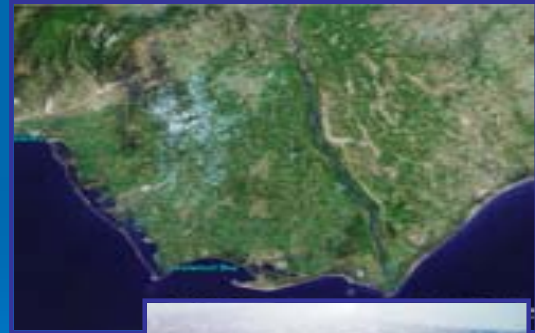


Pilot sites



P1 – Delta Nestos (GR-Region of East Macedonia & Thrace)

- The Nestos Delta is sited in the East side of the Kavala Gulf, which is a area with many problems related to beach erosion.
- The Nestos Delta is a protected area (National Park, Ramsar site, Natura 2000).
- Seven lagoons are situated in the coastline of the Delta.
- The uses of the coastal zone in the area are: agriculture, fisheries, aquaculture (lagoons, long line mussel culture) and tourism.



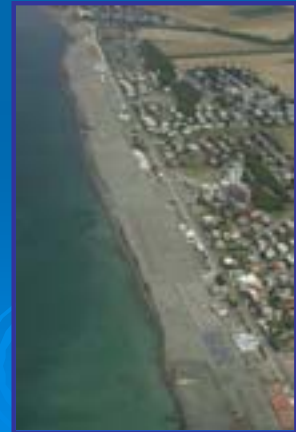
P2 – Riccione Southern beach (IT – Region Emilia Romagna)

- Riccione is on the coast of the Emilia-Romagna Region (Italy) on the North West Adriatic Sea.
- Its beach is under erosion, as shown in photograph 1.
- A beach defense project will be implemented, in order to maintain the beach as shown in photograph 2.



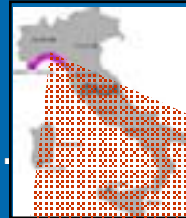
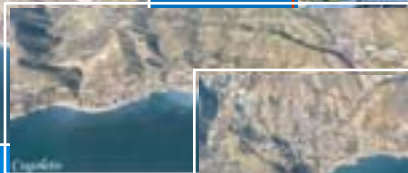
P3, P4 – Tarquinia beach (IT – Region Lazio)

- Tarquinia, located at the heart of Southern Etruria (in the past was the Etruscan capital) is a mediaeval township, an archaeological site of international fame with an intense cultural life.
- It rises 133 m above sea-level on a plateau from which it scenically overlooks the Marta River valley and the Tyrrhenian Sea.
- Its geographical location (90 km from Rome, 250 km from Florence and Pisa, 280 km from Naples) makes it a prime tourist resort.



P5, P6 – Ligurian coast (IT)

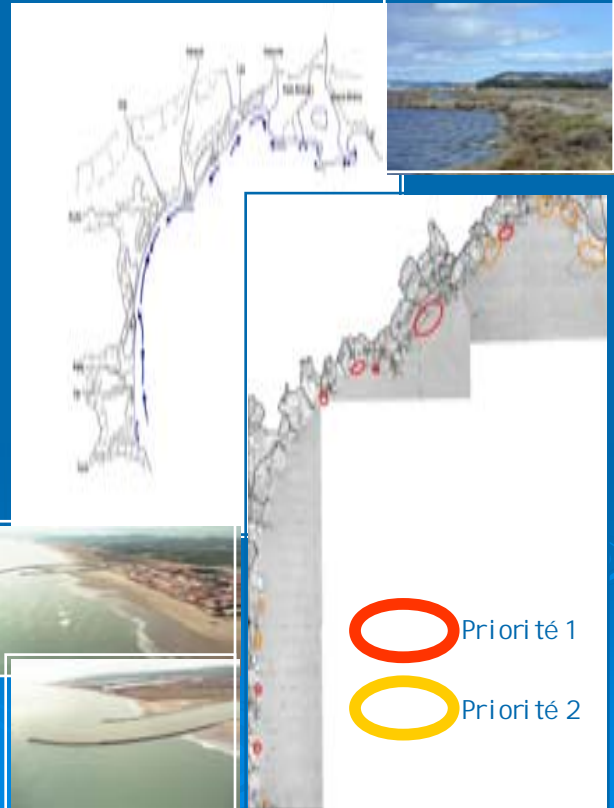
- Coastal area identified by a territorial district located between the cities of Genoa and Savona.
- Highly developed bathing tourist resorts.
- Dense concentration of human activities high physical anthropic pressure (“littoralisation”).



Riviera del Beigua

P7, P8 – Région Languedoc-Roussillon (FR)

- The pilot sites are located in “Région Languedoc-Roussillon” where the coastal zone is set to 220 km, mainly flat (70%), and the morphology provides a broad range of lido, lagoons, etc.
- The coastal zone is under a strong human pressure especially during the spring and the summer time with the tourists flow; activities include fisheries, recreational activities and different types of tourism.
- This project will focus on selected coastal sites, where future local planning depends on policies preventing from erosion phenomena, i.e.: “Golfe d’Aigues-Mortes; Lido de Frontignan à Villeneuve-lès-Maguelone; Lido Sète à Marseillan; Littoral de l’Orb; Littoral de l’Agly à Cap Leucate; Littoral du Tech à la pointe du Racou”.



Methodology - Phase A

- During the first phase of the project the pilot sites will be described. There will be a bibliographic research about the area, using existing local studies (P1-P8).
- The problems of each site will be described in its main physical-technical, environmental and socio-economic aspects (P1-P8).
- Definition of the coastal area to work (P1-P8);
- Definition of the econometric model based on the benefit transfer function (P3-P4);
- Introduction of the marginal curves of benefits and costs to assess the optimal dimension of the beach (P3-P4).

Methodology - Phase B

- Use pilot site state indicators to describe the state of this area (P1, P2, P5, P6)
- The different coastal defense systems that can be used in the area will be evaluated and a questionnaire survey will be carried on in the selected area in order to evaluate the opinion of local people, users of the coastal zone (e.g. fishermen) and tourists about the different coastal defense systems to be used (P1, P2, P5, P6).
- A survey will be realized to integrate statistical secondary data about the economy of the area chosen and finalize the CBA framework (P3, P4).
- Management intervention criteria will be established and tools that can be used will be selected (according to the PAP/RAC Protocol) (P1, P2, P5, P6, P7).

Methodology - Phase C

- During phase C attention will be paid to different **conflicts** in the area (e.g. environmentalists against oil companies that want to create oil storage area close to the protected area), which will be recorded and analyzed (P1).
- A set of **tools** for the sustainability assessment will be proposed. Tools (e.g. the Coastlearn training program and the Compass simulation game) will be used for the training of local stakeholders on ICZM and the rise of public awareness on the values of the coastal zone (P1, P2).
- Exploitation of information resulting from the discussions and the questionnaires, analysis of the results observed and positioning compared to the frames of reference (P1-P8).
- A panel of reference of adapted **indicators** will be developed (P1-P8).
- The **conclusions** of the sub-project will be formulated in order to contribute towards the setting up of a Mediterranean and national coastal zone integrated management strategy (P1-P8).

Budget-3.2

Partner	Jan-Juin 06	Juil-Déc 06	Jan-Juin 07	Juil-Déc 07	Jan-Avril 08	TOTAL	%
1 FRI	5500	10563	17063	7563	18063	58752	19.5%
2 CIRSA	3500	22850	8500	6000	3650	44500	14.8%
3 Litorale Spa	3000	10000	10000	2000	0	25000	8.3%
4 DECOS	4000	8875	8875	2125	1125	25000	8.3%
5 DIPTERIS	1960	4250	8800	3750	8300	27060	9.0%
6 ICCOPS	1850	5050	7250	5750	7160	27060	9.0%
7 CFP/Laser	5727	16638	7690	6156	2941	39152	13.0%
8 BRL	7679	18100	13164	13712	2194	54848	18.2%
Total	33216	96326	81342	47056	43433	301372	
%	11.0%	32.0%	27.0%	15.6%	14.4%		

Innovations & Results expected



Innovations

- Extending the range of relevant value of beaches, by means of assessing in monetary terms the ecological and ecosystem beach properties.
- Considering economic benefits and costs both down- and up-drift the nourished beach.
- Proposing a new approach for determining the optimal dimension of beach enlargement based on cost and benefit marginal curves.
- Giving a user friendly econometric model to help public administration choosing the most convenient defence approach by making a preliminary and rapid Cost Benefit analysis as a screening tool whether to produce or not a further accurate economic analysis.
- Integration, in a proactive view, of the environmental and socio-cultural aspects linked to beach management and, more generally, to coastal management.

Results expected

The **effective achievements** are related to:

- Implementing a programme showing social and economic aspects of beach ecosystem and its relationship with the whole coastal environment;
- Implementing a socio-economic and environmental management for the beach;
- Implementing a monitoring system based on beach customer and users needs;
- Implementing ICZM good practices in order to implement the littoral management plan and obtain the Blue Flag award;

The **long term impacts** that the project intends to generate are:

- the organization of the yearly beach maintenance works,
- to raise the public awareness regarding the problem of coastal erosion and
- to promote the setting up of national strategies in the involved countries and a Mediterranean integrated coastal zone management strategy.

Thank you!
Grazie!
Merci!
Eyxaristo!

