

United Nations Environment Programme





MEDITERRANEAN ACTION PLAN

# AGREEMENT AMONG THE MINISTRY OF ENVIRONMENT, LAND AND SEA OF ITALY AND THE UNITED NATIONS ENVIRONMENT PROGRAMME RELATIVE TO THE COASTAL AREA MANAGEMENT PROGRAMME (CAMP) ITALY

MARCH 2014

#### AGREEMENT AMONG THE MINISTRY OF ENVIRONMENT, LAND AND SEA OF ITALY AND THE UNITED NATIONS ENVIRONMENT PROGRAMME RELATIVE TO THE COASTAL AREA MANAGEMENT PROGRAMME (CAMP) ITALY

The Ministry of Environment, Land and Sea of Italy and the United Nations Environment Programme, henceforth referred to as the Parties,

Following the decision approved at the 15th Ordinary Meeting of the Parties of the Barcelona Convention (15-18 January 2008, Almeria) to carry out a Coastal Area Management Programme (CAMP) Project in Italy based on the Feasibility Study prepared for MAP PAP/RAC by an independent consultant in cooperation with the Italian authorities, propose the following:

- a) The Parties undertake to develop and implement the CAMP Project for Italy set forth in the relevant Terms of Reference enclosed in the Annex to this Agreement and making an integral part of it.
- b) The description of the CAMP Project for Italy is set forth in the Annex to this Agreement.
- c) The development, implementation and the post Project activities will be implemented within the following basic institutional arrangement:
  - Italy will be represented by the Ministry of the Environment, Land and Sea which will be responsible for the establishment of the national part of the Project institutional arrangements as defined in the Annex to this Agreement;
  - The Governments of Italian Regions involved in the CAMP Italy project will be represented by the Regional Department of the Environment, which will be responsible for the establishment of the regional part of the Project institutional arrangements as defined in the Annex to this Agreement; and
  - The United Nations Environment Programme (UNEP) will be represented by the Secretariat of the Barcelona Convention in the role of official responsible entity for the Project, and the Priority Actions Programme Regional Activity Centre (PAP/RAC) as the MAP Project implementing Centre, to be responsible for the establishment of the MAP components of the Project institutional arrangements.
  - MAP-PAP/RAC will nominate an independent National Project Coordinator of the CAMP in accordance with the Italian authorities.
- d) The role of the Parties and the obligations during the a) preparatory stage of the Project,
  b) its implementation stage, c) the activities to be undertaken after the completion of the Project (post Project activities), and d) budget and cost sharing, will be fulfilled and implemented as defined in the Annex to this Agreement. The parties will implement this Agreement within their budgetary possibilities and according to national legislation and the decisions of the Contracting Parties to the Barcelona Convention.
- e) The Agreement covers a period from the date of signature until the end of October 2016, unless one of the Parties notifies the others in writing and six months in advance its decision to cease to implement it.
- f) Unless specified otherwise by the Parties, the cessation of this Agreement will not affect the on-going projects in the framework of this Agreement.

g) This Agreement can be modified or renovated by common agreement of the Parties, communicated in writing.

Signed, in .....

For the Ministry of Environment, Land and Sea of Italy For the Mediterranean Action Plan of the United Nations Environment Programme

Maria Luisa Silva Mejias

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## ANNEX TO THE AGREEMENT AMONG THE MINISTRY OF ENVIRONMENT, LAND AND SEA OF ITALY AND THE UNITED NATIONS ENVIRONMENT PROGRAMME RELATIVE TO THE COASTAL AREA MANAGEMENT PROGRAMME (CAMP) ITALY

March, 2014

**Project Terms of Reference** 

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## List of Acronyms

CAMP CZ	Coastal Area Management Programme Coastal Zone
EU	European Union
FS	Feasibility Study
GDP	Gross Domestic Product
GEF	Global Environment Facility
GIS	Geographic Information System
ICZM	Integrated Coastal Zone Management
ICARM	Integrated Coastal Area and River Basin Management
INFO/RAC	Information and Communication Regional Activity Centre
MAP	Mediterranean Action Plan
MCSD	Mediterranean Commission on Sustainable Development
MED Agenda 21	Agenda 21 for the Mediterranean Region
MEDPOL	Marine pollution assessment and control component of MAP
MELS	Ministry of Environment, Land and Sea
NC	National Coordinator
NGO	Non-Governmental Organisation
NPC	National Project Coordinator
OB	Operational Body
PAP/RAC	Priority Actions Programme Regional Activity Centre
PES	Payments for Ecosystem Services
PTCO	Project Technical Coordination Office
RAC	Regional Activity Centre
SC	Steering Committee
SD	Sustainable Development
SEIA	Strategic Environmental Impact Assessment
SPA/RAC	Regional Activity Centre for Specially Protected Areas
SPA	Specially Protected Areas
TEEB	The Economics of Ecosystems and Biodiversity Terms of Reference
UNEP	United Nations Environment Programme

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## I. EXECUTIVE SUMMARY

The proposal of Italy to the UNEP-MAP for the initiation of a CAMP project was approved in the 15<sup>th</sup> Meeting of the Contracting Parties to the Barcelona Convention and its Protocols (Almeria, 15-18 January 2008).

Following the approval of the Contracting Parties, the related Feasibility Study (FS) was launched in the five selected coastal areas of Italy, based on the agreement of the representatives of the relevant Italian institutions, which signed a specific Memorandum of Understanding (Rome, 2 December 2008). The Italian Ministry of Environment, Land and Sea (MELS) in December 2012 completed the Feasibility Study.

The Feasibility Study revealed a complex scenario that hinders the integrated management of coastal areas, mainly because of the fragmentation existing among the different levels of government. However, all those levels should be involved in ICZM policies, trying to (vertically) highlight the relationships between them and some of the main sectorial policies (horizontally) affecting coastal areas, at the same administrative level.

In particular, with regard to the central level, while acknowledging the Ministry for the Environment, Land and Sea a focal role in the field of integrated management of coastal areas, in Italy, to date, there is no single body or institution invested and responsible for coastal management. Implementation is carried out within a range of regulatory dealing with coastal management at government and regional level related to administrative decentralization pertaining sectors such as environment, agriculture, fisheries, industry, infrastructure and transport, tourism, health, economic development. Furthermore, this approach often appears sectorial.

The participatory workshops that will be carried out by CAMP Italy Project should aid to bridge the gap of institutional fragmentation, promoting, in the meantime, the social and stakeholder participation in coastal area related decision-making.

To achieve these objectives the CAMP Italy will develop two fundamental lines of work: the **Horizontal Activities** and the **Individual** (called "Specific" in the Feasibility Study) **Activities**.

**The Horizontal Activities** – which are mandatory actions to be included in any CAMP Project – **include**:

- Coordination and dissemination of the results: This Activity will focus on the operational management of the Project, ensuring the timely and full implementation of all actions and related activities as well as the co-operation between the project partners. Expected output will also include the evaluation of results and durability of all the Individual Activities, the establishment of the project structure and institutional arrangements, the coordination of reporting activities and the organization of all major events.
- 2. Capacity building: The objective of this Activity is to build and strengthen skills of public Administrations participating in the CAMP Italy Project. This goal will be achieved by developing adequate planning skills in order to be compliant with relevant references about ICZM, by pointing out potential criticalities in decision-supporting and decision making and by defining and suggesting opportunities for improvement and/or corrective actions. This Activity will also promote institutional development as well as the training of human resources and the strengthening of management systems.

3. **Data collection and management:** This Activity reflects the importance of making links between all data available between the different sectors and sharing data sets, highlighting the importance of the marine knowledge support tool which is part of the ICZM.

It takes into account data management and analysis solutions adopted by each Individual Activity, and will collect all the data sets produced with reference to the CAMP Italy areas to support the specific activities. It will analyze the main features of the Information Systems involved in CAMP Italy, defining the largest subset of thematic information layers which is already available in all the participating Regions and setting guidelines for achieving future interoperability between different Information Systems.

4. **Institutional coordination and public participation:** This Activity aims at promoting vertical integration and collaboration between Administrations (at government and regional/local level) for a better coastal management. In particular, it will aim at promoting cross-sectorial institutional coordination among competent administrative services, thus of facilitating the creation of an ICZM National network. It will also ensure adequate and timely general public and stakeholder participation in the decision-making processes related to CAMP Italy Project.

On the other hand, **the Individual Activities** – which are specific of each subarea – **will be aimed at:** 

- improving the coordination capacities among different structures involved in coastal zone management (governance for coastal area) and both vertical (network of subjects) and horizontal integration;
- preserving the ecosystem service flow through the reduction and control of human pressures and the development of adaptation (resilience) to the effects of climate change;
- checking the sustainability of socio-economic activities which impact the coastal area through application of ecosystem and economic evaluation of ecosystem services, with special reference to tourism, fishing and coastal defence.

After all the activities are concluded a report of the lessons learned and contribution to the country level implementation of ICZM will be prepared. This could include proposals for the replication and sharing with other regions as well as elements that could contribute to the national level ICZM implementation such as National ICZM Strategy and establishment/ improvement of institutional coordination for ICZM.

The Individual Activities are the following:

INDIVIDUAL ACTIVITIES							
Cod.	Activity						
4.2.1	Monitoring the effects of Tuscany beach nourishment activities in the south of Ansedonia.						
4.2.2	Evaluating feasibility and effectiveness of the use of alluvial sediments extracted from the Magra River drainage basin in order to restore eroding beaches in the annexed coastal cell.						
4.2.3	Protection of the dunes of Lacona (Isola d'Elba).						
4.2.4	Regulations for the removal of sand and material from marine quarries.						
4.2.5	Operational protocol for the reestablishment and consolidation of the (natural or reconstructed) dune belts.						
4.2.6	Conservation of marine and coastal biodiversity with special reference to the conservation of minor species.						
4.2.7	Development and exploitation of new forms of sustainable tourism in protected natural areas.						
4.2.8	Education and Communication to sustainability.						
4.2.9	Implementation of specific actions aiming to the sustainable use of beaches and the protection of coastal zones.						
4.2.10	Enhancement of architectural heritage for the creation of the first eco-hostel in the coastal area for sustainable local development (Buggeru site)						
4.2.11	GIRA – Integrated Fishing Resources Management.						
4.2.12	Asinara National Park and Pianosa island (Tuscan Archipelago National Park) tourism Carraying Capacity Assessment.						
4.2.13	Sardinian center for coastal monitoring and assessment.						
4.2.14	Coastal vulnerability assessment tool.						

A summary timetable and a summary budget table of the project are presented below (more details on sections 4.1 and 4.2).

CAMP Italy: Summary Timetable										
	2014			2015				2016	Follow-up	
Signature of the Agreement	0									
Detailed formulation of the Project	0	0								
Implementation		0	0	0	0	ο	0	0	0	
Post Project activities									0	0

CAMP Italy: Summary Budget Table (in 🗲									
Activities	MELS	Regions	TOTAL						
A. Horizontal Activities	€252.400	€147.600	€72.000	€472.000					
B. Individual Activities	€906.800	€3.760.200		€4.667.000					
Total Estimated Budget	€1.159.200	€3.907.800	€72.000	€5.139.000					

## **II. INTRODUCTION**

#### 2.1 Preparatory Activities

The proposal to start up a Coastal Area Management Programme (CAMP) Project on the Italian coastal zone was presented by the Italian authorities to UNEP-MAP in July 2008 and was taken into consideration and approved during the meeting of the 15th Contracting Parties to the Barcelona Convention (Almeria, Spain,15-18 January 2008). Following the approval, the Feasibility Study was prepared for MAP PAP/RAC by an independent consultant in cooperation with the MELS and the 5 Regions involved.

A series of activities were organised during the Feasibility Study preparation phase, among which the following can be highlighted:

- first meeting of the Project Steering Committee (named "Tavolo CAMP", established to ensure the continuous strategic and operational coordination within the project among all the involved authorities), on February 26, 2009;
- first technical meeting of the "Operational Body" on May 7, 2009;
- Feasibility Studies prepared by the participating Regions (June 2009);
- bilateral meetings between the "General Coordinator" and the participating Regions (February 2010);
- "Tavolo CAMP" meetings in 2010-11 (a new General Coordinator was appointed, from November 4, 2011);
- first version of the CAMP Italy Feasibility Study transmitted to PAP/RAC (October 10, 2011);
- second version of the CAMP Italy Feasibility Study transmitted to PAP/RAC (February 27, 2012);
- telematic meeting between the participating regions and the new appointed General Coordinator (November 30, 2012);
- third version of the CAMP Italy Feasibility Study transmitted to PAP/RAC (December 2012);
- meeting with PAP/RAC and final approval of the latest version of the CAMP Italy Feasibility Study (December 18, 2012).

#### 2.2 Justification of the CAMP Italy

# 2.2.1 Compatibility of the proposal of CAMP Italy with CAMP objectives and triggering factors in the selected area

The objectives and activities proposed for the CAMP Italy are fully compliant with the rationale underpinning CAMP projects, as pointed out in the Feasibility Study.

Moreover, from a more general point of view, the CAMP Italy project aims at favoring integrated coastal zone management in Italy, not only by selecting areas that may summarize the whole national situation, but also by promoting, in some of these areas, an agreed

governance among the local, regional and central administrations. Hence the choice of Tuscany, Emilia Romagna and Sardinia regions, which encompass very different natural and socio-economic situations, but share common problems related to the management of coastal strips where the administrative boundary does not correspond to the border morphology.

Management actions are often carried out at local level, involving effects due to operations that affect the coastal ecosystem (e.g. by altering hydrodynamics) that adversely affect coastal areas of neighbouring regions. Therefore two or more administrative units, differently organized, but with similar socio-economic problems, may work together to find effective solutions to problems as diverse as, for instance, conurbation management or sediment extraction.

The development of the CAMP Italy project will undoubtedly promote the relationships among the coastal regions involved in it, improving the existing networks, and strengthening communication and arrangements for the exchange of experiences on unusual issues. In particular, the regional administrations, with a different internal organization related to the integrated coastal zone management, will have the opportunity to meet and exchange views on different approaches. Other regions, although not directly involved in CAMP Italy, will take profit of the outcomes of the project through the planned CAMP information and dissemination activities.

While Tuscany is more close to the overall situation of most other Italian Regions, Emilia Romagna and Sardinia are worth mentioning for their distinct characteristics.

Emilia Romagna is characterized by the massive presence of tourist resorts and interested in an appropriate way to govern a sustainable development of this activity. It is an area where the government of the coastline has long been well established and has developed all the tools (cognitive, monitoring, planning and legislative) necessary for a sustainable management. The area selected by the CAMP Italy project in Emilia Romagna encompasses environmental values and human activities of significant socio-economic importance. In fact, the proposed area is already inserted into the Po Delta Regional Park where a set of people and trades base their jobs on the sea and the coast wealth. The Region has developed several projects on Integrated Coastal Zone Management: in particular a project for the definition of the ICZM guidelines and a program of experimental actions sponsored by the Po Delta Park in 2005. Participation in the CAMP Italy project will allow the Emilia-Romagna region to enhance institutional capacity and strengthen the governance system, continuing the path started in 2005 with the establishment of the ICZM strategy.

Sardinia, on the other hand, can be considered as a complete and isolated coastal system, which offers the opportunity for spatial planning and sustainable development of coastal areas not yet affected by the presence of important human activities. The Region of Sardinia has also developed tools for understanding and monitoring (the "Regional Coastal Conservatory of Sardinia"- RCCS) to responding appropriately to instances from different sectors and local governments.

The RCCS has specific functions related to the coordination of initiatives for integrated management of coastal zones carried out by Regional Administration, Local Authorities and the administrations of protected areas and Natura 2000 sites and, in addition, to the promotion and dissemination of issues related to environmental protection, landscape and sustainable development in coastal areas.

The ability to analyze issues and to program the management along with possible solutions, offers a great opportunity for growth in regional institutions, thanks to the fact that, in CAMP Italy, different regional choices can be examined and compared and, through an effective coordination, management plans providing the best solutions can be reached. At the same time, through the actions taken by each individual region, it will be possible to obtain and evaluate the results which will enable the other regions to adopt and / or modify, according to their own needs, the project's solutions.

A major goal of the CAMP Italy project is to encourage the implementation of national strategies for integrated coastal zone management. In accordance with the implementation of the ICZM Protocol in the Mediterranean, the involvement of some regions in a CAMP project will be a driving force for the participation of other coastal regions in the early stages of consultation and sharing strategy. In fact, the CAMP Italy project helps to integrate, standardize, share and implement tools and procedures aimed at adapting the territorial planning, with implications for the management of coastal resources and assets.

In summary, the implementation of the CAMP Italy can be justified by the following circumstances:

- diversity and representativeness of the values and criticality (environmental, cultural and socio-economic) compared to the national context and the Mediterranean basin;
- territorial diversity expressed in terms of environmental, cultural and socioeconomic aspects as a prerequisite for a high degree of intensity and complexity of multi-dimensional relationships;
- the spatial dimension of the preferential area as the context for the trial of the action;
- information flow and shared project guidelines among CAMP stakeholders;
- adoption of "bottom up" and "step by step" strategies;
- promotion of project initiatives that consolidate some experiences of interinstitutional coordination already in place.

Through the CAMP Italy actions the involved administrations will take profit of:

- an additional tool for the protection of coastal ecosystems, a leverage tool in case of conflict resolution;
- the opportunity to learn new methodologies with reference to the inter-level planning and the strengthening of inter-institutional coordination;
- the start of a processes of cataloguing, analysis and optimization of integrated coastal areas, by case studies and best practices that could then spread and result in conservation policies and management;
- the possibility of becoming part of an international community, thus improving professional growth and policies aimed at environmental conservation and management.

#### 2.2.2 Conceptual framework of the CAMP Italy

The design of the CAMP Italy Project recognizes and incorporates the following fundamental considerations:

- The CAMP Italy is a "country-driven" project: this emphasizes that the Project is designed to respond to national, regional and local priorities, will operate according to the experiences and realities of the Italian legal, administrative and cultural institutions, and will utilize the available national and local expertise. MAP technical assistance will be targeted to general coordination and to issues in which national expertise and resources require support and supplementary inputs.
- The CAMP Italy Project is based on an integrated approach to marine and coastal environment and development problems. This emphasizes that project activities will cut across protection and development problems, harmonize public sector priorities and private sector pressures, and provide an integrated strategy for the common goal of achieving development in the region within a sustainable management policy framework.
- Consequently, the CAMP Italy Project, far from compromising development objectives, aims to incorporate the principles of sustainable development and integrated coastal management in the development process to better articulate resource protection and development objectives.

## **III. CAMP ITALY BASIC ELEMENTS**

#### 3.1 Project Area

The project area includes several coastal strips and involves three Italian regions: Tuscany, Emilia Romagna and Sardinia.

The Feasibility Study took into account technical-scientific information about all Italian coastal regions to support the choice of suitable areas for the realization of the CAMP ITALY project. In order to select the most suitable areas, coastal types, habitat types and distribution, geographical features, administrative organization, degree of human settlement, economic activities and existing spatial planning instruments were carefully considered for all the Italian regions.

Subsequently, the analysis of a set of descriptors belonging to three macro areas (natural features, natural and anthropogenic pressures, governance instruments) allowed the development of synthetic indexes for a preliminary evaluation of the suitability of the Italian coastal regions for the CAMP-ITALY project.

On the basis of the obtained results, following the indications from PAP / RAC and, additionally, taking into account geographical and physical characteristics as well as anthropogenic pressures and risks arising from the effects related to climate changes (natural pressure), the regions which may potentially achieve optimal results according to the aims of the CAMP Italy project have been selected.

Significant weight has been assigned to the following issue in the selection procedure:

- territorial planning instruments and/or experience on management of coastal areas to ensure the feasibility of the CAMP project with existing resources;
- sites with significant naturalistic and environmental value to preserve their biodiversity (i.e. presence of protected natural areas);
- areas at risk from current and future effects of climate changes, such as flooding by sea-level rise, coastal erosion, desertification;
- regional structures and / or processes for coastal management to increase the certainty of success of the project;
- territorial continuity with other selected regions to test procedures and structures for an effective coordination of areas shared by different regions.

After this process five Italian areas as well as five Italian administrative regions have been selected. They were distributed along the coastal zones of Liguria, Tuscany, Emilia Romagna, Latium and Sardinia. After the Feasibility Study was finalised and approved, only three out of five administrative Regions are still involved in the Project (Emilia Romagna, Sardinia and Tuscany) and therefore two of the project areas are now smaller than expected in the Feasibility Study. They were highlighted by means of an asterisk in the following list of the five project areas (see Figure 1):



Figure 1. CAMP Italy Project Areas

- Area 1 (Tuscany): coastal zone between the northern border with Liguria and Livorno, including the Tuscan Archipelago except Giglio, Giannutri and other minor southern islands;
- Area 2 (Emilia-Romagna): coastal zone between the mouth of the Po di Goro and the mouth of Rubicon river;
- Area 3 (Sardinia): coastal area between Cape Galera and Cape li Canneddi, including Piana and Asinara islands;
- Area 4 (Sardinia): coastal zone between Torre Pittinuri and Grotta Azzurra (southern limit of Arbus town) and facing islands;
- Area 5\* (Tuscany): coastal area between Principina a Mare (Grosseto Province), as the northern limit of the Maremma Regional Natural Park, and the southern border with Latium, including Formiche di Grosseto, Giglio and Giannutri islands.

In the Feasibility Study Liguria was involved in Area 1 and Latium in Area 5, and both were collaborating with Tuscany. However, Tuscany confirmed its willingness to participate in CAMP ITALY project independently of those regions.

Area 1 stretches from the eastern Ligurian border to the mouth of the Calambrone river and lies entirely in only one physiographic unit that is 63.5 km long, but it also included the northern part of the Tuscan Archipelago with its 5 major islands: Gorgona, Capraia, Elba, Pianosa and Montecristo. From the morphological point of view this coastal zone is dominated by sandy beaches, even if rocky coastlines characterize the Tuscan Archipelago. The northernmost sector of the Tuscan shore shows a high degree of urbanization which developed, at first, as a consequence of the intense port activity in Carrara and Viareggio and, subsequently, due to the expansion of touristic sites, such as Marina di Massa, Forte dei Marmi and Viareggio. The coastal zone between the Viareggio harbour and the Arno River mouth, boasts a better preserved natural environment which lies within the Regional Natural Park of "Migliarino San Rossore-Massaciuccoli".

In Tuscany, the coastal population increased consistently, with high growth rates from 1951 to 1981, declining and stabilizing until the present day. With the exception of all the island communities, the coastal municipalities have higher density values than the provincial average. The maximum values are recorded in the town of Viareggio, which, with 1,985 inhabitants /km2, is second only to Florence. The lowest values are found in the Island of Capraia (18 inhabitants /km<sup>2</sup>). The average density is equal to 155 inhabitants/km<sup>2</sup>; in the Tuscany coast the average density is 265 inhabitants/km<sup>2</sup>, compared to 138/km<sup>2</sup> in inland Tuscany.

Among the Impacts/risks that are more relevant in this area, the following deserve a special mention: increased pollution of wastewater caused by tourism, damage caused by moorings and anchorages at sea, air pollution and pollution from contaminated sites (risk).

**Area 2** is located in the north-eastern coastal zone of the Emilia Romagna region and corresponds to the terminal segment of a wide alluvial plain (Po Valley). The coast extends from the mouth of the "Po di Goro", to the north, to the mouth of Tavollo River in the south, with a total length of about 83 km. The geographical and geomorphological characteristics of the shore are complex and, locally, very diversified. Generally, the coast of Emilia-Romagna is characterized by fine-grained sandy sea bottoms, large beaches and coastal dunes. However, shapes and characteristics of the beach-dune system vary along the shoreline depending on local weather conditions, geomorphological and geological features, as well as human impact. Due to both natural and anthropogenic causes, the coastal area is strongly affected by subsidence, with an average rate of nearly 8 mm / year for an extension of up to 5 km from the shoreline. On the whole, the coastal arc can be divided into two main areas: (1) a northern one which extends from the "Po di Goro" mouth to the "Saline di Cervia" and is characterised by many damp and brackish environments and (2) a southern one which is typified by sandy beaches and, behind them, by relicts of former beaches.

Data about this area show a general increase in population since 1996. The growth, although widespread, had a different intensity in the provinces. In the "Riviera" area – which is affected by CAMP – residents increased by 9.5%, to 477,308 units (compared with 436,055 a decade earlier), surpassing any other regional area. In this area there are many municipalities that have registered an increase of immigration, higher than the regional average.

Relevant impacts/risks in this area are coastal erosion, eutrophication, pollution, saltwater intrusion and subsidence.

**Area 3**, in northern Sardinia, extends along the coast between "Capo Galera" (Alghero), up to the promontory of Capuneddi, including the Asinara island, with a linear development of 362 km of coastline.

This area is characterized by more than 200,000 residents, approximately 13% of the regional population. The residents are concentrated (about 60%) in the municipality of Sassari. Population density has values significantly higher than the regional average and that of the coastal municipalities of the island: the four main centres are positioned in the top ten most populous coastal municipalities of the Region. The 2001 census recorded a total number of homes next to 110,000 units, approximately 14% of the regional total and a quarter of the housing stock of the coastal municipalities.

As for impacts/risks, desertification (Asinara), coastal erosion and pollution from the industrial area of Porto Torres are the most relevant.

**Area 4** extends from the southern end of the wide "Buggerru-Portixeddu" bay, including the granite promontory of "Capo Pecora", the complex Scivu-Piscinas dune system and the Oristano Gulf, and ends on the Montiferru rocky coasts ("Santa Caterina di Pittinurri") with a total linear development of about 292 km. It is worth noting that the industrial harbour of Oristano, located in the middle of the Gulf, is the main node of the maritime traffic of this area.

This area has a resident population of more than 90,000 units, i.e. approximately 6% of the total of Region. The municipalities of Oristano, Terralba, Guspini account for 60% of the population, with a decisive extent on the socio-economic profile of the area. In this area there are over 46,000 homes, approximately 6% of the regional housing stock and 10% of the units located in the coastal municipalities of the Sardinia Island.

Finally, two main risks are to be mentioned for this area, namely coastal erosion and floods.

Area 5 extends from "Principina a Mare" (Grosseto, Tuscany) to the northern border of Latium and is about 100 km long. From the morphological point of view, the coast is characterized by shallow beaches with sandy bottoms. The promontory of Argentario, with the Giannella and Feniglia tombolos, interrupt the coastal flat morphology in the central sector whereas sandy beaches, with low slope, appear south of the promontory and characterize the remaining coastal area. This area stretches lies entirely within the province of Grosseto and can be divided into two main sectors: the northern one, including the municipalities of Grosseto and Magliano, and the southern one, also known as "Costa d'Argento", which lies in the southernmost part of the Grosseto province and comprises the municipalities of Monte Argentario, Orbetello and Capalbio ("Maremma Grossetana"). The most important physiographic units which influence the sedimentology of the area are represented by the "Monte Argentario" and the Ombrone river. Between the promontory and the Ombrone delta, more than 10 km from the coastline, a lens-shaped deposit of probable fluvial origin (Tiber) occurs and reaches the maximum thickness of nearly 26 m. From the geomorphological point of view, the coastline is characterized by sandy beaches with low coastal slopes in the Grosseto province, the Giannella and Feniglia tombolos and the Capalbio shore. These characteristics are also typical of the area comprised between the Talamone Gulf and Argentario. The main sandy beaches are fed by sediment load of the major rivers of the area (Ombrone and Albegna).

As in northern Tuscany, the coastal population steadily from the '50ies to the '80ies, slightly declining in the last 20 years. Even in southern Tuscany coastal municipalities on the mainland have higher density values than the provincial average. While the average density is

155 inhabitants/km<sup>2</sup> (and 138/km<sup>2</sup> in inland Tuscany), along the coastline the average density is 265 inhabitants/km<sup>2</sup>. This area shows a highly urbanized territory with a high intensity of seasonal residences in summer, producing a multiplier effect of pressure on natural resources and on the coastal ecosystem.

Coastal erosion, eutrophication of coastal lagoons, pollution from contaminated sites (risk) as well as from industrial sites and ports are the most relevant impacts/risks in this area.

## 3.2 Project Objectives and Strategy

The main **objectives** put forward for the "CAMP Italy", as approved in Almeria in January 2008 and presented in the Feasibility Study in 2012, were formulated on the basis of the diagnosis and within the framework of objectives and criteria for the CAMP projects. They include a strategic objective (comprised of three sub-objectives) and seven complementary objectives.

As for the strategic objective, it consists in testing the integrated management of the coastal area, implementing both the ICZM Protocol and the EU ICZM Recommendation 2002. Moreover, it includes actions aimed (1) at reducing critical processes (coastal erosion, loss of biodiversity, pollution), (2) at managing natural resources in a sustainable way and (3) at conserving natural habitats and biodiversity.

The seven complementary objectives will be achieved through activities specifically targeted at particular problems:

- a) management of the marine spaces (such as management of the mining of sand from the seabed, of fish farms, etc.);
- b) protection and enhancement of the historical-cultural and environmental heritage, and landscape;
- c) diversification of the touristic offer (new offers focused on specific environmental and landscape aspects);
- d) environmental and landscaping restoration;
- e) recovery and preservation of the coastal and marine environment at the river mouths;
- f) description and representation of the territory and its resources, identifying values, opportunities and critical issues, reasons for the proposed choices and evaluating expected effects;
- g) definition of evolutionary scenarios which intervention policies must address.

Of course, CAMP Italy will also aim at the general objectives of the CAMP Programmes, i.e.:

- at developing strategies and procedures at national and local level for sustainable development, environmental protection, rational use of coastal and marine resources as input for the formulation of strategies for sustainable development Mediterranean;
- at identifying, adapting and testing, in a real operational context, methodologies, tools and practices of sustainable coastal development;
- at contributing to upgrade the human resources working at national and local institutions;

• at ensuring a wide use, at national and regional level, of experience gained by the program and its individual projects, and create the conditions for the follow-up.

The CAMP Italy Project will be implemented by national officers and/or experts assisted by MAP experts and international consultants. The integration of the Project results will be made jointly by MAP and selected national officers and/or experts.

MAP Regional Activity Centres and MAP programmes with particular expertise will provide technical assistance to the Project, including:

- Secretariat of the Barcelona Convention;
- Priority Actions Programme Regional Activity Centre (PAP/RAC);
- Information and Communication Regional Activity Centre (INFO/RAC);
- Specially Protected Areas Regional Activity Centre (SPA/RAC);
- MEDPOL.

In addition, national teams implementing individual Project activities will use as appropriate, recommendations and documentation prepared within hitherto MCSD and EU activities. Administrative and technical support related to the use of MCSD and EU documents will be provided by the responsible MAP component and the Italian MELS.

The cost of the Project will be covered through cash and "in kind" contribution by MAP (through the contributions of the RACs involved), and by the host country cash and "in kind" contributions.

The allocation of MAP funds related to:

- salary of National Project Co-ordinator, and
- expenses of MAP experts and consultants after the approval of the Inception Report and Technical Specifications.

Progress reporting by national teams to the National Project Coordinator and PAP/RAC in its role of MAP Project co-ordination will be provided through regular half-yearly progress reports. In addition, at the Project level, the National Project Coordinator and PAP/RAC will present regular half-yearly progress reports to MAP and Italian MELS.

## 3.3 Project Structure

As a result of the preparation of the Feasibility Study, the CAMP Italy project is structured around two main segments:

- A. Horizontal Activities, based on data, problems, discussions, documents issued by the Individual Activities, will be aimed at four goals: a) coordination and dissemination of the results; b) capacity building; c) data collection and management and d) institutional coordination and public participation.
- B. Individual Activities will be structured around the main thematic areas identified in the FS (more in Section 3.2), i.e. a) Planning of marine and terrestrial coastal areas, b) Protection, preservation and restoration of coastal and marine habitats and c) Sustainability of socio-economic stress on the coastal zone (in particular tourism, fishery, structures for coastal defense).

## 3.4 Phasing of the Project

Project phasing will follow the approach incorporated in the ICZM project planning process (Figure 3).





- Stage I: Initiation (implemented before the signing of the Agreement).
- Stage II: Detailed formulation of the Project:
- initial data collection;
- meeting prerequisites for implementation;
- draft Technical Specifications;
- draft Inception Report;
- inception Workshop/Final Inception Report.
- Stage III: Implementation:
- initial implementation activities, including preparation of the final version of the Technical Specifications for individual activities;
- implementation of individual activities;
- integration of results, including the preparation of the Final Project Report;
- presentation of the results.
- Stage IV: Post Project Activities
- formulation and implementation of follow-up activities;
- monitoring and reporting;
- presentation and use of results at MAP level.

## 3.5 Project Outputs

From a general point of view, the main expected outputs of the CAMP Italy are:

- the application of tools and methodologies for terrestrial and maritime spatial planning, through the coordination of programming, planning and regulating tools to improve the coordination capacities among different structures involved in coastal zone management (governance for coastal area ) and both vertical (network of subjects) and horizontal (industry sectors) integration;
- protection, preservation and restoration of coastal and marine habitats
- maintenance of the flow of ecosystem services through reduction and control of human pressures and through the development of adaptive strategies aimed at mitigating the effects of climate change;
- checking the sustainability of socio-economic activities that stress the coastal area through the analysis and economic evaluation of ecosystem services (PES, TEEB, etc..), with special reference to tourism, fishing, coastal defence.

The achievement of these specific objectives will be reached in the context of the ICZM Protocol provisions, so that CAMP Italy may represent, for the considered thematic areas, an example of regional application of the protocol itself. Therefore, a further general objective of CAMP Italy will be testing the application of the ICZM Protocol at national / regional scale.

Moreover, Individual Activities will provide different specific outputs in each project area, as presented in section 3.2. and in its sub-sections.

## 3.6 Project Framework

The preparation of the CAMP Italy will be carried out under the following organizational structure.

The institutional responsible of the Project is the MELS which guarantee its representation to PAP/RAC.

The constant national coordination among all the institutional actors is guarantee by the Coordination and Steering Committee called "Tavolo CAMP".

Each Region, within the National coordination, is responsible for the correct implementation of project activities and monitoring of their part and, in particular, of their Individual (or Specific) Actions; moreover, periodically updates the Tavolo CAMP.

For the best operational coordination of the Project, for each Horizontal Activity a responsible is named by the Tavolo CAMP to ensure that the action is completed in cooperation and coordination with the National Project Coordinator.

## 3.6.1 Tavolo CAMP

The Tavolo CAMP carries out general superintendence and coordination acting as a project Steering Committee. It is composed of representatives' of the Regions and the Italian MELS. The National Project Coordinator participates as permanent observer to the Tavolo CAMP meetings.

The 'Tavolo CAMP' identifies the CAMP Italy structure for the coordination, integration and dissemination of results and in particular:

- Individuates for each horizontal activity a subject responsible who liaises with the National Project Coordinator;
- Monitors the individual/pilot project activities;
- Assesses the specific activities taken in the CAMP subareas;
- Identifies deficiencies and proposes and drafts corrective or supplementary actions;
- Decides if and how actions should be modified and/or integrated;
- Analyzes comparatively the state of play of the specific activities;
- Finalizes Integrated Report including lessons learned and proposals for national level implementation of ICZM;
- Reconsider, as need may arise, the co-financing quota for each Part of the Project.

## 3.6.2 The National Project Coordinator (NPC)

The NPC, nominated by the PAP/RAC in accordance with the MELS, as the responsible of the coordination and management of the Project:

- Coordinates and integrates the whole project activities and deliverables;
- Manages pilot actions shared by CAMP Regions (horizontal management);
- Manages the coordination between the National administrations (National, Regional and Local) and between these and MAP, as well as the coordination of all external contributions;

- Keeps in contact with other projects (in particular, CAMP, ICZM, Adriplan, Ritmare, etc.), also with the view of cooperation with CAMP Italy Project;
- Submits proposal, integration, preparation and presentation of progress reports and Project results to the Tavolo CAMP;
- Reports to the Tavolo CAMP on its activities and the progress achieved;
- Prepares the Final Integrated Report.

#### 3.6.3 Project Technical Coordination Office (PTCO)

NPC, the nominated subjects responsible for each Horizontal Actions and the responsibles for Individual Actions form the Project Technical Coordination Office (PTCO), which act in accordance with the respective Technical Specification for the activity, and in accordance with the respective TORs for the consultant.

#### 3.6.4 The MAP component

The Secretariat of the Barcelona Convention exercises guidance and supervision of the implementation of the Project. PAP/RAC, as the Project Implementing Centre, is responsible for co-ordination, guidance and implementation of the Project, in co-operation with the Italian National and Regional authorities. Furthermore, PAP/RAC co-ordinates the activities with other MAP components involved in the Project with the assistance of an external expert nominated as general co-ordinator of the project. Finally, it is responsible for the co-ordination of preparation of final Project documents.

Other MAP components could be involved in the Project by assuming the responsibility for the implementation of respective Individual activities under the co-ordination of PAP/RAC, and in co-operation with the general co-ordinator and relevant national authorities/institutions responsible for the respective activities. For example, MEDPOL could provide assistance to the assessment and identification of protecting measures related to the provisions of the regional plan on marine litter or SPA/RAC could assist with technical and coordination support for the biodiversity and MSP issues.

MAP professionals and consultants act in accordance with their respective ToRs. The area of consultancy needed and the selection of the consultant shall be defined by the Inception Report so to ensure proper use of resources and transparency.

## 3.6.5 Inputs

The Inception Report, as well as the Technical Specification for each Project activity and TORs for each consultant would clearly indicate which MAP inputs are to be consulted as compulsory in the implementation of activities.

## 3.6.6 Reporting

During the implementation of the Project, regular programme reporting at half-yearly intervals will be secured at the Project level and for each Individual Project activity.

After the completion of the Project, Terminal Project report and Self-Evaluation Facts Sheet will be prepared according to the UNEP format.

During the post Project phase, reporting will be secured, on the basis of respective monitoring and evaluation activities.

The main outputs include:

- Inception Workshop;
- Inception Report;
- CAMP Italy Project web site;
- Progress Reports;
- Final Integrated Project Report, Follow-up Proposals, and Urgent Investment Portfolio;
- Presentation Conference, Conference Documents and the Conference Report;
- Project Terminal Report and Self-Evaluation Facts Sheet.

Progress reports, interim documents, Final Project Documents and Reports will be prepared in English and Italian language.

## 3.6.7 Project partnership and participation

A provisional list of partners in the implementation of the Project activities has been established including other Regional Ministries, municipalities, scientific bodies and universities, professional organizations, economic interests, trade unions, local NGOs, and other concerned organizations.



Figure 3. Organization structure of the project

## **IV. PROJECT ACTIVITIES**

Through the participatory workshops carried out during the FS, the CAMP Italy has been conceived as a demonstrative experience to create and put in practice an organizational structure and procedures to articulate coordination mechanisms between the different administrations as well as to promote the social participation in coastal area related decision making. All this to the end of achieving a true integration of the sustainability principles in the set of sectorial actions.

The results expected from the CAMP Italy will be a valuable experience for the creation of similar organisational structures nationwide, promoting this way a true implementation of the ICZM.

To achieve these objectives the CAMP Italy will develop two fundamental lines of work: A) Horizontal Activities and B) Individual activities. As part of these lines of work different activities and Individual activities will be carried out. Most of these arose from the participatory processes above mentioned, and others have been proposed by MAP and will be carried out by MAP and MAP Components (e.g. PAP/RAC, INFO/RAC, SPA/RAC, MEDPOL) in liaison with the PTCO and the 'Tavolo CAMP'. PAP/RAC will support project coordination, while the participation of other MAP Components will be in-cash and/or in-kind and will be focused on sharing experiences and expertise support. The context of RACs' participation will be defined in the Inception Report and further detailed during the implementation of the actions.

## 4.1 Horizontal Activities

The Horizontal Activities of the project are those actions, expressly provided for by UNEP/MAP, which characterize a CAMP project. They are thus "mandatory" actions that have to be included in any CAMP Project.

Activities	MELS	MELS Regions		TOTAL	
A. Horizontal Activities	€252.400	€147.600	€72.000	€472.000	
Coordination and dissemination of the results	€94.650	€55.350	€72.000 (PAP/RAC)	€222.000	
Capacity Building	€31.550	€18.450		€50.000	
Data collection and management	€31.550	€18.450		€50.000	
Institutional coordination and public participation	€94.650	€55.350		€150.000	

The estimated<sup>1</sup> budget (€) for the Horizontal Activities is as follows:

In the following paragraphs, possible proposed actions, responding to the functions for which the CAMP Project has been realized, are outlined and described.

## 4.1.1 Activity 1: Coordination and dissemination of the results

Horizontal Activities deal with:

- the coordination of the CAMP Italy project;
- the presentation of the main components of the project;
- the presentation and dissemination of the results.
- institutional coordination and public participation.

This task comprises the operational management of the project, ensuring the timely and full implementation of all actions and related activities as well as the co-operation between the project partners. To this end, the "CAMP project" MoU with the Regions will be upgraded accordingly, outlining the decision making structures and communication channels.

In particular, Activity 1 includes the following activities:

(i) The coordination of the CAMP Italy project, coping with its complexity, due to its structure as a multi-area CAMP project involving three Italian regions. This stage is managed by the following actors and related tasks:

The **<u>Tavolo CAMP</u>**, which will have the following responsibilities:

- Agrees initial activities, including general co-ordination and logistics, initial phase of "functional" activities;
- Develops a monitoring, evaluation and reporting action in the framework of the implementation of the project and performs an activity of internal audit according to the methodological guidance provided for in the UNEP operating manual within the MAP PAP/RAC;
- Requests the NPC and the PTCO to prepare draft documents and specific proposal based on its decisions;
- Overlooks all the remaining horizontal activities;
- Adopts integration of results, including the Final Integrated Project Report, based on NPC and PTCO proposals and draft documents;
- Decides the follow-up proposals and the Urgent Investment Portfolio;
- Works on the determination of post project activities (monitoring, evaluation, reporting, follow-up activities).

The **PTCO**, which will have the following responsibilities:

- Supports the National Project Co-ordinator;
- Takes care of the horizontal reporting activities;
- Supports Individual activities implementation;
- Manages activities such as communication (e.g. brochures, seminars, marketing, etc), participation, training and rising awareness; creation and update of the project webpage;
- Manages the dissemination of the activities, e.g. through the INFO/RAC;
- Takes care of the contacts with stakeholders at National level;
- Manages the activation of a web forum on the project issues;
- Monitors the individual/pilot project activities;

- Assesses the specific actions taken in the CAMP subareas;
- Identifies deficiencies and proposes and drafts corrective or supplementary actions;
- Analyzes comparatively the state of play of the individual activities.

The NPC, which will have the following responsibilities:

- Coordinates and integrates the whole project activities and deliverables;
- Manages pilot actions shared by CAMP Regions (horizontal management);
- Is responsible of the coordination between the National administrations (National, Regional and Local) and between these and MAP, as well as the coordination of all external contributions;
- Keeps in contact with other projects (in particular, CAMP, ICZM, Adriaplan, Ritmare, etc.), also with the view of cooperation with CAMP Italy Project;
- Keeps in contact with UNEP/MAP RACs;
- Submits integration, preparation and presentation of progress reports and Project results to the Tavolo CAMP;
- Reports to the Tavolo CAMP on its activities and the progress achieved;
- Prepares the Final Integrated Report.

A provisional list of partners in the implementation of the <u>Project activities</u> will be established, including other <u>Regional Departments</u>, municipalities, scientific bodies and Universities, professional organisations, <u>economic interests</u>, trade unions, local NGOs, and <u>other concerned organisations</u>.

- (ii) the presentation of the main components of CAMP projects in general and, in particular, of the CAMP Italy project, as a good example of a pilot application and implementation of the ICZM Protocol of the Barcelona Convention, as well as of the proposed European Union Directive establishing a framework for maritime spatial planning and integrated coastal zone management.
- (iii) the presentation and dissemination of the results of all the planned activities of both horizontal and individual activities: local (Region level) events will focus on individual activities, while horizontal activities will be presented at national level (thus involving – although indirectly – Regions that are not participating in CAMP Italy).

This activity is based on brainstorming sessions and on workshops, where documents and decisions will be adopted, involving people from all the participating Regions, both internal to the project and public, at regional and national level.

A web site project and the activation of a web forum will be launched to support the project activities, to better communicate the organization's projects and initiatives and make the information available, inviting comments and ideas from all interested parties (with compulsory registration). On an internal part of the project website a structure for document sharing will be created. Throughout the project, all internal working documents and project outputs will be stored here and made accessible to all project partners.

Other initiatives will be planned, playing a major role in presenting, promoting and disseminating project results and ICZM issues, either in the framework of CAMP Italy conferences or thanks to the participation to other events, to present CAMP Italy project and related actions.

Lessons learned from Individual Activities will be carefully analysed and considered as the basis for proposals about the ICZM implementation at national and regional level that will be presented in final Conference and Report (see section 4.4).

The following outputs are expected from the above activities:

- General co-ordination;
- Evaluation of results and durability of all the individual activities;
- Establishment of project structure and institutional arrangements;
- Co-ordinating missions, mission reports.

The following deliverables are expected:

- Inception Workshop;
- Inception Report;
- CAMP Italy Project web site;
- Progress Reports;
- Final Integrated Project Report, Follow-up Proposals, and Urgent Investment Portfolio;
- Presentation Conference, Conference Documents and the Conference Report;
- Project Terminal Report and Self-Evaluation Facts Sheet.

#### Estimated budget (in €)

Activities	MELS	Regions	MAP	TOTAL
Coordination and dissemination of the results	€94.650	€55.350	<b>72.000</b> (PAP/RAC)	€222.000

## 4.1.2 Activity 2: Capacity building

The overall objective of this horizontal activity is to build and strengthen skills and experiences, while improving competencies of public Administrations at national, regional and local scale and participating in the CAMP Italy Project.

This goal will be pursued primarily by designing and implementing innovative ways to maximize the effectiveness of the strategies outlined in documents issued by UNEP (as well as in others by EU Commission and European Parliament) on policies related to the integrated management of the coastal zone.

In particular, the specific objectives of this horizontal activity are:

- developing adequate planning skills in order to be compliant with relevant references about "integrated management of the coastal zone";
- pointing out potential criticalities in decision-supporting and decision making;
- defining and suggesting opportunities for improvement and/or corrective actions;
- moreover, this horizontal activity will promote institutional development (leveraging, whenever needed, the involvement of stakeholders and other relevant

societal components), the development of human resources and the strengthening of management systems.

Capacity building will favour an overall vision shared between the different Authorities (at national, regional and local scale) about possible planning activities aimed at both marine and terrestrial coastal areas. Lessons learned from Individual Activities will be used as a basis for highlighting the need for a tighter integration between marine and terrestrial coastal management. Awareness of problems and opportunities at different scales and organizational levels will certainly prove to be a key to an effective and consistent implementation of integrated management in coastal areas.

Capacity building activities will take place in CAMP Italy Regions as well as at national level.

The identification of potential participants to capacity building activities will take place on the basis of recommendations from the heads of the various Administrations involved (e.g. Regions, Provinces, Municipalities; Basin Authorities, Park Authorities, Port Authorities, and others who have expertise on coastal zone planning).

The PTCO and the NPC, assisted by other speakers identified in advance by the Tavolo CAMP, will develop the general program for this Action. Moreover, they will collect and analyse the results of this activity.

Before starting the capacity building activities, a questionnaire aimed at defining the level of knowledge about ICZM will be administered to the participants (Questionnaire 1). The questionnaire will allow to define not only the starting level of awareness about ICZM issues, but also to optimize the selection of the topics to be presented and discussed.

At the end of the capacity building activities, a new questionnaire (Questionnaire 2) will be administered. This questionnaire, in addition to assessing the final level of knowledge about ICZM issues, will allow to collect hints and suggestions about the best corrective actions with respect to the issues that participants had previously indicated in Questionnaire 1.

Capacity building activities will be carried out by staff of MELS, of regional and governmental agencies (either involved or not in the CAMP Italy Project, e.g. municipalities, park authority, etc.), as well as by PAP/RAC, by other RACs, and by external consultants under the guidance of the NPC. The possibility to organize a MedOpen virtual training course on ICZM is foreseen by PAP/RAC for participating regions.

The following outputs are expected from this horizontal activity:

- information and training to decision makers on planning projects in the coastal zone;
- development and improvement of performances and operating procedures of the bodies involved in the ICZM.

The following deliverables are expected:

- questionnaires;
- training activities;
- dedicated sections in reports and conferences.

## Estimated budget (in €)

Activities	MELS	Regions	MAP	TOTAL
Capacity Building	€31.550	€18.450		€50.000

#### 4.1.3 Activity 3: Data collection and management

Information about Italian coastal zones is available from many different sources, ranging from those focusing on small scale features (e.g. cadastral maps), usually managed by local Administrations, to those focusing on large or global scale thematic layers (e.g. human impacts ecosystems), marine that are usually freelv available to online (see http://www.nceas.ucsb.edu/globalmarine for the just-mentioned map). Unfortunately, information is often outdated, while different data sources are updated at different times, making synoptic data analyses very difficult, if not impossible.

The same problems affect marine data sources, although monitoring and assessment activities aimed at recent EU Directives provided a comprehensive reference of the available information as well as the basis for routine data acquisition programs. However, marine data that are potentially useful to coastal zone management are in most cases very sparse in time and space, while data sources are seldom synchronous.

Notwithstanding these limitation, effective coastal zone management (possibly coupled with maritime spatial planning, according to a recent EU draft directive) relies upon the analysis of relevant information layers, which plays a fundamental role in supporting decision-making by evaluating alternate scenarios, in predicting and mitigating impacts as well as in optimizing *siting*, layout and design of coastal zone interventions.

This Project will not solve all the information-related problems that may hinder Italian coastal zone management, but it will aim at defining guidelines for effective data interoperability between CAMP Italy regions and possibly for data sharing at national level.

From this viewpoint, CAMP individual activities will be screened to find out what type of information is considered, how information is collected, to what an extent data support decision-making, how data are analyzed, etc. Basically, CAMP individual activities will be regarded as a sample of coastal zone management activities that can highlight problems as well as solutions, while this horizontal activities will define best practices and provide guidelines to be adopted in the future from CAMP regions.

As the assessment of the ecological status of marine waters plays a major role in recent EU directives like the Water Framework Directive or the Marine Strategy Framework Directive, information about marine ecosystems will be carefully taken into account, especially in the light of the need for a better integration with terrestrial data sources (e.g. those related to Habitats, Birds, Environmental Quality Standards and Bathing Water Directives) and with other relevant EU legislation (including the Common Fisheries Policy, e.g. Council Regulation (EC) No 199/2008).

Similar attention will be paid to economic and societal analyses about the use of marine ecosystems and of the cost of their degradation, which are expected to play a very relevant role in the future, although at present they are still in their earliest stages. Needless to say, these analyses can only be performed by taking into account the ICZM rationale and therefore they can be regarded as a strong link to other regional and national programs.

Retrieving, collecting, managing and analysing the available information is a very common task in supporting decision making. Effective user-friendly tools for managing complex scenarios in the most effective way can be developed, and possible environmental changes that
may happen as a consequence of management can be predicted by mathematical models and Decision Support Systems (DSS).

The ICZM Protocol pointed out the need for collecting updated information on resources, activities, institutions, legislation and planning as a preliminary stage of any sensible action to be carried out in the coastal zone. Therefore, all the CAMP Italy specific activities, according to the Formulation and Implementation Manual of CAMP projects, must be supported by appropriate data management. This horizontal activity is obviously aimed at favoring this process as far as possible, but its ultimate goal is to define effective guidelines for data collection and management optimization, with special reference to data interoperability.

In fact, CAMP Italy will try to harmonize spatial planning data and related metadata among the participating Administrations, taking into account the INSPIRE principles and aiming at defining the basic requirements for a spatial data infrastructure (SDI), i.e. a data infrastructure implementing a framework of geographic data, metadata and tools that can be easily and interactively connected, thus making any use of spatial data as efficient and flexible as possible.

Such an SDI should encompass not only technological issues or data standards, but also policies, institutional arrangements and human resources that make the available information accessible by the widest range of potential users. Needless to say Geographic Information Systems (GIS) and Remote Sensing (RS) will play a major role.

In order to favour interoperability special attention will be paid to the selection of the most suitable open data formats for the main categories of information. In most cases open data formats already exists and are considered as *de facto* standards. For instance, the ESRI shape file, although proprietary, is the most common GIS open data format and allows storing non-topological geometry and attribute information for any spatial structure. In other cases, the most appropriate data formats have to be selected among several existing solutions or even defined on purpose, but the main objective will remain data interoperability.

While defining the guidelines for the implementation of an SDI will be the main goal of this horizontal activity, defining a shared set of thematic information layers will be a secondary, but no lesser, goal.

Finally, results obtained from the specific activities as well as their durability will be analyzed according to a shared procedure that will be outlined and then applied for all the CAMP Regions.

This horizontal activity will be supervised by the General Coordinator and by the Operational Body.

The following outputs are expected from this horizontal activity:

- overview of the data management and analysis solutions adopted by each specific activity;
- collection of all the data sets produced by the CAMP Regions to support the individual activities;
- analysis of the main features of the Information Systems of the CAMP;
- definition of the largest subset of thematic information layers which is already available in all the CAMP Regions;
- definition of possible data conversion procedure, if data formats are not homogenous among Regions;

- guidelines for achieving a full interoperability of the Information Systems of all the CAMP Regions (through a shared SDI and in compliance with INSPIRE guidelines);
- identification of a preliminary set of other sources of information that may support CAMP activities and, from a more general viewpoint, future MSP/ICZM activities;
- overview of software tools that may support MSP and ICZM;
- collection of data about results and durability of Individual Activities, to support the assessments that will be carried out by Tavolo CAMP/Operational Body.

The following deliverables are expected:

- sections of the inception workshop and report;
- sections of the CAMP Italy web site;
- sections of progress reports;
- sections of final report and conference;
- guidelines for data interoperability.

# Estimated budget (in €)

Activities	MELS	Regions	MAP	TOTAL
Data collection and management	€31.550	€18.450		€50.000

# 4.1.4 Activity 4: Institutional coordination and public participation

This activity aims at promoting vertical integration and the collaboration between Administrations for a better coastal management, the exchange of information and transparency, and in particular at transferring, sharing and discussing what will emerge from the critical analysis of the specific CAMP Italy activities to/with those entities, both public and private, concerned with coastal zones and enabled to ensure an effective broadening of appropriate participation in future decision-making and spatial planning processes.

In particular, it has the following general objectives:

- with reference to the specific CAMP Italy activities, promoting cross-sectorial institutional coordination among the various administrative services and regional and local authorities competent in coastal zones, with the ultimate aim of facilitating the creation of an ICZM National network;
- ensuring the adequate and timely participation in the transparent decision-making process by local populations and stakeholders (e.g. private and public workers associations, environmental groups, NGOs, general public).

Ensuring institutional coordination among the various authorities (national, regional and local) competent for both the marine and the land parts of coastal zones is mandatory to strengthen the coherence and effectiveness of the coastal strategies, plans and programs. The first general objective of promoting cross-sectorial institutional coordination is functional to creating and testing the National ICZM network which will be necessarily involved in the activities set out, among others, in Article 32 (Institutional Coordination) of the ICZM Protocol of the Barcelona Convention: to prepare by the Secretariat of the Barcelona Convention a regular report on the state and development of integrated coastal zone management in the Mediterranean Sea with a view to facilitating implementation of the Protocol; to participate in a Mediterranean coastal zone network pursuant to Article 16; to prepare and implement the Italian National ICZM Strategy pursuant to Article 18; to cooperate in training activities and in scientific and technical research programs pursuant to Article 25; to coordinate, when appropriate, the management of transboundary coastal zones pursuant to Article 28.

Seemingly, ensuring appropriate public and institutional participation is an important and necessary element for the implementation of initiatives and actions designed to promote sustainable economic and social development in general, but this is especially true in the field of the ICZM, where the flow of inputs and "bottom-up" initiatives is a top priority in order to create suited conditions for sharing the benefits and limitations. The second general objective of ensuring the adequate and timely participation by local populations and stakeholders is functional to elaborate and testing the adequate instruments, procedures and measures specifically dedicated to ensure the appropriate involvement of territorial communities and public entities concerned, economic operators, non-governmental organizations, social actors and the public concerned in the phases of the formulation and implementation of coastal and marine strategies, plans and programmes or projects, as indicated in Article 14 of ICZM Protocol (Participation).

The two general objectives can be thus divided into 6 specific goals:

i. ensuring active involvement of stakeholders, institutions and general public in the implementation of CAMP Italy Project;

- ii. providing information in an adequate, timely and effective manner, ensuring a full and transparent dissemination/information about the activities carried out in both horizontal and pilot actions of the CAMP Italy project (objectives, methodology, expected results);
- iii. building consensus from the public, economic and social partnership and stakeholders;
- iv. stimulating debate and alternate viewpoints to elaborate and collect alternatives proposals in order to: mitigate impacts on the environment, resolve conflicts among sectors, define mediation or conciliation procedures;
- contributing to the public, private community knowledge regarding the principles and objectives of the ICZM Protocol, and to the promotion of awareness regarding the benefits of the ICZM;
- vi. individuating the appropriate bodies or mechanisms, in order to avoid sectorial approaches and to raise awareness on profit opportunities coming from partnership.

The critical analysis of the specific CAMP Italy activities will lead to a clear understanding of the specific factors of success and/or failure of the implementation process of ICZM, declined to the level of individual CAMP regions and of the inter-regional level: it is therefore an analysis of the factors which may favour or hinder the process implementation of ICZM at the national level. This activity is proposed, therefore, to inform competent national, regional and local coastal zone authorities, stakeholders and the general public to minimize the effects of the critical elements for the implementation of ICZM at the National level and to enhance those that represent the strengths and virtuous elements available and highlighted through CAMP Italy Project.

Tavolo CAMP (TC), PTCO, NPC, MELS and CAMP Regions with reference to the objectives, and in harmony with the acting entities, propose, implement and coordinate the Activity 4. TC has decision-making power on all activities and is flanked by the PTCO and the NPC. PTCO, NPC and MELS also have an operational role, being responsible for the implementation of all activities at the national level (see below). CAMP Regions play an advisory role for the activities at a national level, while they are responsible for the implementation of all activities at the regional level (see below).

The objectives will be achieved through four sub-activities, which involve different approaches and instruments, as outlined below.

### Analysis of the specific CAMP Italy activities

This sub-activity provides a comparative analysis of the individual activities CAMP depending on their progress. It aims to identify the constraints and administrative problems that may hinder future actions in the field of MSP and ICZM. It will therefore lead to the definition of shared procedures – in the spirit MSP and ICZM – for the resolution of conflicts, mitigation of impacts, the environmental restoration/conservation, land use planning, etc..

### Communication

This sub-activity provides the elaboration of a communication strategy, at both regional (i.e. CAMP Regions) and National levels, which will be functional to promoting institutional coordination and to facilitate participation. At National level the main beneficiaries of this

communication will be a range of various end-users: Italian coastal zone management community, employees at high management level in National administrations, managers of nature reserves along the coast, managers of coastal and marine related projects, universities, National stakeholders (e.g. fisheries and aquaculture and or tourism national organizations), researcher communities. On the other hand, at regional level, the main beneficiaries will be: policy makers and decision-makers such as coastal mayors, employees at high management level in regional administration, local representatives and site managers of nature reserves along the coast, experts working for a provincial administration, the general public, regional/local coastal stakeholders (e.g. ports, fisheries and aquaculture local organizations, private enterprises; local researcher communities.

Moreover, the creation of a Project Website (Italian version and English version) to provide information about the CAMP Italy Project and background information on the objectives, expected results, involved partners and contacts. It will also serve as a channel of communication for news related to the events of the project and will acting as a portal for access to the forum (ref. Activity 1), it will thus provide an interface for exchanging and sharing information with (and between) stakeholders. Web- and forum-based communication will be also functional to other planned activities: for instance, by sending newsletters to a mailing list and by allowing electronic dissemination of downloadable (PDF) documents. Obviously, appropriate content management of the website and forum moderation are planned. Results from the Project will be also presented and discussed by contributing to specific events such as "Coast Day".

#### Institutional Coordination

In the field of ICZM, there is a need for closer coordination between national authorities and regional and local bodies in relation to the various authorizations for activities that may influence coastal zones. Therefore, opportune and adequate joint consultative bodies or joint decision-making procedures will be discussed. For this reason CAMP Italy will select an opportune set of Institutions at National and regional level to propose and test inter alia: consultative bodies, inquiries or public hearings procedures and possible partnerships. This "experimental" institutional coordination will be carried out with reference to the specific CAMP Italy activities: by highlighting opportunities and advantages coming from the application of MSP and ICZM rationale. CAMP Italy results will thus be used to measure the efficacy of ICZM strategies and approaches identified, to discuss the elaborated ICZM instruments and related weaknesses and strengths for the governance applied to specific issues such as marine and coastal spatial planning and management.

### Participation

Different stakeholders have both different contributions and different consultation needs at each stage of the decision process. Therefore a participation strategy will be developed according to the stakeholders and to the level at which they may be involved: low level of public involvement or influence (inform, educate, share or disseminate information); mid-level (gather information, views); high level of public involvement or influence (discuss through two-way dialogue); high level of public involvement or influence (fully engage on complex issues, partner in the implementation of solutions). A list of possible stakeholders might include: the general public; residents of coastal areas, representatives or elected officials of local coastal communities; regional government ministries, local NGOs, local pressure groups; trade unions; media; the scientific research community; waste producers.

In particular at regional level several participation instruments will be activated:

- informing the public through events dedicated to provide citizens of the different coastal municipalities with the fundamental principles and objective of CAMP Italy;
- involving the public by focus group dedicated to the actual involvement of stakeholders in the analysis and discussion of CAMP Italy results and outputs;
- stimulating and promoting the structuring and functioning of Partnerships of two or more organizations: (i) between local authorities and multi-disciplinary academic experts; (ii) among homogenous entities (i.e. fishermen, tourist operators, islands populations, etc.) co-operating as a unit to influence developments for their common good, perform effective lobbying as an organization that works at the political, public official levels, improve exchange of experiences and ideas, enhance abilities to develop projects.

This activity would also offer the opportunity to run pilot experiences to test the appropriate governance allowing participation, such as: (i) verifying how to facilitate public participation, to CAMP Italy in particular and to ICZM process in general, through new communication technologies (e.g. mobile data collection); (ii) setting of advisory committees or steering groups in a voluntary way; (iii) analyzing the procedures followed where public consultation is mandatory (e.g. Environmental Impact Assessment, Strategic Impact Assessment, spatial planning procedures).

The following deliverables are expected from the above activities:

- Website contents;
- Activation of a web Forum;
- Dissemination publications;
- e-newsletter;
- ICZM Italian network (mailing list, contacts);
- Proposal of structure/content of 'experimental' institutional coordination;
- National conference (documents, report);
- Regional conferences (documents, reports);
- Internal reports and reports for the public.

### Estimated budget (in €)

Activities	MELS	Regions	MAP	TOTAL
Institutional Coordination and Public Participation	€94.650	€55.350		€150.000

# 4.2 Individual Activities

The connection between terrestrial and marine areas is characterized by a fragile equilibrium, which is often disturbed by processes related to human activities in a diverse set of natural environments. In the CAMP Italy Project, one of the most important factors is the variety of types of coastal areas of the 3 selected regions. Such a variety is not just about the physical environment (morphology, geomorphology, geology, etc..) nor about the diversity of biological communities hosted by these environments, but also about the different aspects of economics and sociology, which, depending on the history of the different areas, gave rise to a different impact of the various human activities (agriculture, industry, tourism, etc.).

The predominance of one or more of these connotations, in combination with the different times of human settlements along the coasts, produced a very diverse set of situations, where the natural environment and human activities have often produced completely different landscapes.

In some cases man has maintained a close relationship with the ecosystem in which he had settled, adapting and conforming to the natural environment; in other cases, especially in the most recent decades, human settlements have deeply altered the natural system, often without a thorough knowledge of the ecosystem itself and its rules, thus producing a non-positive cascade of natural phenomena, with negative effects also on the economy.

Therefore, while investigating similar issues in the integrated management of the coastal zone, the project will face the challenge of completely different scenarios. As a consequence, the possible solutions could not be common to the different areas, as they might even point towards completely opposite directions, while methods and criteria can be possibly shared.

It is therefore useful to group the activities belonging to the integrated management of the coastal zone into different fields. For example, the management of phenomena such as the loss of coastline by erosion may fall within the issues of land use planning, protection of biodiversity, or, even, socio-economic protection of a sandy beach. It should be noted that some of these actions may lie outside the competencies of State and of the MATTM.

The ICZM Protocol and the 2002 European Union Recommendation, however, pointed out that the management should use an ecosystem approach, hence the responsibility of the MATTM. Accordingly, the individual activities of CAMP Italy project belong, in relation to the specific objectives, to the following actions:

- Objective 1. Improve the coordination capacities among different structures involved in coastal zone management (governance for coastal area) and both vertical (network of subjects) and horizontal (industry sectors) integration.
- Action 1. Planning of marine and terrestrial coastal areas.
- Objective 2. Maintenance of the ecosystem service flow through the reduction and control of human pressures and development of adaptation to the effects of climate change.
- Action 2. Protection, preservation and restoration of coastal and marine habitats.
- **Objective 3.** Verification of the sustainability of socio-economic activities which stress the coastal area through application of the ecosystem and the economic

evaluation of ecosystem services (PES, TEEB, etc..); in particular tourism, fishing, coastal defence.

• Action 3. Sustainability of socio-economic stress on the coastal zone (in particular tourism, fishery, structures for coastal defense).

The following sections describe all the individual activities, giving an indication of what is to be done during the CAMP Italy project.

# Estimated total budget for the individual activities (€)

Activity	MELS	Regions	ΜΑΡ	TOTAL
Individual Activities	€906.800	€3.760.200		€4.667.000

# 4.2.1 Monitoring the effects of Tuscanian beach nourishment activities south of Ansedonia

# Background

CAMP Italy project will contribute to enhance coastal regions adaptive capacity to climate and non-climate impacts and support the preparation of ICZM plans at regional/local level for coastal adaptation to be endorsed by local coastal authorities. Furthermore, the project will develop a shared approach to evaluate coastal vulnerability and to develop governance systems that will be tested in specific pilot project areas. Pilot projects will focus on strengthening the natural resilience, building adaptive capacity and defining strategies and a governance system to effective implement them. Tuscany region actions deal with the problem of coastal erosion, loss of areas of economic value, social and ecological weakening of the beach-dune system with risk from flooding by waves of surrounding productive areas, loss and fragmentation of natural habitats. In particular, a high level of naturalness and lack of coastal infrastructure characterize the southern stretch of the Tuscan coast.

### **Objectives of the activity**

With reference to the erosion process threatening Mediterranean coasts, and to the principles and objectives of ICZM Protocol, the general objective of this activity is to analyze and to evaluate the strategic context through which municipalities, professional agencies and scientific institutions faced and solved the coastal erosion occurring along the southern Tuscany coast.

The specific objectives of this activity are:

- Analyzing the structure and functioning of the governance dealing with this issue at regional and interregional;
- Monitoring the current state of the beach in relation to reconstruction and defence of the Tuscanian beaches south of Capalbio, highlighting the impact of coastal structures mentioned above as well as other impacts (e.g. from beach uses).
- Evaluating the effectiveness of the recent restoration of the equilibrium profile of the beaches of Capalbio, by performing a series of surveys on the evolution of the shoreline and the morphology of the seabed, a sieve analysis on samples of emerged and submerged sands in the intervention area to assess the dynamics of used sediments;
- Evaluating the intervention to rebalance the beach Capalbio, which was performed by beach nourishment with near shore sediments, protected by a series of brushes made up of submerged geo-polypropylene containers filled with sand, and the defence of dune belt through windbreaks.

# Outputs

- Analysis of the structure and functioning of the governance dealing with these issues;
- Evaluation of positive and negative effects, at the interregional level, of the interventions defense of the coastline and coastal infrastructure, evaluated by

means of a model of cost-benefit analysis applied according to the criteria of ICZM.

- Analysis of effectiveness of the specific innovative recovery and rebalancing of the coast of Macchiatonda in the municipality of Capalbio. In particular, the durability of the intervention using of geo-polypropylene tubes filled with sand, beach nourishment with sand taken on the seabed and the realization of works windbreak for the recovery of the dune system.
- Elaborating an intervention and maintenance protocol to be implemented in the future in the same area;
- Strategy for transferring best practices and guidelines in other interregional context and for their scaling up at National level (main policy options and ICZM National Strategy);
- Feeding the existing database on this interregional coast trait and then enhance the possibility to define more accurately the evolutionary dynamics of the beach, especially in light of the recent flooding and severe winter storms;
- Highlighting costs and benefits of hard structures and soft techniques as coastal flood defence mechanisms and as measures to prevent/reduce coastal erosion, with strong reference to the socio-economic development plan of the interested areas;
- Elaborating Action Plan for the implementation of a coastal protection scheme, and active policy concerning coastal erosion, based on agreements between municipalities, between contiguous Italian regions and harmonized with normative framework at National level.

### Responsible for implementation

**Tuscany Region** 

Individual Activity	MELS	Regions	MAP	TOTAL
Monitoring the effects of Tuscanian beach nourishment activities south of Capalbio	€26.667	€40.000		€66.667

# 4.2.2 Evaluating feasibility and effectiveness of the use of alluvial sediments extracted from the Magra river drainage basin in order to restore eroding beaches in the annexed coastal cell

# Background

Tuscany region actions deal with the problem of coastal erosion, loss of areas of economic value, social and ecological weakening of the beach-dune system with risk from flooding by waves of surrounding productive areas, loss and fragmentation of natural habitats. In the stretch of Ligurian – Tuscan coast, fed by the river Magra, the retreat of the shoreline is due to another type of human action: the excessive and reckless removal of material from streambed that occurred after World War II up to the mid-80s of last century. The first type of interventions to contrast the erosive process were implemented through the construction of structural works that have contributed over the long term, to further stiffen the coast resulting in the removal of sediment from the active profile of the beach and then accentuating the problems of erosion. The Tuscan sub-area is characterized by infrastructures that have affected the coastal dynamics in the area, such as the port of Marina di Carrara, but also by pressures mainly related to the use of coastal resources for tourism purposes.

### **Objectives of the activity**

The aim is to implement the procedural protocol reuse of alluvial sediments extracted from the river system Magra-Vara, including those accumulated in the reservoirs. In facts, as huge volumes of sand and gravel have become available along the riverbed of Magra river, due to recent flooding events, these volumes would be dredged and transported on the beaches of relevance, after consideration of the chemical – physical compatibility, with the aim of restoring the hydraulic conditions. The specific objectives of this activity are:

- Analyzing the structure and functioning of the governance dealing with this issue at regional and interregional;
- Evaluating the effectiveness of the reuse of alluvial sediments extracted from river systems;

### Outputs

- Analysis of the structure and functioning of the governance dealing with these issues;
- Evaluation of positive and negative effects, at the interregional level, of the the
  effectiveness of the reuse of alluvial sediments extracted from river systems,
  evaluated by means of a model of cost-benefit analysis applied according to the
  criteria of ICZM.
- Elaborating an intervention and maintenance protocol to be implemented in the future in the same area;
- Strategy for transferring best practices and guidelines in other interregional context and for their scaling up at National level (main policy options and ICZM National Strategy);
- Elaborating Action Plan for the implementation of a coastal protection scheme, and active policy concerning coastal erosion, based on agreements between

municipalities, between contiguous Italian regions and harmonized with normative framework at National level.

# Responsible for implementation

**Tuscany Region** 

Individual Activity	MELS	Regions	MAP	TOTAL
Evaluating feasibility and effectiveness of the use of alluvial sediments extracted from the Magra river drainage basin in order to restore eroding beaches in the annexed coastal cell.	€100.000	€150.000		€250.000

# 4.2.3 Protection of the dunes of Lacona (Isola d'Elba)

# Background

Tuscany region actions deal with the problem of coastal erosion, loss of areas of economic value, social and ecological weakening of the beach-dune system with risk from flooding by waves of surrounding productive areas, loss and fragmentation of natural habitats.

# **Objectives of the activity**

The general objective of this activity is to elaborate a standard protocol for the rehabilitation and consolidation of dune ridges and the conservation of wildlife and plant biodiversity, for the various peculiar species that inhabit the dune environment. The ultimate aim is to support the restoration and preservation of the dune system of the beach of Lacona (Isola d'Elba). The dune of Lacona is the last relic of the dune system of Tuscan islands. This is an area where limited habitat that remain in Europe are considered to be of primary importance. In particular, this activity will re-naturalise the degraded coastal dunes, will protect those still existing. This will be performed through the involvement of the local population. It will support the strategy of buying the private property existing within the dune system to transform them into infrastructure dedicated to the visit and environmental education. The specific objectives of this activity are:

- Analyzing the structure and functioning of the governance dealing with this issue at regional and National (the operating protocol could be developed in collaboration with the Agency Conservatoria the coast of Sardinia Region and the Region of Emilia -Romagna tied to individual activities of the same.);
- Monitoring the current state of the Monitoring of the current state of the dune and the beach of Lacona, in light of recent flooding events that have characterized the Island of Elba;

### Outputs

- Analysis of the structure and functioning of the governance dealing with these issues;
- Evaluation of positive and negative effects of selected policy options (at regional and National level) to restore and protect dunes in areas with considerable recreational and environmental function (cost-benefit analysis applied according to the criteria of ICZM);
- Elaborating an intervention and maintenance protocol to be implemented in the future in the same area;
- Strategy for transferring best practices and guidelines in other interregional context and for their scaling up at National level (main policy options and ICZM National Strategy);
- Highlighting costs and benefits for the other economic sectors affected by actions of restoring and protecting dunes systems, when priority is their environmental function;

 Elaborating Action Plan for the implementation the operative protocol, based on agreements between municipalities, between contiguous Italian regions and harmonized with normative framework at National level.

# Responsible for implementation

**Tuscany Region** 

Individual Activity	MELS	Regions	MAP	TOTAL
Protection of the dunes of Lacona (Isola d'Elba).	€13.333	€20.000		€33.333

# 4.2.4 Regulations for the removal of sand and material from marine quarries

# Background

Strategic management of beach protection for sustainable development of coastal areas of the Mediterranean Sea is currently a topic of great interest, especially in the sea territorial areas in front of Emilia-Romagna's coast and the adjacent coastal areas. The innovative character of the activity is mainly in the opportunity to examine issues as important as that of changes in turbidity and sedimentation rate in different geographical areas: this is a very important aspect in view of the remarkable biodiversity of Mediterranean Sea.

To support the implementation of the ICZM Protocol, for the coming years, it seems crucial fill the gap in legislative and administrative standardization and authorization procedures to operate and control the use of submarine sand deposits for the defense of the coast.

The problems associated with the exploitation of those reserves, taking strategic interest for many Italian coastal regions, now require a framework at a national level.

These marine quarries, which are identified by most Italian regions in front of their coasts, are always present on the platform in front of the coastal region, both inside and outside the territorial waters: it is therefore necessary to push the validity of those addresses to the center line between the Italian coast and those of the bordering countries.

### Objectives of the activity

This individual activity aims at providing guidelines for standardization at the national level about the research and the exploitation authorization of use of sedimentary accumulations above and below the seabed, within and beyond the boundary of territorial waters.

The indications for use of marine deposits must consider the preferences of use for beach nourishment as already outlined at the national level by Legislative Decree 152/2006 art. 109, according to the administrative decentralization in accordance with articles. 33-34-35 Legislative Decree no. 112/1998 and the expertises assumed by the Regions to defend the coast from erosion and integrated management of coastal areas in art. 89 of the same.

This activity comes as new capitalization and continuation of what is already undertaken in Beachmed-e Project (and in particular Obsemedi – measure 4.1) with two specific events on this topic (verbal final documents letters to the ministry, etc) On 23 June 2006 Rome, February 22, 2007 in Bologna. (see website www.Beachmed.it, event log).

Preparation of guidelines governing the exploration and production of sediments in the seabed, to be submitted to the Ministry of the Environment

# Outputs

- Final version of guidelines to be submitted to the Ministry of the Environment, as a valuable tool for public administrations to regulate the taking of marine sands and aggregates from sea quarries;
- Proposal of Regional Strategy for the protection and Governance of coastal areas;
- Action plan for the Implementation of guidelines to provide a valuable tool for Public Administrations about the regulation for the removal of sand and material from marine quarries.

# Responsible for implementation

Emilia-Romagna Region

Individual Activity	MELS	Regions	МАР	TOTAL
Regulations for the removal of sand and material from marine quarries	€6.667	€10.000		€16.667

# 4.2.5 Operational protocol for the reestablishment and consolidation of the (natural or reconstructed) dune belts

### Background

In the Emilia-Romagna region, as in many other Mediterranean low-lying coastal areas, the beaches and the sandy coast line are often in precarious balance because of an increasing probability of erosion and for a constant flooding risk for unpredictable storm surge events.

The ICZM Guidelines, approved by the Region of Emilia -Romagna in 2005, define between the various actions for the protection and rehabilitation of coastal dune also their reconstruction, where possible, on the back of the beaches and the introduction of a legislation to protect the dunes that still exist and for their recovery and rehabilitation.

In addition to the decrease in river sediment inputs and the increasing of subsidence effect, one of the main factors of risk on coastal areas is determined by the gradual dismantling of the natural dune structure. The reserve sand for beach nourishment works as defense of natural beaches and offers a good contrast to the intrusion of the salt wedge in defense of the freshwater aquifers of the immediate hinterland.

Once the sand dunes were extended along much of the coastal region. To date, of over 130 km of coastline in Emilia – Romagna only 31 km show the presence of evident natural dunes, of which about 12 km in the province of Ferrara, 18 km in the province of Ravenna, and the remainder is distributed along the southernmost part of the coastline. The natural dunes, even outside of protected natural areas, are now elements that are protected by regional laws.

### **Objectives of the activity**

The objectives refer to the implementation of experience and technical potential obtained for transferability of projects in other sites in the coastal area of Ferrara and or Ravenna area of the Po Delta Park. The real goal aims to develop a Guide for the redevelopment and consolidation of sandy dunes, as part of a broader effort to enhance their importance from the environmental tourism point of view, as well as that of their defense function against the risk of marine ingression.

Works of this kind become very important in terms of conservation of wildlife and biodiversity of plant and animals for the various peculiar species that inhabit the dune environment.

### **Outputs**

Representing the output of a protocol, the parties involved will be interested in the implementation processes aimed at environmental rehabilitation of the dune contexts, such involvement requires a system of protection against environments reconstituted and management. As output result is expected bringing an operational protocol for the rehabilitation and consolidation of sandy dunes, natural or remanufactured. It is so important that this operative protocol will be applicable to the Emila-Romagna's dune areas, but even in other contexts of Mediterranean coastal areas, including for example elements related to measures required by the regional plan on marine litter to enhance beach sustainability.

Therefore, the expected outputs of this activity are:

- Operative Guide for the rehabilitation consolidation of natural sandy dune and/or remanufactured sandy dune;
- Draft operational Plan for the implementation process of the above mentioned Protocol.

# Responsible for implementation

Emilia-Romagna Region

Individual Activity	MELS	Regions	ΜΑΡ	TOTAL
Operational protocol for the reestablishment and consolidation of the (natural or reconstructed) dune belts	€5.333	€8.000		€13.333

# 4.2.6 Conservation of marine and coastal biodiversity with special reference to the conservation of minor species

### Background

In light of the recognized potential of spawning grounds and nursery, coastal areas must be subject to effective retention policy. While recognizing these needs is also known that the same areas are significantly affected by anthropogenic impacts resulting from the emission of pollutants and from the laying of infrastructures. It can be therefore necessary to mitigate the pressures through programs for environmental protection and restoration. The protection of nature and biodiversity can be a very challenging task, because it must take into account many different measures aimed at protecting, promoting or developing the natural heritage.

Conservation and protection of biodiversity in marine, coastal and transition areas are issues of great interest not only at European level, but also for the entire Mediterranean basin. According to the IUCN (International Union for Conservation of Nature), many populations of different plant and animal species in the world are already greatly decreased, and, in many cases are still rapidly decreasing. This is the last step before declaring the extinction of these organisms that today still live in the wild. Particular protection should be addressed to the so-called "minor species" (reptiles and amphibians) native of north Adriatic marine areas and lagoons of Emilia Romagna. Of great concern, for example, the large dying of *Caretta caretta* turtle (included in Annex II to the 'Protocol concerning Specially Protected Areas and Biological Diversity in the Mediterranean' of the Barcelona Convention) both for Balanidi infestation and for strong hypothermia.

### Objectives of the activity

The protection is accomplished through different techniques that, starting from the knowledge of the biodiversity level and the factors that may threaten it, relate, for example, the in situ and ex situ conservation of plant and animal species, the preservation and restoration of habitat in which the species carry out their biological cycle, the maintenance and creation of an appropriate ecological connectivity between the various environments. Adequate knowledge and technical procedures are, however, only a necessary condition, as their full application can be successful only if they are translated into clear and effective rules that define who has the responsibility to enforce them, which are the objects of protection, which are the modalities of implementation, what are the penalties for those who transgress, what are the financial resources committed.

This activity involves the implementation of measures inspired by the criterion of environmental sustainability and aimed at durable and long-term effects. At the same time, among the outputs it will include proposals for actions aimed at the sustainable development of traditional activities and functions of new educational and training which could cause the birth of new companies and small local economies non-invasive and natural little impact on the environment.

# Outputs

When people realize how much we depend on biodiversity and the integrity of ecosystems around us, they agree on the need to preserve and express the desire to do better and to do

something about it. This way it becomes essential to set up research campaigns and to carry them out in conjunction with environmental awareness campaigns.

Promotion of a tactile and visual campaign, during which it is possible to show and teach how biodiversity and its delicate balance may survive, will prove really important.

The campaign will develop in two phases: at first, it will attempt to bring citizens closer to the concept of biodiversity, explaining what it represents, what is the role of human beings and how it is affected by the modern world. At the same time, it will show just how biodiversity is essential for humanity as well as the problems related to its decline. During the second phase, the focus will be on "emotional" aspects trying to link what is important in people's daily life with biodiversity safeguard and with the resulting benefits. This way we will try to motivate people to act in support of biodiversity.

In summary, the outputs will include:

- Preparation of Action plan for the re-naturalization of the river mouths and degraded coastal areas (if possible with the establishment of Biologically Protected Areas), working also to preserve and enhance of those that still exist;
- Preparation of Guidelines for promoting sustainable artisanal fisheries operating with selective gear;
- Reporting about pilot experiences of habitat restoration and recovery of hydraulic properties of coastal lagoons;
- Promotion strategy for environmental educational programs at regional and national level.

# Responsible for implementation

Fondazione Centro Ricerche Marine di Cesenatico, Ente di Gestione del Parco del Delta del Po, Regione Emilia-Romagna

Individual Activity	MELS	Regions	MAP	TOTAL
Conservation of marine and coastal biodiversity with special reference to the conservation of minor species	€46.534	€69.800		€116.334

# 4.2.7 Development and exploitation of new forms of sustainable tourism in protected natural areas

# Background

In the "Delta del Po" Park (Emilia-Romagna) the fragmentation of landscape produces a lot of relict natural areas surrounded by a more or less diverse territorial matrix. Assuming that it is not possible preserve areas of natural importance without control and without knowing which human activities are included, it is essential to design and create new forms and possibilities of eco-tourism, in order to spread more and more the message of respect and enjoyment of the natural heritage.

The respect for and knowledge of nature acquires greater value and is most effective when the user is involved and "palpable".

It becomes important to create land and sea routes, to organize workshops and informative fairs, to decide where to drive tourists to discover environments as well as varied and important information that can be found precisely in the area studied. Nowadays, the current protection policies obtained through specific constraints and reducing the causes of degradation are not always so effective. It is therefore increasingly needed to focus on improving the balance of nature vs. anthropic disturbances, taking into account, where possible, the quality and value of natural elements.

Tourism and Environmental Education should be the main activities, suitable for connecting the different parts of the offer of the natural system that allow to make such recovery operations. The presence of a vast and varied audience would also contribute to the demand for products and services that should have labeling ecological quality.

### Objectives of the activity

Among the mechanisms that may trigger sustainable tourism, the realization of naturalistic – cultural paths are able to increase the potential of the sites to be promoted. Lately, at European level, to increase the level of research activities, also to get people involved at broader level, the need has arisen to link research and sustainable tourism to the concept of citizen science. Formally, citizen science has been defined as "the systematic collection and analysis of data; development of technology; testing of natural phenomena; and the dissemination of these activities by researchers on a primarily avocational basis". Citizen science is sometimes called "public participation in scientific research." Many citizen-science projects are now taking advantage of mobile phones and other consumer electronic devices with recording capabilities for easy data collection. In compliance with the fundamental criteria of sustainability the proposed action considers the possibility of introducing new functions in the territory, through which further the purposes of maintenance and improvement of environmental quality and the creation of new uses of land resources.

This activity, involving a coordinated effort between the public and third parties, aims to create a regional network of companies operating with producing local products and operating by preserving and promoting the traditional activities.

# Outputs

- Preparation of Operative Plans for effective Environmental disclosure;
- Creation of 10 land-sea routes;
- 3 informational workshops;
- Proposal for New data collection strategies involving science citizens.

# Responsible for implementation

Fondazione Centro Ricerche Marine di Cesenatico, Ente di Gestione del Parco del Delta del Po

Individual Activity	MELS	Regions	МАР	TOTAL
Development and exploitation of new forms of sustainable tourism in protected natural areas	€15.333	€23.000		€38.333

# 4.2.8 Education and communication to sustainability

#### Background

The protection of the environment in the field of tourism is now a priority for all countries of the Mediterranean basin and its importance has been highlighted by the European Union through several Measures, Policies and Intervention Programmes. So many European projects involve people like science citizens: a great chance to obtain a lot of useful data and an education and communication to environmental sustainability.

To get the right level of communication and environmental education it must be ensured the transfer of qualified information about the episodes ecological diseases, such as eutrophication, mucilage, weed presence of jellyfish, drop in fishing, and so on.

This principle has already been exploited in the past, on occasions of particular emergencies, and gave excellent results.

A proper and effective communication about issues related to complex ecological and natural systems can result only from authoritative sources.

Following a thorough Stakeholder Analysis, conducted by a specific Drafting Group set up ad hoc, it is possible identify the best channels for a good dissemination and communication at various levels to different groups of interest.

The diffusion of environmental management systems can be enhanced by the synergy between existing businesses, institutional traders and trade associations, with potential gains in terms of area rather than a single production unit.

Choosing to operate on the side of communication to deepen the use of environmental management tools such as communication tools implies a marked improvement in the relationship with the authorities and stakeholders, as well as an improvement in the awareness and environmental sensitivity of public opinion.

#### **Objectives of the activity**

The attention on the issue of environmental liability must be promoted by Institutions and Entities. Then the evaluation of a wide spectrum of variables for a correct observation of the impact of the management on the territorial, economic and social reality should be carefully considered.

This means promoting and supporting a consistent and precise communication with all stakeholders, also through new methodologies (supporting the ones already used).

It becomes important an assessment of the stakeholders for choosing the most appropriate tools with which to set up a proper and continuous activity of specific environmental communication.

The objective of this activity is thus to define an effective communication strategy, constructed with the following methodological approach:

- a) identification and characterization of the stakeholders (who?);
- b) focusing communicational objectives among the various stakeholders (why?);
- c) definition of the contents of the communication on sustainability issues (what?);
- d) planning of a Communication Plan (how?).

The main problem is the heterogeneity of the technical skills, scientific knowledge, culture and sensitivity to the environment of the parties involved: so this activity it will be set for this survey through questionnaires and interviews.

# Outputs

In compliance with the fundamental criteria of sustainability the proposed activity considers the possibility of introducing new functions in the territory, through which further the purposes of maintenance and improvement of environmental quality and the creation of new uses of land resources. The activity involves a coordinated effort between the public and third parties, proposing the creation of a regional network of companies that can create an offer based on local products and traditional activities.

The main expected outputs are:

- Stakeholder Analysis report;
- Preparation of a strategy for updating and managing a web-based communication (mailing lists, forms, leaflets, websites and social networks);
- Preparation of an action plan for creating a Web Journal emailed and downloaded from website that can keep update stakeholders and citizens at the same time;
- Promotion and organization of dissemination events, conferences and seminars;
- Preparation of a proposal for the creation of a web streaming tv that can disseminate information on a larger scale and accessible;
- Proposals for contents and structure of documentaries and educational events concerning matters to be disseminated;

### Responsible for implementation

Fondazione Centro Ricerche Marine, Regione Emilia-Romagna

Individual Activity	MELS	Regions	MAP	TOTAL
Education and Communication to sustainability	€9.333	€14.000		€23.333

# 4.2.9 Implementation of specific activities aiming to the sustainable use of beaches and the protection of coastal zones

# Background

The activity proposed by the regional Agency is related to the needs of local governments to improve their planning, enhancement and coastal landscape management tools.

The lack of regulation related to the sustainable use of coastal areas generate improper and irresponsible uses that contribute to the degradation of the environment and especially the beach.

The project fills this gap by addressing the issue of protection and reconstruction of sandy coastline through:

- the development of an overall management strategy for the resources' use;
- the support of low-impact actions;
- actions that indirectly affect the system, i.e. reducing the effects of human pressure;
- the activation of local governance, participatory processes and good practice.

### **Objectives of the activity**

The general objective is the protection and restoration of structural and functional natural environmental resources (sandy beaches) which are at risk or already degraded.

The specific objectives are:

- Operationally develop the concepts of relocation and reduction of anthropogenic load;
- activate, through the beach planning and management, a new and balanced distribution of functions and use of space;
- introduce physical elements for the protection and rehabilitation of environmental components, including elements to reduce marine litter in order to enhance beach sustainability;
- implement accessibility systems consciously designed and access regulation based on carrying capacity;
- increase the level of participation and environmental responsibility of operators and users of the beaches to encourage sustainable behaviour;
- Local municipality capacity building on integrated coastal zone management and beach ecosystems protection.

The activity consists in the selection, by public notice, of the best project proposals written by municipalities falling in the CAMP area.

### Outputs

The expected outputs of the project are:

- dune systems consolidated and protected from erosion;
- increased resilience of the physical beach-dune systems;

- increased awareness of local communities and institutions on the specificity and importance of coastal systems;
- reduction of threats and problems that cause erosion of sandy coasts (through the rehabilitation of natural ecosystems);
- shared responsibilities and duties between the regional administrations, local authorities and private operators.

### Responsible for implementation

Agenzia Conservatoria delle coste, Department of Environment Defence of the Autonomous Region of Sardinia, 6 municipalities and 1 group of municipalities of CAMP Sardinia sub-areas, Stakeholders.

Individual Activity	MELS	Regions	МАР	TOTAL
Implementation of specific activities aiming to the sustainable use of beaches and the protection of coastal	€360.000	€540.000		€900.000

# 4.2.10 Enhancement of historic-architectural heritage for the creation of the first eco-hostel in the coastal area for sustainable local development (Buggeru site)

# Background

The territory of Buggeru, with its natural areas and industrial archaeology, is part of the environmental and cultural system of Sulcis-Iglesiente, and nowadays is affected by strong depopulation phenomenon, a progressively aging population, a high rate of unemployment, especially youth unemployment and a low average level of education. The project regards the construction of the first eco-hostel in Sardinia and takes into account the structural weakness of the local context and the opportunities to use social tourism as a driving force for the development of local resources. The project is characterized by technological and design choices in order to reach zero impact, management strategies in order to maximize the local economic benefits and to sensitize customers on responsible tourism. The initiative is part of a broader strategy for the creation of a Network of Sardinian Eco-Hostels, through the recovery, sustainable management and networking of certain properties located in areas of coastal preservation of particular landscape and environmental.

### **Objectives of the activity**

The general objective is to carry out the restoration and reuse of historic public-owned estates, including the need to build the requirements for environmental excellence of tourist facilities.

The specific objectives are:

- to apply, in the conversion of existing structures, eco-sustainability criteria in order to achieve a reduced environmental impact;
- to make tourist accommodations a site to actively fulfil purposes of conservation, research and dissemination of culture and coastal marine environment;
- to promote a model of cultural and environmental tourism, expanding the range of experiences already offered by the National Park To build the bases for a seasonal adjustment of touristic use;
- to design activities and tourist services that increase the level of the community's interaction with the protection of the coastal landscape and environmental components, in order to build the first relational system which knows and protects their value;
- to start an innovative institutional experience as a laboratory for sustainable tourism activities; to contribute to the operational concept (currently only law) of "coastal conservation area" as an operational area of the Conservatoria delle coste;
- to mobilize private operators in the field of tourist accommodation and services, through public call for proposals, for the assignment of real estates in order to find solutions to environmental sustainability, as well as the conservation of cultural heritage sites and historical memory.

The executive phases of the activity are:

- Design and implement the project of the conversion of the ancient "mine's hospital" in an Eco-Hostel;
- design and implementation of a training course for unemployed youth of the territory of Buggeru aimed at managing the structure of the Eco-Hostel;
- recruitment of young people attending the course through a rigorous selection process downstream of the course of one year.

# **Outputs**

The expected outputs of the project are:

- Establishment of a tourism and eco-friendly accommodation in Sardinia west coastal areas as a reference point for environmental education and awareness;
- Reduction of environmental impacts of tourism on coastal areas
- green local jobs increased ;
- strengthening of relation system among local actors involved in the processes of tourism development;
- start of profitable forms of public-private collaboration in the management of coastal resources.

#### **Responsible for implementation**

Agenzia Conservatoria delle coste, Municipality of Buggerru, ATI Ifras S.p.a..

Individual Activity	MELS	Regions	MAP	TOTAL
Enhancement of architectural heritage for the creation of the first eco-hostel in the coastal area for sustainable local development (Buggeru site)		€2.400.000		€2.400.000

# 4.2.11 GIRA – Integrated Fishing Resources Management

# Background

GIRA project aims to define a model for Integrated fishery resources management through an Integrated system of environmental protection measures and support of traditional productive activities in order to diversify production to consolidate and amplify the results and the effects of some existing initiatives at local level.

# **Objectives of the activity**

The general objective is to establish the basis for the resolution of conflicts that characterize the uses of marine space regarding the fishery sector.

The specific objectives are:

- to preserve and enhance marine biodiversity;
- to limit the phenomenon of over-exploitation of specific fishery resources;
- to identify and create areas of repopulation aimed at an increase of the biological importance of the area and to support some quality productions;
- to promote sustainable fishing practices through the use and testing of highly selective capture systems;
- to promote forms of voluntary agreement to define and regulate common fishing practice-oriented to responsible fishing practices and integrative activities of the income;
- enhancing the multi-functionality of fishing and mariculture businesses, through the development and dissemination of "pescaturismo" and "ittiturismo";
- to support for the sale of quality products through the local tourism system;
- two years of monitoring activities after the first phase of experiment.

The executive phases of the activity are:

- presentation of the activities to be developed in the action by the Com.Bio.Ma. (Centre of competence on Marine Biodiversity) and the Agenzia Conservatoria delle coste;
- signing of an agreement between the Agency and Com.Bio.Ma.;
- signing of an agreement between the Agency and the Department of Agriculture and agro-pastoral reform Sardinia (Fishing and aquaculture service);
- activities of pre-survey carried out with the active cooperation of the local fishermen;
- issue of an administrative order for the establishment of a management experimental area where sea urchin fishing has been prohibited for two years;
- delivery report by the Com.Bio.Ma. and sharing the content and evaluation with the Service fisheries and aquaculture;
- meeting with local restaurant owners to share proposals for the enhancement of the resource to be developed following the reopening of the experimental management area;

- preparation and placement of information boards containing details about the project and fishing area for fishermen and local population;
- dissemination of the project's theme in local schools, involved through awareness raising and environmental education activities;
- delivery of the final report containing the information management by the Com.Bio.Ma. and sharing content and evaluation with the Fishing and aquaculture service;
- organization of the workshop to present divulge the results;
- public call for the selection of a company for the monitoring activities.

# Outputs

- Conservation of marine biodiversity through the establishment of MPAs;
- Use of alternative techniques for the protection and increased productivity of the species;
- Raised awareness of fisheries industry professionals on issues related to environmental protection and eco-sustainable fishing activities;
- A more diverse and sustainable local tourism products;
- Economic return associated with fisheries increased;
- To contribute to the exploitation of synergies between the fishing industry and the tourism sector;
- Monitoring reports.

### Responsible for implementation

*Agenzia della Conservatoria delle coste*, Com. Bio. Ma. – Centre of competence on Marine Biodiversity, Department of Agriculture and agro-pastoral reform Sardinia (Fishing and aquaculture service, Fishermen, Municipality of Buggerru and Arbus, restaurateur.

Individual Activity	MELS	Regions	MAP	TOTAL
GIRA – Integrated Fishing Resources Management	€160.000	€240.000		€400.000

# 4.2.12 Asinara National Park and Pianosa island (Tuscan Archipelago National Park) tourism Carring Capacity Assessment

The element that connects the Asinara and Pianosa islands is that both have been "prison islands" and then became natural national parks. Through this activity we will first analyze the environmental conditions of these areas, the social context and the existing tourism pressure, then we will try to plan a common strategy, according with the law restrictions, for the reactivation of both islands and the sustainable use of the real estate.

# Objectives of the activity

To establish a system of support to decisions and evaluation of measures to develop tourism on both islands, in order to pursue the best use of resources and to achieve excellence levels of management based on the consideration of environmental carrying capacity in the choices of tourism type.

The specific activities are

- to build a framework of knowledge based on a system of relevant indicators,
- to identify thresholds of sustainability in the use of individual, environmental, socio-economic and settlement infrastructure resource (in terms of source-target),
- to determine the conditions to estimate the cumulative effects generated by such scenarios (system point of view);
- defining sustainable criteria for intervention in the planning / design (address to project and decision point of view);
- to build the criteria for the evaluation of programs and projects in all their phases and to monitor the effectiveness of actions based on their enhancement effects on the environment (evaluative point of view), active participation and encouragement of a stable collaborative basis among all actors, both form institutions and not and variously involved in the management of the two Islands, to share knowledge, and to find rules and management tools (in terms of governance).

The executive phases of the activity are as follows:

- in the first phase of the project, the Agency will focus on the development of the methodology and on the definition of the model of tourism carrying capacity, based on the selection of the indicators identified on the basis of available knowledge;
- in the second phase, the agency will build a prototype software to update the databases and the indicators, to adapt the decisions to the evolutionary context of the economic social and environmental system concerned.

# Outputs

Development and implementation of a Decision Support System (DSS) for the establishment of new social and economic activities, compatible with the rules of the national parks in the islands historically aimed at high-security prisons. The objective is to evaluate the loads in terms of attendance and sustainable activities with respect to protected ecosystems and the availability of natural resources on the two islands.

# Responsible for implementation

Agenzia della Conservatoria delle Coste, National park of Asinara Island, Environment Ministry, Department of Environment Defence, Department of *Enti Locali, Finanze e Urbanistica, Corpo forestale di vigilanza ambientale* and *Ente Foreste* of Sardinia Region, Municipalities of Porto Torres, tourism operators, University of Sassari, Tuscany region.

Individual Activity	MELS	Regions	MAP	TOTAL
Asinara National Park and Pianosa island tourism Carryng Capacity Assessment	€60.000	€90.000		€150.000

# 4.2.13 Sardinian center for coastal monitoring and assessment

# Background

The conceptual model behind the activation of the Sardinian Center for Coastal Monitoring and Assessment recognises the coordination role that *Conservatoria* may have regarding local authorities and regional stakeholders, responsible for the management of coastal areas.

The contribution of the *Conservatoria delle coste*, with specific expertise in the field of Integrated coastal management, should therefore address the selection of relevant information fields (thematic dataset) as well as the acquisition, processing and eventual promotion of initiatives aimed at the production of new data.

The final aim is to make an assessment of the implementation state of sustainable development policies and, at the same time, to monitor the status and evolution of integrated coastal management processes in the regional context.

### **Objectives of the activity**

Preparation of an information system functional to the observation of phenomena in the marine area – coastal area CAMP and simultaneous monitoring in the implementation phase. In particular, the objective is to apply (in a particularly vulnerable area to the rising of sea level, e.g. Gulf of Oristano) a vulnerability assessment instrument, which in turn should produce maps of vulnerability to natural hazards and should suggest the best adaptation measures.

The specific objectives are:

- to promote the integration of planning and policy of the sectors at policy-making levels by monitoring new developments in planning and policy;
- to foster cooperation between the policy-making levels and sectors via consultative meetings, and by citing, as much as possible, initiatives at other levels or in other sectors and by actively encouraging cooperation;
- to act as a contact point for Integrated Coastal Zone Management for the various levels of government and other key players of the coast;
- to monitor Mediterranean and European developments in Integrated Coastal Zone Management by participating in coastal forums or other consultative platforms on coastal zone management.

The executive phases of the activity include:

- to keep a record of the data and then set effective sustainability indicators for the coastal zone;
- to keep an up-to-date inventory of ongoing and new projects and initiatives in the coastal zone;
- to communicate about ICZM initiatives.

### Outputs

 Competences learnt at different government levels, regarding the acquisition, observation and monitoring of the processes influencing the coastal zone identified.

- Tools and procedures that govern the flow and exchange of data for the coastal zones adopted.
- All stakeholders involved in the coastal zone observation network.

# Responsible for implementation

Agenzia Conservatoria delle coste, National park of Asinara Island, Environment Ministry, Department of Environment Defence, Department of Enti Locali, Finanze e Urbanistca and Corpo forestale di vigilanza ambientale of Sardinia Region, Municipality of Porto Torres, tourism operators, University of Sassari.

Individual Activity	MELS	Regions	МАР	TOTAL
Sardinian center for coastal monitoring and assessment	€51.600	€77.400		€129.000

# 4.2.14 Coastal vulnerability assessment tool

#### Background

Sardinia Island, as stated by EEA (ETC/ACC, 2010a), like many parts of the Western Mediterranean coastline is at risk of flooding and erosion due to rising sea-levels and the increasing frequency and intensity of storm events. Low-lying coasts (e.g. deltas, lagoons, tidelands and some islands) are particularly vulnerable.

On a larger spatial scale, a European review by Moreno and Amelung (2009) has shown that with respect to climate, the Mediterranean is likely to remain Europe's prime region for summer-time beach tourism for at least the next 50 years and that coastal managers in Mediterranean destinations are advised to focus some of their attention on other climate change impacts such as SLR or water availability, and include environmental quality and diversification of activities in their deliberations. In stark contrast, Kundzewicz et al. (2008) suggest that the impacts of climate change on beach holidays in the Mediterranean are likely to be serious and largely adverse due to greater drought and fire risk, more flash floods, higher personal heat stress and more tropical diseases (e.g. malaria).

The southern Mediterranean and its ecosystems are identified as particularly vulnerable to water stress and desertification processes under climate change conditions (Gao and Giorgi, 2008; Berry et al., 2007; Sánchez de Dios et al., 2009). In particular the central and southern portions of the Iberian, Italian, Hellenic and Turkish peninsulas, parts of southeastern Europe, Corsica, Sardinia and Sicily may become dry and arid (Beniston et al., 2007; Gao and Giorgi, 2008; Metzger et al., 2008).

#### Objectives of the activity

To assess coastal vulnerability to sea level rise and provides a simple numerical basis for ranking sections of coastline in terms of their potential for change that can be used by managers to identify regions where risks may be relatively high.

Specifically: To review the current status of Coastal Vulnerability Assessment tools and methods; to identify a robust and "easy-to-use" method to be applied in the Mediterranean context and in particular to the local scale of Sardinian coastal areas.

Among the executive phases of the activity the following ones can be mentioned:

- analysis of existing coastal vulnerability assessment tools;
- selection of the more appropriate tool to Sardinia coastal areas;
- implementation of the tool in at least one of the CAMP sub-areas.

#### Outputs

The expected outputs of the activity are vulnerability maps and adaptation measures for sea level rise.

#### Responsible for implementation

Agenzia Conservatoria delle coste, Department of environment defense of the Autonomous Region of Sardinia.

Individual Activity	MELS	Regions	MAP	TOTAL
Coastal vulnerability assessment tool	€52.000	€78.000		€130.000
#### 4.3 Analysis of the Questionnaires prepared by the CAMP Regions (Implementation stage and main features of CAMP Italy Individual activities)

All the CAMP Regions provided the requested information on implementation stage and main features of each CAMP Italy individual activity.

Collected information indicates that al the activities have been planned in order to pursue the objectives indicated in the Feasibility Study. Regardless their implementation stage, individual activities show positive features relating to the possibility of integrating actions and objectives to better fit the overall CAMP objectives. Moreover, both for those in their implementation phase and for those still to be started, modifying project activities and/or objectives is still possible.

All the CAMP regions adopted provisions to ensure the durability of the results of their activities and tried to pay attention to the problems common to all sub-areas, with particular effort in considering the replicability of their actions in other Italian coastal areas. CAMP Regions pointed out that all the individual activities have the potential to promote and sustain the implementation of the ICZM Protocol and to test its effectiveness, with particular attention to Protocol provisions of (i) reconciling coastal activities and preservation of ecosystems, (ii) addressing risk in coastal zones and (iii) ensuring science based information and proper participation.

Moreover, all the planned activities show high correspondence and coherence with specific regional planning priorities, even if stakeholders' involvement, participatory process and the involvement of the private sector from a financial point of view need additional efforts to reach more satisfactory achievements.

Individual activities rely upon good institutional capacity and technical expertise of people who are also involved in several European projects (in progress or completed), whose correspondence and coherence with CAMP activities is very clear.

# 4.4 Lessons learned and proposals for ICZM implementation at national and regional level

Finally, from the information provided by CAMP Regions, it is absolutely evident that individual activities give significant contribution to the definition of the ICZM National Strategy and it is clear that they have the potential to do this, at least by providing concrete opportunities to stimulate and promote a strong coordination among regions.

Once all the Individual activities are completed, an analysis of the lessons learned on the implementation will be prepared so to summarize the main added values, gaps, good practices and alike with regard to the CAMP objectives/ICZM Protocol requirements, as well as other regional plans such as the one on marine litter so to enhance beach sustainability. This synthesis will be of use for the national level ICZM implementation such as National ICZM Strategy preparation and establishment/improvement of institutional coordination for ICZM. Also, this report will bring ideas for and proposals for the replication and sharing with other regions as well as for using the CAMP Italy experience in other Mediterranean countries.

This summary could be prepared by the involvement of Tavolo CAMP and the National Project Coordinator by analysing Individual as well as Horizontal Activities by using a common outline and criteria. As such, the report should make a major part of the Integrated Final Report of CAMP Italy and therefore enable integration at regional and national level and provide an identity of this CAMP.

As reporting will be carried out and managed by the Horizontal Activity 1 "Coordination and dissemination of the results", all the actions aimed at analysing lessons learned from CAMP Italy Individual Activities and at presenting proposals for ICZM implementation, at national and regional level, will be handled in the framework of that Horizontal Activity and supported by its budget.

# V. WORKPLAN AND BUDGET

## 5.1 Workplan and Timetable

The Project Workplan, structured according to the implementation procedure and the relevant Timetable are presented below:

	2014 2015		2016			Follow -up						
Signature of the Agreement	Х											
Detailed formulation of the Project	0	0										
Draft Inception Report	Х											
Draft Technical Specifications	Х											
Inception Workshop		Х										
Final Inception Report		Х										
Meeting prerequisites for implementation		Х										
Implementation		0	0	0	0	0	0	0	0			
Initial activities		Х										
Final Technical Specifications		Х										
TOR for consultants (if any)		Х										
Signature of consultants' contracts (if any)		Х										
Implementation of Project activities			Х	Х	Х	Х	Х	Х	Х			
Integration of results									Х			
Final integrated Project documents									Х			
Presentation Conference									Х			
Terminal Report									Х			
Post Project activities												0
Follow-up activities (host country)												Х
Monitoring, evaluation, reporting (host country)												Х
Presentation of the Project results at MAP level (MAP -PAP/RAC)												x

## 5.2 Budget and Cost-sharing

#### Estimated budget (€) and indicative contributions

HORIZONTAL ACTIVITIES								
Cod.	Activities	Regions	MELS	МАР	Total			
4.1.1	Coordination and dissemination of the results	€55.350	€94.650	€72.000 (PAP/RAC)	€222.000			
4.1.2	Capacity building	€18.450	€21.550		€50.000			
4.1.3	Data collection and management	€18.450	€31.550		€50.000			
4.1.4	Institutional coordination and public participation	€55.350	€94.650		€150.000			
Horizontal Activities Total		€147.600	€252.400	€72.000	€472.000			

	INDIVIDUAL ACTIVITIES								
Cod.	Activities	Regions	MELS	MAP <sup>2</sup>	Total				
4.2.1	Monitoring the effects of Tuscanian beach nourishment activities south of Capalbio.	€40.000	€26.667		€66.667				
4.2.2	Evaluating feasibility and effectiveness of the use of alluvial sediments extracted from the Magra river drainage basin in order to restore eroding beaches in the annexed coastal cell.	€150.000	€100.000		€250.000				
4.2.3	Protection of the dunes of Lacona (Isola d'Elba).	€20.000	€13.333		€33.333				
4.2.4	Regulations for the removal of sand and material from marine quarries.	€10.000	€6.667		€16.667				
4.2.5	Operational protocol for the reestablishment and consolidation of the (natural or reconstructed) dune belts	€8.000	€5.333		€13.333				
4.2.6	Conservation of marine and coastal biodiversity with special reference to the conservation of minor species	€69.800	€46.534		€116.334				
4.2.7	Development and exploitation of new forms of sustainable tourism in protected natural areas	€23.000	€15.333		€38.333				
4.2.8	Education and Communication to sustainability	€14.000	€9.333		€23.333				
4.2.9	Implementation of specific activities aiming to the sustainable use of beaches and the protection of coastal	€540.000	€360.000		€900.000				
4.2.10	Enhancement of architectural heritage for the creation of the first eco-hostel in the coastal area for sustainable local development (Buggeru site)	€2.400.000			€2.400.000				
4.2.11	GIRA – Integrated Fishing Resources Management	€240.000	€160.000		€400.000				
4.2.12	Asinara National Park and Pianosa island tourism Carrying Capacity Assessment	€90.000	€60.000		€150.000				
4.2.13	Sardinian center for coastal monitoring and assessment	€77.400	€51.600		€129.000				
4.2.14	Coastal vulnerability assessment tool	€78.000	€52.000		€130.000				
Individ	lual Activities Total	€3.760.200	€906.800		€4.667.000				

<sup>&</sup>lt;sup>2</sup> RACs contribution will be evaluated and added as person/month in the Inception Report once the details of their engagement will be specified.

CONTRIBUTIONS TO THE PROJECT – ALL PARTENERS								
	PARTNERS	Horizontal Activities	Individual Activities	Feasibility Study	Total			
	MINISTRY OF ENVIRONMENT, LAND AND SEA OF ITALY (MELS)	€252.400	€906.800	€80.800	€1.967.200			
	PRIORITY ACTIONS PROGRAMME/RAC	€72.000	-	€7,000	€79.000			
	TUSCANY REGION	€49.200	€210.000	-	€259.200			
	EMILIA-ROMAGNA REGION	€49.200	€124.800	€36.000	€210.000			
	SARDINIAN REGION	€49.200	€3.425.400	€85.200	€3.559.800			
Total		€472.000	€4.667.000	€209.000	€5.348.000			

## **VI. ACHIEVEMENT INDICATORS**

Achievement indicators will be applied when evaluating:

- progress of the Project implementation at the Project level and at the level of each Project activity;
- use of the Project results in the post Project period.

#### 6.1 Progress Achievement Indicators

When evaluating the progress of the Project implementation the following achievement indicators will be applied:

# 6.1.1 Progress achievement indicators at the Project level to be prepared by the Technical Coordination Office (Operational Body)

- percentage of successfully implemented individual activities, as envisaged by the Project Workplan and by Technical Specification;
- timely implementation of the Project percentage of the time of extended Project duration, if any, in comparison with the original Timetable of the Project;
- overrunning of approved budget, if any percentage of overrun;
- percentage of outputs produced in comparison with the number of planned outputs;
- number of national/local experts involved in the Project;
- the Participatory Programme: number of actions, number of NGOs involved, number of other organisations and number of stakeholders involved in the programme, feedback and quality;
- number of persons trained;
- equipment supplied;
- existing data base expanded (approx. percentage of expansion);
- the catalytic effect of the Project, intellectual, financial (if any, to be expressed in financial terms); and
- contribution of MAP consultants, experts, professionals.

The assessment of the progress according to the above indicators will be reported within regular Progress Reports at the Project level.

#### 6.1.2 Progress achievement indicators at the level of individual activities

When evaluating the progress of individual activities, in addition to the achievement indicators listed above under a), specific progress achievement indicators will be identified for each activity within respective Technical Specification. The assessment of the progress according to the above indicators will be reported within regular Activity Progress Reports.

### 6.2 Project Achievement Indicators

When evaluating the Project results in the post Project period, the following achievement indicators will be applied:

#### 6.2.1 Evaluation to be made by the Italian authorities

- provision of an integrated solution for sustainable development of the Project area;
- promotion of a sustainable use of major resources of the Project area, or an improved protection of resource productivity and ecosystems;
- implementation, at the Project level and at the country level;
- improvement of the quality of life and health conditions of the resident population;
- improvement of the socio-economic conditions in the region;
- benefits identified versus those expected, impacts on sustainable use of land resources;
- improved measures for the protection against pollution, emergency preparedness, protection of natural habitats and biodiversity, conservation of historic and cultural values, etc.;
- introduction of participatory activities and practice in the host country;
- implementation in practice of individual solutions and recommendations of the Project;
- formulation of a follow-up remedial programme on the basis of the Project results;
- evaluation of professional capacity of involved institutions and authorities achieved by programme implementation;
- stakeholders response and participation;
- increased public awareness;
- inputs into national practice:
- application of tools and methodologies;
- implementation of recommendations related to improvement of institutional and legal arrangements in the country or in the Project area;
- application of the Project results in other areas of the host country;
- initiation of similar programmes in the country; and
- assistance by host country institutions and teams to other countries, if any.

#### 6.2.2 Evaluation to be made by PAP/RAC

In addition to the above-listed indicators, the following ones will have to be taken into account:

- successful application of methodologies, tools and procedures;
- successful integration of activities during the implementation stage, and of results in the final phase of the Project;
- the catalytic effect of the Project, expressed in qualitative terms;
- evaluation of conclusions of the Presentation Conference;

- inputs into national practice, or application of the results in other Mediterranean countries;
- inputs at the regional level:
- to the Mediterranean Commission on Sustainable Development;
- when formulating regional policies and strategies; and
- when distributing and applying the Project results.

The assessment of the Project results, taking into account the above-listed indicators, will be reported by the Italian MELS within regular Post Project Reports; and by PAP/RAC within the Project Terminal Report, and other documents.

## **VII. PROGRESS REPORTING**

Regular Progress Reports will be presented:

- a) at the Project level; and
- b) at the level of individual activities.

In addition, at the end of the Project, reports will be prepared at the Project level and for each activity.

Progress reports will be provided at half-yearly base by:

- the PTCO at the level of each individual Project activity;
- National Project Coordinator at the Project level; and
- MAP Project Director.

The reports of PTCO will be presented to the Tavolo CAMP and to PAP/RAC.

The reports of National Project Co-ordinator and of MAP Project Director will be presented to Italian MELS and to PAP/RAC.

The Final Project Report will be prepared by MAP Project Director on the basis of the draft version to be prepared by the National Project Co-ordinator.

## **VIII. POST PROJECT ACTIVITIES**

In order to provide conditions for the utilization of the Project results after the official closure of the Project, the following activities will be implemented:

- a) formulation and gradual implementation of a Follow-up Programme,
- b) monitoring of the use of the Project results, evaluation of the monitoring results, reporting, and
- c) formulation of proposals for the use of the Project results at the MAP level. The time frame for implementation of the above activities is defined by the Project Workplan and Timetable, presented in Section 4.

#### 8.1 Follow-up Activities

Taking into consideration the solutions and recommendations presented by the Final Integrated Project Document, the Follow-up Proposals and the Urgent Investment Portfolio, as well as the conclusion of the Presentation Conference, the Italian MELS will prepare a Project Follow-up Programme (Plan of Actions). PAP/RAC will provide assistance as appropriate. The Follow-up Programme will be submitted to the relevant national authorities for approval. According to the Programme (Plan of Actions), the Project results will be gradually implemented/introduced in the national practice.

#### 8.2 Monitoring, Evaluation and Reporting

Italian MELS will monitor the Project-related follow-up activities identifying and registering:

- a) the progress achieved;
- b) actions in preparation, on-going and implemented;
- c) Project results applied; and
- d) other benefits of the Project.

The process will be implemented at the Project area level, as well as on a national scale.

During the <u>monitoring process</u> the following aspects will be taken into consideration:

- activities implemented, their results and outputs, direct benefits, financial aspects, problems encountered, corrective actions undertaken;
- activities in preparation and/or on-going: present state, problems, actions undertaken or needed for solving them, prospective of implementing activities in preparation;
- methodologies, tools, and procedures applied by the Project: introduced or applied in national/Project area practice, problems encountered, corrective actions, expected results;
- planning initiatives/activities undertaken or in preparation;
- institutional and/or legal and/or management-related initiatives according to the proposals made by the Project;
- catalytic effect of the Project in the Project area or at the national level; and

• identification of direct, and of indirect benefits and beneficiaries of the Project.

The <u>evaluation procedure</u>, to be applied by the Italian MELS, will be based on the results of the monitoring process, following the elements listed above, and taking into consideration the following:

- a) evaluation of the achievements according to achievement indicators, defined in section 5.2.
- b) evaluation according to the following:
  - contribution to improved sustainability within the Project area, following sustainability indicators and the results of the Sustainability Analysis;
  - direct and indirect benefits of the Project, and their significance;
  - prospective of progress of the follow-up activities in the preparation and/or ongoing;
  - nature and significance of problems of a general nature and of those related to individual follow-up actions, impacts of these problems on the use of the Project results; and
  - lessons learned.

PAP/RAC will provide assistance when establishing the monitoring process and evaluating the monitoring results. The results of the monitoring and evaluation process will be reported by the Italian MELS to MAP through PAP/RAC. At the end of the reporting period, the Italian MELS will prepare the Final Post Project Report, summarising the results achieved and benefits identified, indicating problems and lessons learned, and proposing further activities, as appropriate and needed.

### 8.3 Use of Results at MAP Level

In order to create conditions for the use of the Project results at the MAP level, PAP/RAC will formulate Reports, including proposals for the use of the Project results at that level:

- a) after the official closure of the Project; and
- b) at the end of the post Project reporting period.

The PAP/RAC Reports will include:

- a) findings by PAP/RAC, related to:
  - results and experience of the Project, applicable at MAP level (policies, strategies, procedures, methodologies);
  - lessons learned, to be taken into account at the MAP CAMP level (related to the formulation and implementation of Projects, follow-up, use of Project activities, integration procedure, participation, etc.); and
  - results and experience to be recommended as pilot ones for solving similar problems in the region.
- b) findings extrapolated and summarised from the Half-Yearly Post Project Reports and the Final Post Project Report, and identification of results relevant for the MAP level; and
- c) proposals related to the use of the Project results at the MAP level.

Evaluating the proposals and applying or using the results at MAP level is within the competence of the Secretariat of the Barcelona Convention and of the MCSD.