

BEACHMED – e

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

INTERREG IIIC Sud Phase A 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

- **ICZM** is a continuous process with the general aim of implementing sustainable development and maintaining diversity in Coastal Zones.
- The **European** coastal zones have problems which cannot be treated by individual countries separately, while the EU policies influence the evolution of the coastal zones. In 2000, based on the outputs of a Demonstration Programme, the Commission adopted a Communication from the Commission to the Council and the European Parliament on "ICZM: A Strategy for Europe" (COM/00/547), and a Proposal from the European Parliament and Council that outlines steps which the Member States should take to develop national strategies for ICZM (COM/00/545).
- The **Mediterranean** area plays a pivotal role within the definition of regional strategies for ICZM. To address this issue, the Mediterranean Action Plan (MAP) was adopted in the framework of the **Barcelona Convention** and the Regional Activity Centre for the Priority Actions Programme (PAP/RAC) was created.
- The reference document which has been initiated by PAP/RAC is a the protocol for integrated management of Mediterranean coastal areas. The most recent draft version was issued on September 2006 (Loutraki, Greece) with a view to its possible approval by the 15th Meeting of the CPs in 2007.



Subproject 3.2. ICZM-MED Objectives

- The various efforts on ICZM have been carried out at a local district level, therefore a system that ensures a coordinated approach on a regional level is needed.
- The **objectives** of this sub-project is the collection of existing studies in this sector in order to create a structure for ICZM on a regional level and to select study areas in each region that participate in the project (East Macedonia and Thrace, Lazio, Liguria, Emilia- Romagna and Languedoc-Roussillon), where different approaches to ICZM will be evaluated in a pilot approach to different sites.
- The pilot sites will be described analytically, the **coast evolution** will be presented, **Cost Benefit Analysis** will be carried out, coastal state **indicators** will be measured, public **policies** will be evaluated, management **intervention criteria** will be established, the way **ICZM principles** can be applied will be also described, **tools** that can be applied will be proposed and coastal integrated management scenario **proposals** will be developed. Furthermore the process of **concerted actions** between different stakeholders will be evaluated.
- The **conclusions** from all the above activities and the international best practices and policies along with the practical experience acquired on the case study areas will contribute to the **Mediterranean and national integrated management strategy**.

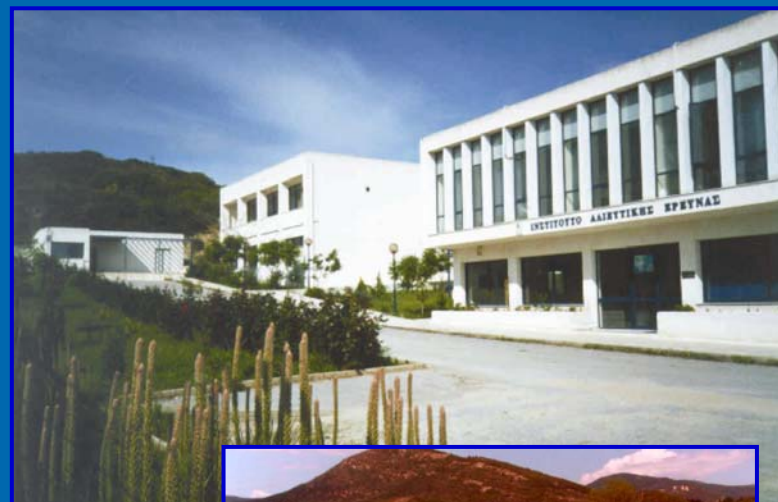


ICZM & PROJECT ACTIVITIES IN THE PILOT SITES & REGIONS

**Region of
East Macedonia & Thrace
(GREECE)**

P1- NAGREF - Fisheries Research Institute

- Belongs to the Hellenic **National Agricultural Research Foundation**.
- Situated at Kavala, **Region of East Macedonia and Thrace**.
- Personnel: 48 (7 researchers, 33 scientists, 8 administration).
- **Research subjects:** Fish biology, fisheries, fish processing, aquaculture, biotechnology, oceanography, marine ecology, coastal zone management.



Contact persons: Dr. Manos Koutrakis,
Argirios Sapounidis

P1 – ICZM in the Region of East Macedonia & Thrace

- Two of the 35 EU Demonstration Projects were carried out in the coastal zone of the Region of East Macedonia & Thrace.
- The 1st one was the **Strymonikos project**, entitled «Concerted Actions for the Management of the Strymonikos Coastal Zone», which was implemented in the west coasts of the Region. The project was funded by the LIFE instrument, with the purpose to contribute to the development and implementation of Community environmental policy, through concerted actions in the Strymonikos coastal zone.
- The 2nd project was carried out in the coastal zone of the Prefecture of **Kavala**. It was a TERRA funded project, entitled ‘Integrated Management Plan for the Kavala Prefecture Coastal Zone’,
- The Prefecture of Kavala also carried out the project ‘**Coast Observatory Office** for the Kavala Prefecture’ which records present and future activities in the coastal zone, using modern technologies.

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**.



P1- NAGREF – FRI Activities



- The activity carried out by N.AG.RE.F. – F.R.I. in the **Phase A** mainly consisted in the gathering of bibliographic information. Moreover contacts with local **stakeholders**, such as in Municipality of Keramoti, Forest Inspection agency, Information Center of River Nestos Delta were done, in order to gather information on the land uses for the preparation of the GIS map.
- During the **next phase** of the project, a GIS map will be created that will contain all the available information related to coastal zone management of the selected site.
- The different **coastal defense systems** that can be used in the area will be evaluated, through 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.
- A **training** seminar will be conducted to local stakeholders with the “**Coastlearn**’ training tool.

Region of Emilia Romagna (ITALY)

P2 – DISTART

- **DISTART** (Dipartimento di Ingegneria delle Strutture, dei Trasporti, delle Acque, del Rilevamento del Territorio) is a Department of the University of Bologna, Engineering Faculty.
- Its contribution will be mainly on obtaining data for the **Cost Benefit Analysis (CBA)**, 'whether beach visitors are willing to pay (through voluntary donations) for the beach defence from erosion and
- whether sunbathing establishment managers are willing to contribute by doing beach maintenance works (such as beach nourishment, defence structures and footpaths from the beach to the asphalted roads)'.



Contact person: Prof. Silva Marzetti, Univ. Bologna,
Dep. of Environmental Economy

P2 – ICZM in the Region Emilia Romagna (IT)

- **According to the EU objectives of ICZM (2000), an ICZM project started in 2002.**
- **An Institutional Committee, composed by the local territorial representatives, was created in order to establish the guidelines for the future coastal management.**
- **In 2005 the Regional Government published the Guidelines for the ICZM (Law No. 645, 20/01/2005).**
- **The implementation of the first public investments according to those Guidelines started in 2006.**

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 was already implemented (photograph 2), and now maintain works are needed.



P2 – DISTART Activities

- The objectives of the Emilia-Romagna region are to estimate in monetary terms the benefits of an erosion defence project, in order to obtain data for the CBA.
- The aims are:
 - i) As regards **beach visitors**, to collect information on the indirect use value, option value and non-use values for the CBA of a defence project at the Riccione beach; The aim is to see whether **beach visitors are willing to pay (through voluntary donations) for the beach defence from erosion.**
 - ii) As regards sunbathing establishment **managers**, to collect information on their **willingness to contribute to the yearly beach maintenance** through specific beach works (such as beach nourishment, defence structures and footpaths from the beach to the asphalted roads).

Region of Lazio (ITALY)

P3 – Litorale SPA

- **Litorale spa** regional agency was created to manage the “Integrated Interventions Program” which was approved in 2003 by the **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: Valentino Giuliani

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 and developing EU and national projects (i.e. on fish stock management, restoration of salines etc.).



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

P3, P4 – ICZM in the Lazio Region (IT)

- Lazio was one of the first Regions in Italy to apply the “Integrated Coastal Zone Management” methodology with the Integrated Action Programme (R.L. 01/01 – Action I.1.7).
- An ICZM Commission was set up, consisting of the Lazio Region and the University of Tuscia, the University of Rome, the University of Cassino and Litorale S.p.A.
- In 2005 the town councils of Tarquinia and Montalto di Castro were chosen by the ICZM Commission as one of the three pilot areas of the Lazio coastline in which to test and put into effect the ICZM methodology

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. Its geographical location (90 km from Rome, 250 km from Florence and Pisa, 280 km from Naples) makes it a prime tourist resort.
- The nourishment has already been done with 485.000 m³ creating a beach of 70m width.



P3 & P4 – Litorale SPA and DECOS Activities

Activities done:

Bibliographic research on cost benefit analysis; **non-market evaluation techniques**; **indicators** that can be used to manage beaches; formulation and distribution of **questionnaires** to the managers of the bathing establishments and to those who use the beaches.

Further steps:

Understanding of the level of **customer satisfaction** in order to achieve the Blue Flag; proposals for possible adjustments of the **Plan for the Use of the Beach**; Definition of the **Cost Benefit Analysis** framework applied to beach nourishment; Measurement of the **consumer and producer surplus**, strictly related to beach enlargement to be run in the CBA and of indirect non-market related economic values of the beach.

Region of Liguria (ITALY)

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 project team deals 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,
Valentina Marin

P6 – Landscape Natural and Cultural Heritage Observatory (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.



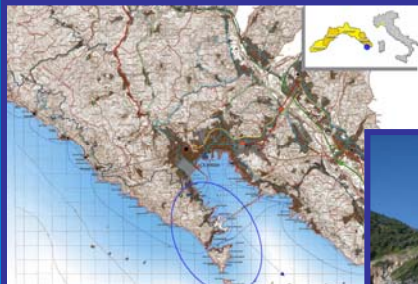
Contact person: Dr. Emanuele Roccatagliata

P5, P6 – ICZM in the Liguria Region (IT)

- The Ligurian Regional Government, recognizing the central importance of an appropriate management of the coastal zone for the regional future development, is seriously involved in monitoring, protecting and managing its littoral.
- A distinctive and particular tool developed in the regional contest is represented by the **Territorial Co-ordination Plan of the Coast (PTCC)**.
- The PTCC aims at achieving an improved quality of the coastal zone in its natural and anthropic components, considering the protection of the coastal environment and the recovery of the coastal landscape together with the enhancement of economic activities in the Region.

P5, P6 – Riviera del Beigua & Porto Venere (IT-Region Liguria)

- Coastal areas identified by territorial districts are located: **a)** between the cities of Genoa and Savona and **b)** near La Spezia.
- Highly developed bathing tourist resorts.
- Dense concentration of human activities high physical anthropic pressure (“littoralisation”).



Riviera del Beigua

Porto Venere **b**

P5 – (DIP.TER.IS.) Activities



- The activities carried out by DIP.TE.RIS. in the **Phase A** mainly consisted in an extensive bibliographic research on the ICZM themes and on the methodologies that will be applied in the following phases.
- **Phase B** foresees data collection in the study area, the complete definition and adaptation of the study methodologies and a first application to the specific pilot areas.
- Three methodologies for the assessment of the coastal area will be applied: 1) **beach users' perception analysis**; 2) environmental sustainable analysis (**emergy analysis**) and 3) proposal of an integrated **tool for the management of the coastal area** in order to achieve sustainability.

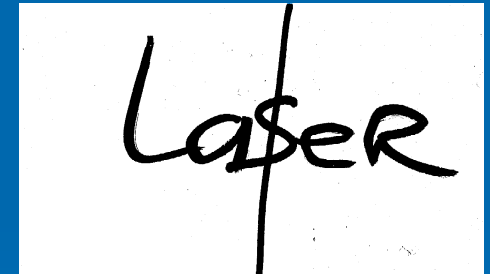
- **Delimitation** of the study area, taking into account different criteria for integrated analysis, in order to have effective indication for coastal management and environmental conservation.
- **Bibliographic** search on coastal management and its implementation in Regione Liguria and test areas, structured at international, national, regional and pilot site level.
- Detailed report on the study area, considering: (i) **general** characteristics, (ii) **natural** characteristics, with a special focus on the naturalistic key issues (both vegetation and fauna), (iii) **anthropic** characteristics and history of human presence, (iv) existing data, (v) built heritage, (vi) coastal management local **policies**, (vii) **social** frame, also the participation process, (viii) **conflicts** and **threats**, (ix) possible geo-data sources

Region of Languedoc-Roussillon (FRANCE)

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 on 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.

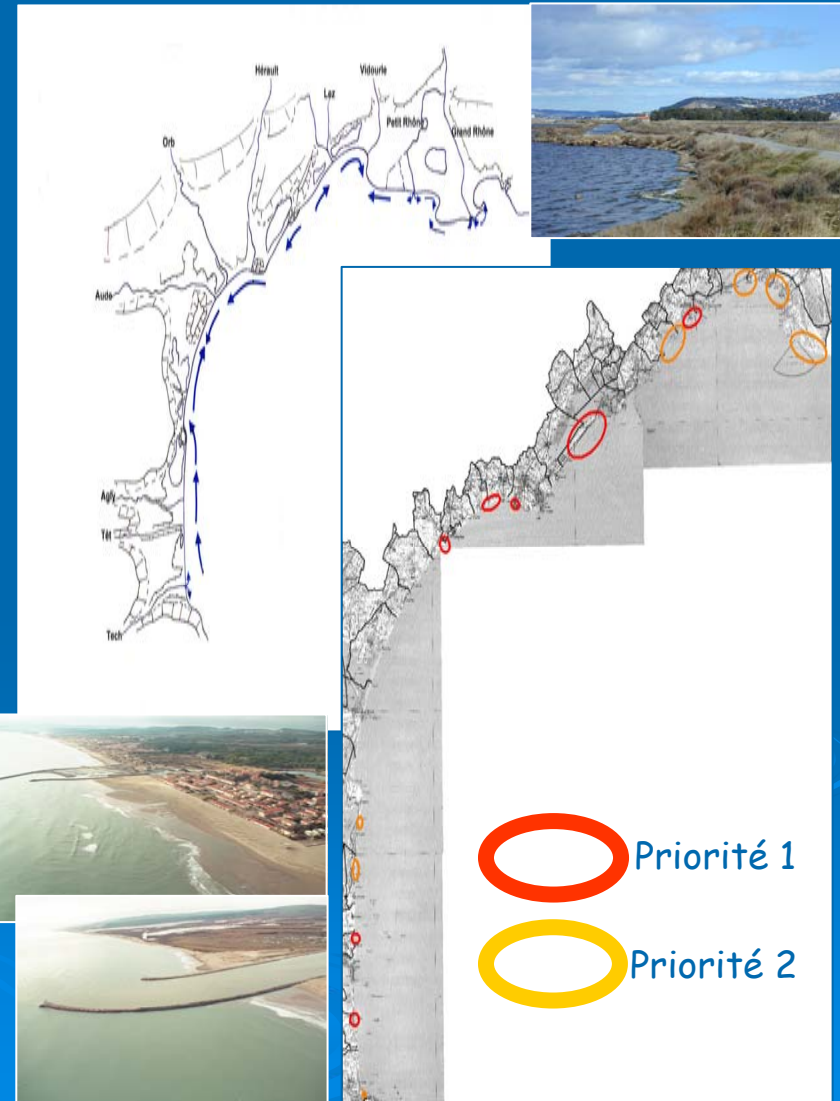
Contact person: Franck Bellet, Francois Carnus

P7, P8 – ICZM in the Région Languedoc-Roussillon (FR)

- From the ICZM national strategy on the sustainable development of coastal territories, 2 projects are currently underway in the Region, i.e., the Thau lagoon pilot site and the “Narbonnaise” Regional Natural Park.
- In 2001, the “Conseil de Développement du Littoral du Languedoc-Roussillon” was created to gather all the stakeholders and promote a global strategy for the regional coastal zone. This council is run by the President of the regional council and the prefect of the region and has led to the implementation of the Coastal Zone Sustainable Development Plan.
- **Mission Littoral** had a triple objective: to federate the actors of the littoral around a coastal zone sustainable development plan; to facilitate the implementation of the plan; to bring a response to the identified stakes.

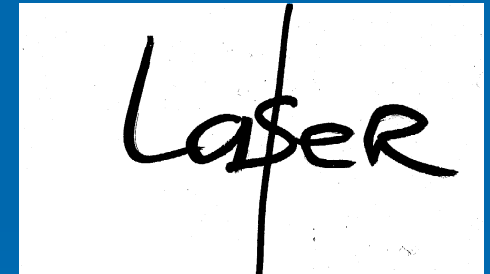
P7, P8 – Région Languedoc-Roussillon (FR)

- 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”.



P7 – CEP/LASER Activities

- Université de Montpellier 1 during the **Phase A** of the sub-project has gathered **bibliographic** information on erosion processes, ICZM requirements and French national coastal **policy**.
- During the **next phases** of the project, a common methodology will be set in order to evaluate the perceptions of local population, users of the coastal zone and tourists about erosion processes and coastal defense systems to be used.
- The objectives are to carry on survey by **questionnaires**, to construct ICZM **indicators** and to **test** these indicators.



P8 – BRL Activities



The activities during **Phase A** were the inventory of the data available with three sources of information: **regional numerical data**, data resulting from **regional documents** of planning and general studies, data resulting from studies.

PHASE B

Preliminary analysis before the data base creation (Needs)
Conception of the Conceptual Data Model,
Elaboration of the GIS database for the permanent coastal atlas

PHASE C

Creation of the permanent coastal atlas
Integration of the indicators in the system
Creation of the user interface

Summary table of Partner Activities

- **Cost benefit Analysis (CBA) (by questionnaires):** DISTART (P2), DECOS (P4), Un. Montpellier (P7).
- **“Willingness to Pay”:** DISTART (P2), DECOS (P4).
- **Beach perception and Defense system attitude:** NAGREF-FRI (P1), LITORALE (P3), DIPTERIS (P5), ICCOPS (P6), Un. Montpellier (P7).
- **Indicators:** LITORALE (P3), DIPTERIS (P5) (output), Un. Montpellier (P7), BRL (P8).
- **GIS maps:** NAGREF-FRI (P1), BRL (P8).
- **Training:** NAGREF-FRI (P1)

Thank you!
Efharisto!
Grazie!
Merci!