ABRUZZO Region

Service Maritime Works and Marine Water Quality

SHAPE Project

Cross border cooperation programme
Adriatic IPA 2007 – 2013

ADRIATIC BOOK OF BEST PRACTICES AND GUIDELINES

WP 2 – Action 2.3

16/09/2013

Consortium APRIambiente srl (leading company) and Studio FC & RR Associati srl (partner)

EXECUTIVE SUMMARY

Start small, think big, move fast

In line with the objectives of the Abruzzo Region, the Adriatic Book of Best Practices and Guidelines has been elaborated within the frame of the SHAPE project, WP 2 Action 2.3, as a concerted and shared tool with all SHAPE partners to facilitate an effective **implementation of the 'Integrated Coastal Zone Management (ICZM)**, through the inter-regional approach and the **sharing of best practices and technical, scientific and operational aspects on cross-cutting issues.**

The analysis of the Adriatic macro-region highlighted that, with reference to the very environmentally-vulnerable Adriatic region, current and future trends lead to a **pressure intensification on the coast**: maritime transport, urbanization of the coastline, beach tourism, intensive agriculture and fisheries, which, while contributing to economic and employment growth of the area, need to be included in a clear operational and legislative framework enabling **sustainable growth** of the Adriatic region, and involving not only local authorities but also States, currently without a clear ICZM strategies.

This context analysis and the consultation with the SHAPE partners led to a selection of 10 priority themes and 16 best practices, summarized as follows:

- With respect to the geographical criteria of selection:
  - 9 of the identified Best Practices are located in the Western Adriatic;
  - 2 are located in the Eastern Adriatic;
  - 5 were chosen outside of the Adriatic Region.

- With respect to the identified priority themes:
  - 38% of the selected Best Practices are related to the Coastal protection, land use and Landscape (3) and Sustainable Tourism (3)
  - 25% are related to Climate Change (2) and mobility, land use (2)
  - other themes are represented by one Best Practice.

The best practices are presented in clear and understandable fiche with the most relevant information. Particular attention has been paid to the "lessons to learn" in each case and the terms of repeatability in the Adriatic macro-region.

The joint analysis of weaknesses and strengths of the selected best practices, summarized in the "lessons to learn", allows an assessment of possible scenarios of evolution of the Adriatic region and the definition of few key points or guidelines for the practical application of an integrated management of coastal zones approach at the macro-regional level. In particular, it has become clear that the Adriatic macro-region is an ideal framework for the implementation of ICZM, as a completely new policy for the creation of multi-level governance, halfway between the EU and the member States, involving regions, local authorities and social and economic subjects.

The Guidelines have been organized according to macro areas and priority themes and taking into account the implications in terms of environmental quality, relations with the various regions, socio-economic impacts, as well as on the applicability of actions in terms of administrative, procedural and institutional conditions.

The diversity and complementarity of the Adriatic regions with their physical, economic, cultural and institutional conditions requires a flexible approach able to address the strategies towards concrete solutions to the real problems and to guide the political and strategic choices for the Region as a whole. An integrated and participatory approach is therefore necessary in order to ensure the sustainable management of coastal

and marine areas in environmental and economic terms, but which is also equitable and cohesive at social level. Although the implementation of regional strategies for the ICZM may initially require significant investments, on the other hand it will provide significant long term economic benefits.

The Adriatic Book of best practices and guidelines, as a concerted and shared tool with all SHAPE partners, wishes to serve as a strategic framework for the development of the ICZM in the Adriatic region and as a guide for the operational decision-makers involved in the sustainable development of the area.

The Report and the best practices are available on the project WIKI platform in order to encourage the widest possible sharing: http://www.arnymore.net/hadriwiki/index.php?title=Main_Page

TABLE OF CONTENTS

1 SECTION I: INTRODUCTION

1.1 ICZM PROCESS AND THE BEST PRACTICES

The global reflection on the Integrated Coastal Zone Management (ICZM) for a proper environmental management system with positive impacts on the population concerned is based on the awareness that the resolution of common interest issues is facilitated by the dialogue and the exchanges of views and successful experiences in the management of coastal areas, even if gained in similar contexts, between the interested parties.

The hypothesis formulated in the first Commission Communication on the Integrated Coastal Zone Management (COM(95) 511), presupposes that the causes of a mismanagement and the deterioration of many European coastal areas are to be found in the following problems:

- poor or inadequate information both on the conditions of coasts both on the effects (economic and not) of human activities;
- poor coordination between various levels and departments of public administrations and related policies;
- insufficient involvement and consultation of stakeholders.

Any effort to launch an Integrated Coastal Zone Management process should come from the desire to provide the necessary information for a coordinated planning and the collaboration among the parties to build a structured action that fosters a shared approach.

At European level is preferred the ICZM programming approach based on the analysis of best practices. One example is the ICZM Demonstration Programme (1996-1999) which tested, after more then twenty years, the maturation process of the ICZM, started in 1973 with the Committee of Ministers Resolution for the coastal protection.

Consisting in 35 local and regional projects and six thematic studies (legislation, participation, technology, sectorial and territorial cooperation, UE policy and information), the Demonstration Programme contains an explicit invitation to adopt the analysis of best practices to approach the cross- sectorial, inter-institutional and cross-border planning for the improvement of the European coastal area.

To provide concrete examples of best practices of integrated coastal management in different socio-economic, cultural, administrative and physical territories, is an essential tool for the development of a common strategy to promote the sustainable development of the Adriatic coastal area.

The best practices analysis for the construction of an ICZM process for the Adriatic Region has, thus, a dual function:

- *to collect and disseminate key lessons on possible management policies derived from the experience gained so far in similar contexts;*
- *to stimulate a debate and create consensus around this process to reverse the currently widespread tendency towards unsustainable development in coastal areas.*

Since the ICZM is essentially a decision-making process for the coastal management it represents, therefore, a problem to be addressed through an integrated approach rather than a sectorial one, the study of related best practices must as well take into account all aspects related to the coastal area, including the geographical, political, environmental, cultural, historical, and economic ones, in an effort to achieve the sustainable development goals for the regions involved.

The complexity of such a study is not limited to the adoption of a cross-sectorial approach, but involves as well the necessity of synthesizing a matter with extended boundaries and complex and not-univocal definitions.

Specifically, it refers to the complexity in defining and classifying the coastal areas, which are characterized by an heterogeneity of conditions and problems related to European coasts (common problems in different coastal areas) and in implementing the ICZM, which is characterized by a wide variety of approaches.

The pilot projects of the Demonstration Program indicate that the ICZM approaches may differ in terms of:

- scope of geographical coverage;
- range and complexity of the addressed issues;
- combination and status of interests of public and private stakeholders;
- number and status of the institutions and interests represented within the key group (composed by main partners, who regularly participate during the project implementation);
- contractual/legal basis of the initiative, political support and modality of legitimateness;
- level and quality of leadership;
- degree of authority of the key group;
- extent to which the initiative refers to the existing regulatory system as a "framework" in which to operate;
- potential duration of the process, once started;
- mechanisms of participation and type of interaction with the public;
- linking mechanisms (voluntary, informal and formal) between the various authorities.

Among the main factors influencing the selected approach, are:

- cultural definition of the concept of "public good";
- understanding of the concepts underlying the ICZM, level of available information/data;
- starting point of the initiative and possible dominant role of a specific discipline; quality of leadership and degree of participants' motivation;
- available resources and timing of the initiative;
- level of public awareness and general attitude towards participation;
- legal, judicial, administrative and planning structures and their context;
- legitimateness of the initiative.

Since the choice of the ICZM approach depends on historical, cultural and traditional context as well as by natural conditions and physical problems of the affected area, certain approaches will be more effective than others depending on the different conditions.

This complexity makes it difficult to indicate the best ICZM approach for a specific area. However, one can learn from other experiences considering the main forces acting on the area of the intervention and identifying

other initiatives in areas with similar characteristics. The best practices are in fact a very important tool available to local decision-makers, but they must then decide and act with full responsibility on the basis of the objectives of conservation and sustainable development of the area.

For this reason, a reasoned analysis of the experiences and their success factors implemented in the Adriatic Region provides important and essential tools for an informed management. But in order to be able to develop this book of tools, a careful selection of case studies should be carried out for the identification of good practices.

> *A good practice could be defined as "... an action, replicable in other context, which allows to a municipality, a community or to any local government to move towards sustainable forms of management at the local level." 1997 - General Directorate Environment for the database and the integrated database network of the European Commission.*

The selection criteria adopted for the Adriatic Book of best practices are based on desk analysis, SWOT analysis of the region, consultation with project 's partners and on specific selection criteria, derived in part from the criteria developed by ISPRA1, as shown in the following table.

Table 1: Selection criteria for best practices

A. ELIGIBILITY CRITERIA	
1) COMPLIANCE TO ALL THE FOLLOWING GENERAL REQUIREMENTS:	
1. the proposed project must have already started **2.** the project should be easily exportable and replicable in other local contexts **3.** the project must be coherent with the quality objectives and targets adopted at national and international level	
2) IMPLEMENTATION OF AT LEAST ONE OBJECTIVE FOR EACH CATEGORY OF THE FOLLOWING GENERAL SUSTAINABILITY OBJECTIVES:	
Environmental sustainability	▪ Ecosystems protection and restoration ▪ Landscape protection ▪ Reduction of natural resources consumption and promotion of renewable resources ▪ Reduction of pressures on the atmosphere ▪ Reduction of pressures on water ▪ Reduction of pressures on soil ▪ Reduction of electromagnetic or indoor noise pollution ▪ Introduction or improvement of environmental management systems
Economic sustainability	▪ Reduction of environmental impacts on production activities ▪ Development of a market of sustainable goods and services

[1] ISPRA, the Italian National Agency for the environmental protection, defines good practice as " an action that allows any local government to embark on a path towards sustainability, as an essential factor of development to respond to "... the needs of the present without compromising the ability of future generations to meet their own needs "(" Our Common Future "- 1987, also known as " Brundtland Report ". Practice means both a systematic set of actions (a plan or a program) both small, incremental stemps. Practice is an operation carried out, under construction or at least funded (http://www.sinanet.isprambiente.it/it/gelso/buone_pratiche/criteriSelezione).

	▪ Investment in environmentally friendly technologies ▪ Improvement of efficiency and effectiveness of environmental expenditure
Social sustainability	▪ Reduction of health risks ▪ Improvement of basic social services such as health or education, or housing or work conditions ▪ Raising public awareness on sustainable development ▪ Improvement of social participation ▪ Increased ability of local communities to influence local decision-making ▪ Production and distribution of consumer goods on equity and solidarity basis ▪ Promotion of cultural exchanges and facilitation for social integration ▪ Conservation and upgrading of the cultural heritage and public spaces

B. QUALIFICATION CRITERIA	
IMPLEMENTATION OF AT LEAST ONE SPECIFIC OBJECTIVE (GOOD PRACTICE) ON A PRIORITY AREA OF INTERVENTION:	
Construction and Urban planning	▪ To reduce the pressure of construction in areas of environmental interest ▪ To promote intervention programs aimed at reducing noise and air pollution. ▪ To promote an integrated environmental planning. ▪ To prioritize reuse interventions or reorganization with respect to new commitments of the territory. ▪ To recover and rehabilitate degraded areas. ▪ To recover brownfield sites. ▪ To utilize eco-bio-compatible materials and technologies. ▪ To valorise the cultural heritage. ▪ Other
Climate changes	▪ Limitation of eutrophication and coastal erosion phenomena ▪ Adoption of spatial planning policies and regulation of activities aimed at restrict, specifically, urban growth on the waterfront. ▪ To adopt the necessary actions for an adaptation costs estimation to be taken into account for future financial decisions and to study more in detail the possibility of using innovative financing measures to implement such an investment. ▪ Implement, as a priority, local actions designed to assess the potential impacts of climate change on urban coasts and adapt sectorial policies. ▪ Establish early warning systems for floods and assessments of potential impacts and vulnerability in order to reduce risk and to protect citizens and their property. ▪ Governance Policies and exchange of experiences by supporting the

	education and awareness of the risks. ▪ Other.
Fishing and aquaculture	▪ Reduction of the pressures on resources. ▪ Nature conservation in the marine environment. ▪ Improvement of the selectivity of fishing operations. ▪ Protection of natural habitats or of those of species of Communitarian interest. ▪ Protection of marine species. ▪ Temporary restrictions of local fishing activities (protected areas). ▪ Integrated management of coastal zones. ▪ Improvement of vocational training, information and consultation activities. ▪ Improvement of the scientific research contributions
Protection of habitats (Coastal Parks), and biodiversity and establishment of "Areas of biological protection"	▪ Biodiversity protection. ▪ To promote and encourage the creation of areas of biological protection. ▪ To reduce and rationalize the use of potential pollutants. ▪ Landscape protection. ▪ Other.
Monitoring and control networks of river basins related to transitional waters and coastal marine waters	▪ To reduce natural resources consumption and waste production ▪ Restore contaminated sites. ▪ Increase the number of companies engaged in EMAS, ISO, LCA or another practices. ▪ To support the environmental innovation of enterprise management systems, production processes and products. ▪ To develop technologies with reduced environmental impact. ▪ Other.
Energy policies	▪ To reduce the use of non-renewable raw materials. ▪ To increase the use of renewable energy sources. ▪ To encourage and increase energy savings. ▪ To reduce greenhouse gas emissions. ▪ To reduce local impacts (odours, withdrawals and discharges). ▪ To innovate production processes (alternative technologies). ▪ To encourage the use of clean energy sources. ▪ Other.
Mobility planning	▪ To reduce travel and/or mileage per person by low-efficiency means of transportation (private cars with low occupancy rate). ▪ To reduce energy consumption of each transport unit.

	▪ To increase the most environmentally sustainable transport (number of low-pollution vehicles, use of public transport, use of the bike). ▪ To develop new businesses and jobs aimed at sustainability. ▪ Other
Coastal protection, land use and landscape	▪ To preserve and valorise natural and cultural resources and landscape ▪ To increase the share of natural areas and the degree of biodiversity. ▪ To reduce the use of non-renewable resources. ▪ To protect the quality of water, soil, atmosphere. ▪ To fight climate change, desertification and drought. ▪ To reduce the risk and causes of degradation, such as urbanization, levies, ground discharges in vulnerable areas. ▪ To reduce the phenomena caused by human activities such as landslides, coastal erosion, contaminated sites. ▪ Other.
Sustainable tourism	▪ To reduce the pressure due to fuel consumption, emissions, ... exceeding the carrying capacity of the environment, in particular in most sensitive areas. ▪ To encourage initiatives aimed at diversifying tourism, the redistribution of flows and the enhancement of the less fragile areas. ▪ To promote environmental management systems. ▪ To protect and promote the cultural and historical heritage. ▪ To increase the environmental certifications in tourism sector. ▪ To develop new businesses and jobs aimed at the sustainability of the sector.
Institutional coordination	▪ To ensure the sustainable development of coastal areas through the construction of consensus between government and social partners ▪ To promote public awareness and education and training on ICZM process for the sustainable use of natural resources and respect of the cultural heritage and natural resources ▪ To encourage relevant authorities to formulate plans, strategies, programs and projects for the implementation of Integrated Coastal Zone Management
C) ADDIITONAL QUALIFICATION CRITERIA	
COMPLIANCE WITH AT LEAST TWO OF THE FOLLOWING REQUIREMENTS	
1. Partnership: participation and cooperation between disciplines, sectors and agencies **2.** Integration: horizontal integration between policy areas and vertical integration between hierarchical levels **3.** Consensus: consultation among members of local community. **4.** Set up of control bodies: creating institutional structures that demonstrate sustainability over time and that are	

resistant to changes in the local political scenario.

1.2 INTERNATIONAL, EUROPEAN AND REGIONAL ICZM POLICIES

1.2.1 International and European policies

The United Nations Conference on the Human Environment (Stockholm,1972) was the first global conference on the environment. According to Dubos Wardand, the conference reflected a time of growing social awareness of the environmental danger connected to the economic expansion and the risk of polluting the planet to the extent that it might be come unfit for life.

They called for planetary justice, to control pollution and to curb the desire for more human development. Since then, a greater understanding was achieved in order to reconcile environmental, social and economic needs and conditions. In the same period, biodiversity became the flagship of the crusade for nature protection.

190 states are currently parties in the Convention on Biological Diversity (CBD), an international treaty adopted at the Earth Summit (Rio de Janeiro, 1992). This is of particular interest since it introduced a strong attention to the coastal zones, where problems such as habitat depletion, species loss and climate change are exacerbated by demographic pressure and a growing demand for resources.

In the post industrial era, the management of these issues led to greater articulation of approaches to environmental management, including the principles of sustainable development, Integrated Coastal Zone Management and, more recently, the Ecosystems Approach to Management and Marine Spatial Planning (MSP) (See table 2).

Table 2 - Chronology of EU maritime and Marine Policy document sand regulations.

Usual short title	Title	Type of document	Date	Reference
Barcellona Convention	Convention for the Protection of the Mediterranean Sea against Pollution Revised on June 1995 as the Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean	Convention	February 16, 1976 June 10, 1995	
Directive of water policy	Directive 2000/60/EC of the European Parliament and of the Council establishing a framework for Community Action in the field of water policy	EU Directive	October 23, 2000	2000/60/EC
2002 ICZM Recommendation	Recommendation of the European Parliament and Council concerning the implementation of the ICZM in Europe Communication from the Commission to the Council and	Recommendation Communication of	May 30, 2002 October 24, 2005	2002/413/EC, OJ L148, 6 June 2002, p. 24 COM (2005) 504

	the European Parliament of 24 October 2005, ''Thematic strategy on the protection and conservation of the marine environment''	the Commission		
Proposal for a Marine Strategy Directive	Proposal for a Directive of the EU Parliament and the Council establishing a Framework for Community Action in the frame of Marine environmental policies (Marine Strategy Directive)	Proposal of the Commission	October 24, 2005	COM (2005) 505 final COD 2005/0211
Green Paper	Green Paper — Towards a future Marine policy for the Union: an European vision for the oceans and seas	Communication of the Commission	June 7, 2006	COM(2006)275final volume II — annex COM(2007) 575 final
Halting the loss of biodiversity by 2010	Communication from the Commission COM/2006/0216 – Halting the loss of the biodiversity by 2010 – and beyond – Sustaining eco system services for human well-being	Communication of the Commission	May 22, 2007	COM/2006/0216
Blue Book	Communication form the Commission to the EU Parliament, the Council , the European economic and social committee and to the Committee of the Regions. An integrated Maritime Policy for the EU Conclusions from the consultations on a European Maritime Policy	Communication of the Commission	October 10, 2007	COM(2007) 574 final
Marine Strategy Framework Directive	EU Parliament Directive 2008/56/EC establishing a Framework for Community action in the frame of a marine environmental policy	Directive	June 17, 2008	OJ. L 164, 25.6.2008, p. 19–40
Criteria and methodological standards on good environmental status of marine waters	European Commission Decision of 1st September 2010 (2010/447/EU) on criteria and methodological standards on good environmental status of marine waters	European Commission Decision	September 1, 2010	Decision 2010/447/EU
Maritime Spatial Planning in the EU -	"Maritime Spatial Planning in the EU - Achievements and	Communication of	December	COM 2010/771

Achievements and Future Development	Future Developments	the Commission	17, 2010	
ICZM Protocol	ICZM Protocol Council Decision 2010/631/UE	Council Decision	March 24, 2012	Council Decision 2010/631/EU
The 20-20-20 Targets and Climate Energy Package	COM 2010/2020 Europe 2020 a Strategy for smart, sustainable and inclusive growth	Communication of the Commission	March 3, 2010	COM 2010/2020
Sea basin strategy: Adriatic and Ionian Seas	Communication form the Commission to the EU Parliament, the Council , the European economic and social committee and to the Committee of the Regions. A maritime strategy for the Adriatic and Ionian Seas	Communication of the Commission	December 2012	COM(2012) 713 final

The EC communication, adopted in December 2012 on the maritime strategy for the Adriatic and Ionian Seas, presents an evaluation of the needs and potential of sea-related activities in the Adriatic and Ionian area and establishes a framework on future steps to take towards a coherent maritime strategy and corresponding action plan.

In accordance with the above mentioned regulations and policy strategies, the Integrated Coastal Zone Management (ICZM) has achieved a significant level of maturity as far as theoretical concepts are concerned and its role as a key paradigm for the sustainable development of coastal zones is no longer in question (Billé, 2007).

In particular, at European level, ICZM has been widely recognized and promoted as "the most appropriate process for dealing with long term challenges", being a "proactive policy process aimed at addressing conflicts, interests for coastal space and resources" (EEA, 2006). The reference document within the European Union (EU) is the Recommendation 2002/413/EC issued by the European Parliament and the European Council. This document asks EU Member States to elaborate national strategies for coastal management according to ICZM principles and to undertake national stock-taking, which must consider major actors, laws and institutions influencing the management of their national coastal zone (Pickaver et al., 2004).

Nonetheless, various interpretations of the ICZM concept and different understanding of the Recommendation emerged across Europe (EC, 2007; Deboudt et al., 2008).

Along the European Mediterranean coasts, different approaches to coastal management and various degrees of development and implementation of ICZM national strategies can be found. Today, several coastal areas have been affected by ICZM projects, which however have often been carried out at a local level and with a narrow scope.

The Mediterranean area plays a pivotal role within the definition of regional strategies for ICZM and the need for a system ensuring a coordinated approach at regional level has become evident. Over the last few years, the issue has been addressed within the framework of the Mediterranean Action Plan (MAP), a UNEP Regional Seas Program, which is described in the following section on regional policies.

Public participation and stakeholders' involvement are crucial in establishing sound sustainable development practices. The central role of participation in ICZM has been widely recognized in literature, since it allows a more equitable and transparent process, reduces conflicts and makes final decisions more effective and legitimate (Edwards et al., 1997; Johnson and Dagg, 2003; Buanes et al., 2005; Chaniotis and Stead, 2007).

Furthermore, participation has been definitively sanctioned as a key principle of ICZM by the EU Recommendation, which states that "appropriate governance allowing adequate and timely participation in a transparent decision-making process by local populations and stakeholders in civil society concerned with coastal zones shall be ensured", as well as by the Mediterranean Protocol, which dedicates Article 14 to the issue.

> ***" Participation is not only a democratic right, but also an important condition for success in instrumental terms" (Jentoft, 2000).***

However, in order to ensure active public participation it is necessary to understand people's perception of specific issues and to be aware of their knowledge, feeling and behaviour (Stead, 2005). In fact, consensus and acceptability regarding coastal governance depends on local needs and thus, in order to ensure effective strategy implementation, community participation approaches should be tailored to local characteristics (Edwards et al., 1997; Chaniotis and Stead, 2007).

The Recommendation concerning the implementation of Integrated Coastal Zone Management (ICZM) in Europe states that, in formulating national strategies for coastal management and measures based on these strategies, Member States ''should follow the principles of integrated coastal management to ensure good coastal zone management, taking into account the good practices identified in the Commission's demonstration programme on integrated coastal zone management'' (p. 25).

This programme distilled eight principles that should form the basis of effective coastal zone management. Chapter II of the Recommendation (p. 25) lists these principles:

1) a broad overall perspective (thematic and geographic) which will take into account the interdependence and disparity of natural systems and human activities with an impact on coastal areas;
2) a long-term perspective which will take into account the precautionary principle and the needs of present and future generations;
3) adaptive management during a gradual process which will facilitate adjustment as problems and knowledge develop. This implies the need for a sound scientific basis concerning the evolution of the coastal zone;
4) local specificity and the great diversity of European coastal zones, which will make it possible to respond to their practical needs with specific solutions and flexible measures;
5) working with natural processes and respecting the carrying capacity of ecosystems, which will make human activities more environmentally friendly, socially responsible and economically sound in the long run;
6) involving all the parties concerned (economic and social partners, the organizations representing coastal zone residents, non-governmental organizations and the business sector) in the management process, for example by means of agreements and based on shared responsibility;
7) support and involvement of relevant administrative bodies at national, regional and local level between which appropriate links should be established or maintained with the aim of improved coordination of the various existing policies. Partnership with and between regional and local authorities should apply when appropriate;
8) use of a combination of instruments designed to facilitate coherence between sectoral policy objectives and coherence between planning and management.

In conclusion ICZM European Policy has to face several critical points using mechanism to coastal development (See table 3).

Table 3- Analysis of process-orientated ICZM appraisal mechanisms

Mechanism and source	Key elements	Critique
• Generic Framework for 'Success' • Process indicators • Framework for Progress • The 'Progress Indicator''	• Success' defined in terms of sustainable development • Demonstrates interrelationship of social, economic and environmental objectives • Simple holistic graphic representation • Uses qualitative indicators to identify strengths and weaknesses in the process • Identified Orders of Outcomes leading to sustainable forms of coastal development • Identified 5 steps and indicators to reflect progress against the ICZM policy cycle • Data gathering is based on an ICZM self-assessment questionnaire • Identifies 5 continuous phases of progress and 26 ranked actions • In relation to different geographic scales, over 2 time periods • Activities are answered 'yes' or 'no' by a range of 'practitioners' • Dependent on whether activity is taking place or not • Different colours for 'yes' or 'no' gives the outcome a visual description	• Best applied to individual ICZM initiatives • Graphic model e good for communication • Lacks comparability and detail • Proposes a Good Practice Guide • Individual indices offer a holistic perspective • Limited scope in scoring mechanism • No reference to ICZM progress but does allow for comparability • Useful description of ICZM governance capacity in relation to indicators • A conceptual and generic tool with the focus on progress but the mechanism for comparability is unclear • Useful tool in relating different geographic and administrative scales • Identifies progress over time • Simple and visually effective • Lacks detail • Lacks clarity and objectivity in relation to its methodological approach • Unclear as to the relationship between the 'sustainable development indicators' and the 'progress indicator'

1.2.2 European approach and participation

In this paragraph, after having identified the objectives and paths of the European policy in terms of ICZM development policies, we present a briefly tautly focus on the strategic and tactical principles necessary to achieve the ICZM at local level.

On the ICZM international agenda, stakeholder participation is recommended for sustainable environmental management decisions as the best tool to handle concerns about public valuesissues, including environmental

protection, social acceptability, economic viability and dependence security (including Post and Lundin, 1996; UNEP, 2004).

Moreover, to make local stakeholders responsible is often seen as a best way to handle conflicts in the coastal zone (Hegarty, 1997; Clark et al., 1998; Davos, 1998). As a major task of coastal zone management, the EU (2003) recommends that stakeholder interests, roles and concerns should be assessed and analysed. Through participation, managers as well as stakeholders have the possibilities to learn, educate, build trust, gain legitimacy of decisions, and thus improve decision-making processes (Irvin and Stansbury, 2004).

It is insisted that the traditional top–down and ad hoc approach to coastal development did not work, as it has resulted in confusion, conflicts and a lack of understanding among users (Hegarty, 1997). Thus, the needs for integrated coastal zone policies, based on participatory approaches, are emphasised all over the world including Malaysia (Mokhtar and Ghani Aziz, 2003), Japan (Kawabe, 1998) and Scotland (Storrier and McGlashan, 2006).

The idea is to create the basis for participation in coastal management in a simple way, by learning what stakeholders are interested in, their willingness to participate, and which techniques they prefer. To achieve this, we shaped a simple non-hierarchical conceptual model of the coastal system (see Fig. 2) comprising three interacting subsystems (natural, socioeconomic and administrative) focused on the administrative subsystem (stakeholder engagement). Each subsystem has its own attributes and processes, and the three interact composing a complex system.

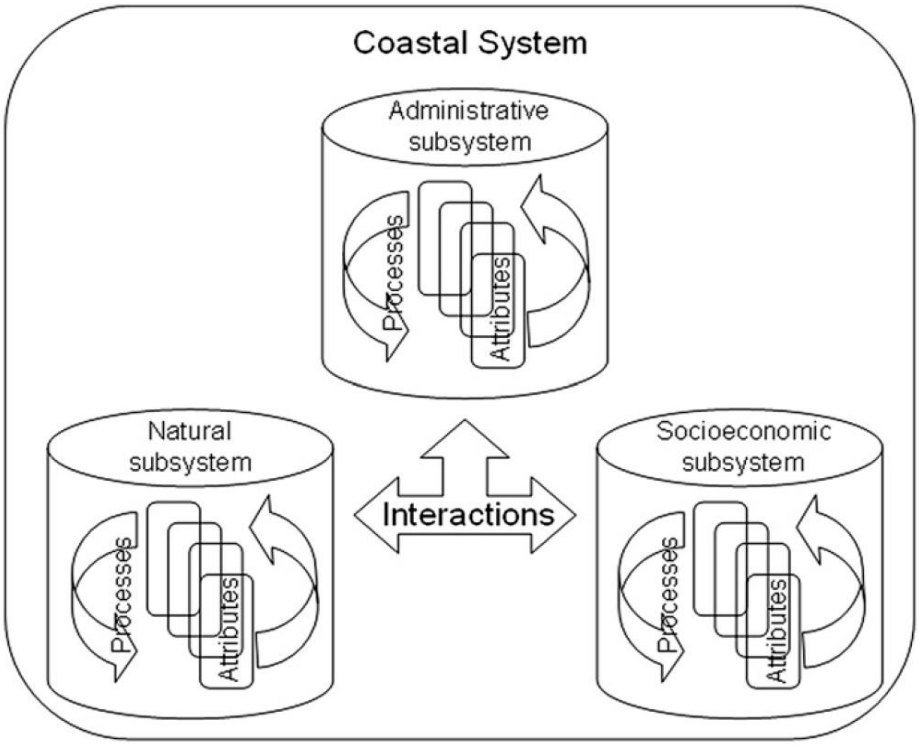


Figure 2 – Conceptual diagram.

The attributes are “stakeholders”, “coastal units” and “economic sectors”, while processes are “public management”, “natural dynamics” and “market deals”.

The methodology comprises 5 steps,

1. Classification of the “natural subsystem” and the “socioeconomic subsystem”.
2. Analysis of past coastal projects to identify relations between coastal units and activities and validate their classifications.

3. Identification and classification of stakeholders according to the relationships between them and with other subsystems.
4. Implementation of a survey among stakeholders to confirm classification and to ask questions about the coastal zone and public participation.
5. Design and implementation of a spatial database with all the data gathered. (WEB GIS).

Definition of such elements allows the coastal zone to be organized by simple concepts, helpful in defining the participatory process. Management units were defined according to previous coastal classification work based on coastal geomorphology and coastal ecosystems.

Apart from natural coastal units, harbours and protected areas have been included in the coastal units because of their singularity, homogeneity and significant spatial development.

These special coastal units overlap with the rest (a protected area which includes an estuary and some beaches, a port inside an estuary, regional and local restrictions); in these cases, stakeholders and the interests of both units are considered.

Frequently, state reforms that have opened for a wider and deeper participation of citizens at local level have been implemented, i.e. the decentralization process of which resources, power and tasks are transferred to lower level authorities (Smith, 2003).

Governance can be described as 'both a strong reform strategy and a particular set of initiatives to strengthen the institutions of civil society with the objective of making government more accountable, more open and transparent, and more democratic' (Minogue, 1997).

Political participation may be interpreted as 'taking part of the process of formulation, passage and implementation of public policies' (Parry et al., 1992). Political participation can be motivated by enhancing the awareness of rights and responsibilities of citizens, holding elected representatives more accountable, or including the realm of direct action by starting with the articulation of grassroots needs and priorities and building popular forms of organisation.

A tension exists between strategic - and deliberative - democracy, implying that a distinction can be made of democracy with voting, interest aggregation, constitutional rights and self-government that involve interaction with coercion, manipulation or deception, and democracy with deliberation that involve interactions with persuasion (Dryzek, 2000).

The concept of citizenship in the democratic theory has to some implied the rights of individual needs, whilst to others it is seen as a broader set of social and civic responsibilities. Political participation is about power and involvements of different social actors (Parry et al., 1992). However, the control of the structure and processes for participation, defining actors, agendas, procedures and spaces for interaction between participants and the authorities, is usually in the hands of governmental institutions and can become a barrier for the participatory processes

Participation comprises a range of different methods (overviews can be found in, among others, Renn et al., 1995; Creighton et al., 1998; Toth, 2001). Participants have been specified according to different roles they may take in the participatory processes. Interest groups, citizens and experts constitute three forms of knowledge; of which interest groups contribute with knowledge derived from social interests and advocacy, citizens contribute with knowledge based on common sense and personal experiences and experts contribute with knowledge based on technical expertise.

The most frequently applied participatory approach applied to support local management.

However, it is necessary to identify a diagram of the principles to achieve a shared decision-making strategy and in line with the ICZM objectives (See figure 3).

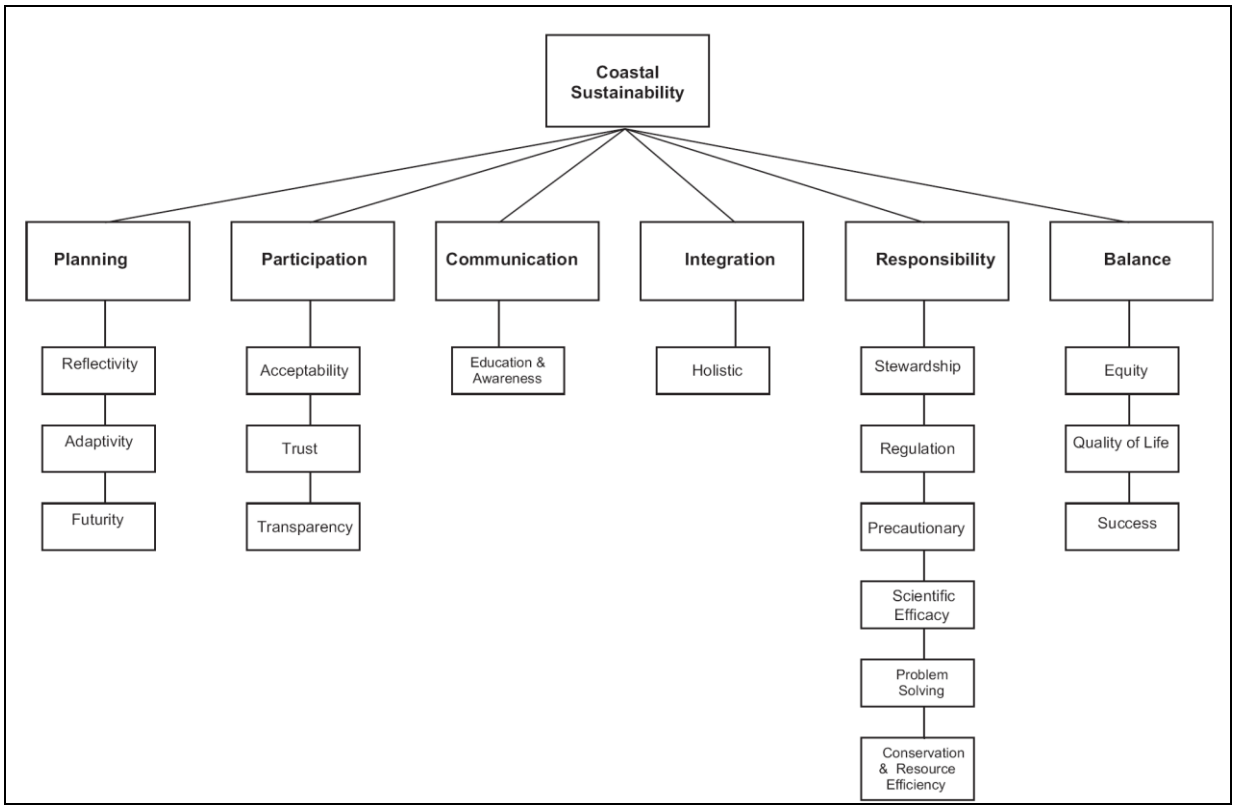


Figure 3 – ICZM sustainability root diagram.

In conclusion, the topics of a consistent strategy to realize ICZM goals can be described in the following points:

- ✓ **Broad holistic approach -** Broad of scope of the programme including inclusion of the offshore environment. Consideration of the broader geographical context for the programme including: land-sea inter linkages; cross-border and neighbouring area impacts (over-lapping e buffer zone);
- ✓ **Long-term perspective** - Linkages with other planning and policy processes in place. Reference to long-term processes and trends. Planning and review periods included within the ICZM programme. Availability of long-term data sets & monitoring for ICZM development.
- ✓ **Local specificity** - Involvement of local stakeholders and participation of the public in ICZM development. Consideration of local characteristics and concerns.
- ✓ **Working with natural processes** – Use of appropriate local information and knowledge. Inclusion of aims, policies and actions related to:
  - ✓ nature conservation;
  - ✓ shoreline management;
  - ✓ natural hazard management;
  - ✓ other natural resource aspects.

Consideration of policies from other and, 'external' plans and strategies which focus on natural process management. Consideration of the dynamics, natural variability and carrying capacity of the natural environment in relation to the ICZM initiative and its impacts. Availability and use of relevant natural process-related information.

- ✓ **Adaptive management** - Evaluation and review procedures in place for the ICZM efforts. A structured process is used to identify issues. A suitable evidence base is present to enable adaptive management to occur. Data and information from previous management informs ICZM development. A combination of instruments. Uncertainties of and gaps in the information base are recognised and are addressed appropriately. A range of tools and approaches are employed. Procedures are in place to identify the most suitable tool set for management. Procedures are in place to ensure consistency between tools.
- ✓ **Involvement of all stakeholders** – Wide stakeholder involvement is an ICZM planning process aim. A wide range of sectors are involved. There is a high degree of stakeholder engagement in the ICZM efforts. Stakeholder involvement occurs throughout all stages of ICZM development
- ✓ **Participatory approach** – Wide levels of consultation and participation with stakeholders and the public are employed Public engagement occurs at all stages of ICZM development mechanisms used to coordinate public involvement are in place. Access to local knowledge and understanding is achieved through participation Public participation is facilitated by publically accessible information.

In conclusion, we can not ignore an homogeneous coastal marine system and a common strategy, also outside Europe, which, however, must be transformed into concrete actions with a coherent and specific tactical approach for single coastal spatial unit.

1.2.3 Regional policies

The main principles of the Community action included in the Proposal for a Recommendation of the European Parliament and of the Council concerning the implementation of the Integrated Coastal Zone Management in Europe "(COM/00/545 8 September 2000) require to implement the integrated management through an horizontal approach, in the frame of a national system:

> ***"... the integrated management of coastal areas requires strategic, coordinated and concerted actions at local and regional level, supported by an appropriate framework at national level ..."***

The Recommendation calls Member States, taking into account the strategy for sustainable development and the decision of the European Parliament and of the Council establishing the Sixth Environmental Action Programme, to ".. a national strategy for the integrated management of coastal areas, through cooperation between regional and interregional authorities as well as with neighboring countries, including countries that are part of the same regional sea. "

'The concept of regional sea as base of the analysis of horizontal policies in the Adriatic region, suggests a long-term strategic approach with a global perspective (thematic and geographic) - recognizing the interdependence and disparity of natural systems and of human activities, highlighting the need for new approaches for the management and development of marine and coastal areas at national, sub-regional, regional and global levels.

The first example of an international initiative for the Protection of the Marine Environment and the regional coasts is the one promoted by UNEP (United Nations Environmental Programme) through the Regional Seas Programmes. Through the Action Plan, the instrument of the Regional Seas Programmes, governments establish a strategy and a framework for the protection of the environment and the promotion of sustainable development. This Plan was adopted for the first time in the Mediterranean Region in 1975 (MAP, Mediterranean Action Plan), whose measures have been incorporated into the "Convention for the Protection of the Mediterranean Sea" (Barcellona Convention) adopted in 1976 and entered into force in 1978.

With 22 contracting parties, the Plan has gradually evolved, with successes and failures, to the " Action Plan for the Protection of the Marine Environment and the Sustainable Development of Coastal Zones of the Mediterranean" (MAP Phase II) adopted in 1995, and to the adoption of the new Convention "Convention for the Protection of the Marine Environment and the coastal region of the Mediterranean" in 2004.

Among the application of the Convention and of its protocols it has been defined, on March 24th 2011, the " Integrated Management of Coastal Zones in the Mediterranean Protocol" (ICZM Protocol), the first legally binding instrument for the application of the ICZM in the Mediterranean Region, after several "soft low instruments" (recommendations, guidelines, white papers, experimental programs, etc.).

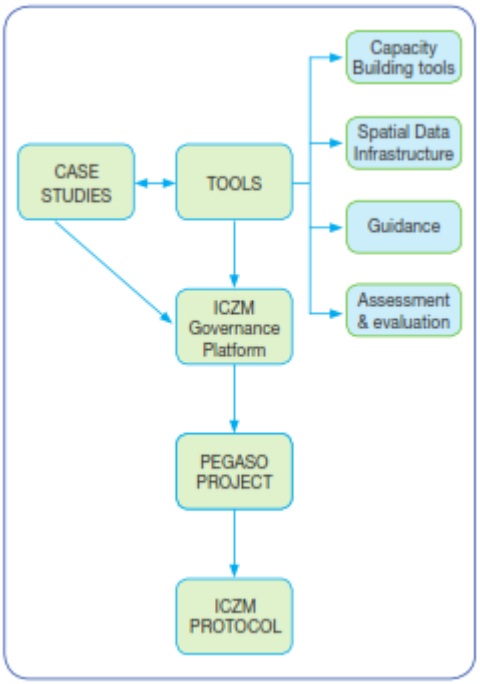
The ICZM Protocol represents an innovation and a model for other regions, thanks to its political weight, aimed to define a legal framework adapted to the integrated management at local level and able to overlap the barriers between land and sea, even at the institutional level.

To support the integrated coastal management and in particular for the implementation of the ICZM Protocol, the EU has co-funded the research project PEGASO (People for Ecosystem-based Governance in Assessing Sustainable Development of Ocean and coast).

A 4 years projects (valid till 2014), with 25 partners representing different Mediterranean and Black sea countires, Pegaso project has a budget of 9 Million euro.

Even in this project the emphasis is on the collection of case studies, as shown in Figure 4, for the sharing of information and best practices in order to build a sustainable management system for coastal areas. The strength point of the project is represented by the capability to involve different actors and the particular attention for the capacity building, obtained by the constant exchange of information through a Spatial Data Infrastructure (SDI). The main objective is to expand the existing capabilities and to develop new joint approaches to support the implementation of integrated policies for coastal and marine areas of the Mediterranean basins and Black Sea.

Figure 4: Pegaso project



Among the 15 selected case studies, relevant for the Adriatic region, is the **"North Adriatic Sea" CASE** project, created to test and validate a set of tools (indicators, environmental accounting, scenarios, participatory and evaluation methods) for a multi-scale evaluation of Mediterranean coastal areas.

Also the North Adriatic Sea Case project is based on the exchange and evaluation of experiences. In particular, the adopted evaluation model is based on a set of indicators for measuring ICZM progresses. Very interesting experiences for the Adriatic Region, one of the Region that are best suited for the adoption of regional development policies due to its characteristic of semi-enclosed sea into which countries with a common history and belonging to the European culture are represented.

Expert view....*Interview with the* North Adriatic Sea Case expert: Marco Tonino -interdepartmental Center IDEAS Ca' Foscari University

1. **Can you, please, provide us with a brief description of the objectives and expected results of Pegaso project?**

The "*People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast*" (from now on PEGASO) is a 7th Framework Programme European project whose main objective is to build on existing capacities and develop common novel approaches to support integrated policies for the coastal, marine and maritime realms of the Mediterranean and Black Sea Basins (www.pegasoproject.eu). These approaches are meant to be consistent with and relevant to the implementation of the Integrated Coastal Zone Management (ICZM) Protocol for the Mediterranean that entered into force in March 2011. The PEGASO started in 2010 and will end at the beginning of 2014. The expected results of PEGASO involve the following three innovative actions:

- the construction of an ICZM governance platform as a bridge between scientist and end-user communities, going far beyond a conventional bridging.
- Refining and further development of efficient and easy to use tools for making sustainability assessments in the coastal zone (indicators, accounting methods, models and scenarios). They will be tested and validated in a multi-scale approach for integrated regional assessment through a number of relevant pilot sites.
- Implementation of a Spatial Data Infrastructure (SDI), following the INSPIRE Directive, to organize and standardize spatial data to support information sharing on an interactive visor, to make it available to the ICZM Platform, and to disseminate all results of the project to the end users and interested parties.

The North Adriatic is one of the 10 Case Studies of the PEGASO project (7 in the Mediterranean and 3 in the Black sea). While the other CASES are at local or subnational scale, the North Adriatic comprises also the transgovernmental scale involving Italy, Slovenia and Croatia. The North Adriatic case is made by 4 main sub-cases dealing with the following issues:

- Climate change impacts and risks assessment in the coastal zone of Veneto and Friuli-Venezia Giulia Italian regions
  - Objective: Integrating the developed Decision Support system for the risks related to climate change impacts (DESYCO) with the Pegaso tool of participation and indicators.
- Coastal bathing water quality assessment in the local site of Chioggia.
  - Objective: Participatory development of a bathing water quality assessment model (BHAM).
- Assessment of the implementation of ICZM policies in the North Adriatic Italian regions
  - Objective: Development of an online survey on the implementation state of the ICZM policies.
- Analysis of the international environmental governance in the North Adriatic (Italy –Slovenia – Croatia) for what concerns the development of a marine protected areas (MPAs) network.
  - Objectives: Analysing the environmental governance related to the international management of MPAs in the North Adriatic through a social network analysis; Verifying the state of implementation of ICZM principles in the management of MPAs in the North Adriatic.

2. **Which are the main topics of interest among those related to ICZM and the key approaches adopted?**

The main topic related to ICZM (recalling the Art. 6 of the ICZM protocol) deepened in the North Adriatic Case are the following:

- **Integration**: integration of tools developed within the project (e.g. indicators, participation, scenarios) and the specific product (e.g. DSS, water quality model) developed in the CASE.
- **Participation**: involvement of the key stakeholders in the process of data collection, expert knowledge and validation during the development of the CASE study activities.
- **Appropriate Governance:** analysis of the environmental governance structure of the three countries bordering the North Adriatic sea.
- **Formulation of land use strategies, plans and programmes:** analysis of the implementation of ICZM policies in the Italian North Adriatic regions.

3. **The cooperation within the partnership has been collaborative? Did you find any problems?**

The cooperation within the North Adriatic Case has been so far collaborative: the involvement of the partners and stakeholders can be considered successful.

4. **The sharing of best practice promotes the evolving of ICZM?**

At this stage of the project we are not able to make any consideration regarding the effects of sharing ICZM best practices since we are still in the implementation phase of ICZM practices within the Case studies.

5. **What are the main problems addressed?**

Since we are not yet sharing best practices, we cannot provide any contribution to this issue.

6. **In the frame of North Adriatic Sea Case Project have you analysed Best practices relating to the Adriatic, and not only, coasts? If yes, could you, please, provide us with some information?**

The main aim of the project is not to analyse "best practices"; however in the frame of the analysis of the ICZM policies implementation, at the end of the project we will be able to depict the current state and progress of the ICZM policies implementation.

7. **Could you, please, provide us an ongoing evaluation of the project?**

At the moment we are at the midterm of the project and so far we have met all the intermediate objectives related to the North Adriatic case.

8. **What would you suggest to those who want to adopt a shared approach on ICZM?**

For those policy makers intended to apply an ICZM strategy we would suggest to rely to the experiences and results gained in realities that have already applied ICZM to deal with similar coastal issues (e.g. erosion, urban sprawl, etc.). The most important advice is that there are no common solutions, the peculiarities of the local context have always to be taken in account.

9. **Which are the useful lessons learnt for an ICZM holistic approach in the Adriatic Region and what are the most pressing themes to deal with?**

From the gained experience in the development of the North Adriatic Case we have understood that the most relevant challenges are related to the sectoral approach of the involved stakeholders that face difficulties in finding a common vision and a common language in the development of strategies. The pressing theme to deal with is the need of a transnational approach to achieve the sustainable development of the North Adriatic Case: *only a common strategy that overcomes local interests and international conflicts can be successful for the conservation of the ecosystems and the promotion of effective ICZM strategies.*

2 SECTION II: THE ADRIATIC REGION

2.1 BOUNDERIES OF THE ADRIATIC REGION

The Adriatic regions and cities along the coast have long been engaged in the effort to integrate economic growth and sustainable development policies for the protection of the ecological system of the Adriatic basin.

Several attempts to aggregate inter-institutional and cross-border governance to address issues of common interest have been initiated in the Region. A Forum of Adriatic and Ionian Cities was established in 1999 bringing together nearly 40 cities in the region. The Adriatic-Ionian Initiative (AII) was launched in 2000 on the occasion of the Conference on Development and Security in the Adriatic Sea and, in 2006, the Ionian-Adriatic Euroregion was established with the aim to ensure a perspective of growth in quality and standard of living for the populations in the region (box 1 "cross-border cooperation in the Adriatic").

Among the most interesting documents available on the area, the Adriatic Action Plan 2020 (AAP) has been developed within the Forum of Adriatic and Ionian Cities. It was approved in 2002 by the United Nations at the World Summit in Johannesburg and selected as "best practice" to the Third World Water Forum in Kyoto in 2003. The AAP pursues the aim to spread of sustainable instruments and practices on local development (use of indicators and sustainability reports, environmental management systems in local government, governance and participation processes) through an “Action Plan” to achieve comprehensive strategies, objectives and activities for the Adriatic in year 2020.

The AAP is inteded to define a sort of Adriatic sustainable way-of-life, a sustainable lifestyle, strongly characterized by existing identity/ies in the region, from a single ecological system, the Adriatic basin, based on common and shared tools for marketplaces and institutional governance. The AAP is the first framework document of this type which provides a mandatory commitment for local governments towards a common scenario (urban climax) that takes sustainability as a driver of innovation, both in marketplace and governance, promoting the integration of sustainable products and processes.

To build a sustainable regional development, attention should be focused clearly on the regional sea. Environmental protection of the Adriatic Sea is one of the main issues in the Mediterranean Sea, because his pelvis is too narrow and shallow to continue to absorb large pollution due to uncontrolled fishing industry, excessive tourism and maritime transport. These issues are further aggravated by the global warming and climate change.

Many conventions, guidelines and action plans for nature coastal protection in Adriatic Sea are in place: remediation action plans for large areas; international agreements on maritime trade in hazardous; policy documents for a "responsible fishing"; integrated management of highly vulnerable coastal areas; practices for a sustainable tourism; etc. These are all part of a wide – but complex and fragmented - regulatory framework, which includes rules at international, European, national and regional levels, also issued by a number of countries bordering Adriatic Sea that are not members of the European Union.

Through the International Workshop on maritime policies – which was organized by the European Commission, the Italian Ministry of Foreign Affairs and the Autonomous Region Friuli Venezia Giulia – an

attempt has been made to formulate a comprehensive approach to some of the above mentioned issues by elaborating a strategy for an Adriatic-Macro-region.

Three specific topics were discussed:

- Blue Growth - tourism, research and innovation in the maritime sector;
- Competitive and sustainable transport and security of the maritime space;
- Protection of the marine environment and fishing.

The European Commission and the Directorate of Maritime Affairs for the Mediterranean for the most part concentrate their attention on these subjects with the final goal to elaborate a common strategy for the Adriatic-Ionian region.

The Integrated Maritime Policy in the Mediterranean is considered as a strategic issue to ensure a successful and sustainable growth in the region, job creation and a significant added value for populations living in coastal areas. Maritime Affairs are considered an ideal area for smoother and immediate cooperation between coastal regions, particularly in Adriatic region, where, hopefully, the sea must cease to be a barrier to become a common good for strengthening cooperation among countries. The assumed pattern for developing a common strategy is the same strategy developed in the Baltic Sea, where more than 80 projects are currently on going and a strong sense of belonging and cooperation between different countries and regions concerned has been established.

Blue Growth, fishing, marine research, environmental protection, maritime surveillance and security are considered a starting point and an ideal base for an effective maritime strategy in the Adriatic-Ionian region. All these components can produce good results in the short- period if included in a general framework of broader objectives appropriate to the needs of each country involved. The Adriatic Sea is a highly sensitive marine area which is facing serious environmental challenges, but it is also a macro-region where fast progress in some key-sectors (e.g. Tourism) are showing significant opportunities for economic growth, tha could possibly include long-term perspective for a sustainable development.

Our analysis on the region shows that **the main environmental and socio-economic factors**, common to most of the Mediterranean area, are:

- Eutrophication and pollution from agricultural, industrial and port activities, tourism and population growth;
- Introduction of alien species through ballast water of ships, fouling, imports and biological invasions;
- Fishing and over-exploitation of habitats and their biological resources.

All these elements contribute to the **loss of marine biodiversity**, especially along the coast, and this is one of the major environmental problems of our time, which is further worsening in recent years because of climate change and rising sea temperatures. Unfortunately, sectors responsible for the majority of damages to the Adriatic coastal areas are also key areas in economic growth and development of the Adriatic region, and this complicates definitely options for environment protection.

Detailed information on the Adriatic Region are therefore essential in order to promote an integrated policy for coastal areas. Coastal zones represent an important asset, but also the most vulnerable part of the Adriatic Region. This Report is firstly intended to define **some priority issues** in Adriatic Region, which will led to the identification and selection of the existing “Best Practices” among projects on integrated management of coastal zones and sustainable development in Adriatic Region.

BOX – Adriatic Cross-Border Cooperation

- ***Forum of Adriatic and Ionian Cities*** is an association established in 1999 to promote innovative forms of decentralized cooperation and partnerships between the municipalities of Albania, Bosnia and Herzegovina, Croatia, Greece, Italy, Slovenia and Montenegro. Its headquarter is located in Ancona, Marche Region, at the headquarter of the National Association of Italian Municipalities. Other than 28 Italian cities, the following European cities are included in this network: Corfu, Igoumenitsa, Parga, Preveza and Patras in Greece; Durres, Lezhe, Saranda, Shkodra and Vlora in Albania; Dubrovnik, Ploce, Rijeka, Sibenik, Split and Zadar in Croatia; Island and Koper in Slovenia; Neum in Bosnia and Herzegovina; Bar in Montenegro. The Forum operates to encourage administrative cooperation and the economic, social, cultural and scientific integration in the Adriatic-Ionian space, by facilitating trade and cross-border flows, and to offer a shared and common image of the area.
- **The Adriatic-Ionian Initiative (AII)** was launched on the occasion of the Conference on Development and Security in the Adriatic and Ionian Seas held in Ancona on 19-20 May 2000, attended by the heads of government and foreign ministers of six Mediterranean countries (Albania, Bosnia-Herzegovina, Croatia, Greece, Italy and Slovenia) and the European Commission. At the end of the Conference, the Ministers of Foreign Affairs of the participating Governments have signed the 'Declaration of Ancona, "in which they called for the strengthening of regional cooperation to promote political and economic stability of the region and to create a solid foundation for the integration process in European Union. In 2002, Serbia-Montenegro joined All members. Following the split of the federation, in 2006, the two countries have both maintained membership in the Initiative, which currently includes eight countries. All regional cooperation area consists of four working groups (small and medium-sized enterprises, transport and maritime cooperation, tourism, culture and inter-university cooperation, environment and fire fighting), without prejudice to the possibility for the Presidencies to extend cooperation in other areas, with the approval of the Board.
- **The Adriatic Euroregion**, founded in Pula on June 30, 2006, is an association of local and regional authorities bordering the Adriatic Sea; its structure is in accordance with "patterns and framework agreements, statutes and contracts in cross-border cooperation of territorial communities or authorities" developed by the Council of Europe on the basis of the Madrid Outline Convention of 1980. It currently counts 23 members from six Adriatic states (Italy, Croatia, Slovenia, Bosnia and Herzegovina, Montenegro, Albania). Priority areas of activities are tourism, culture, environment, fisheries, transport and infrastructure, economic activities.
- **Northern Adriatic Euroregion (ER2A)** brings together the Italian regions of Veneto and Friuli-Venezia Giulia, the Austrian province of Carinthia and Croatian counties of Istria and Primorsko-Montana. A formal protocol was signed on June 21, 2007 to initiate procedures for the establishment of a European Group of Territorial Cooperation (EGTC). This pattern of trans-regional institution with legal personality, required by EU Legislation, allows the regions to organize and manage CBC programs in many areas: health and human services, culture, tourism, protection of linguistic minorities, innovation and research, management of territory, vocational training, infrastructure and services for transport, energy, telecommunications, civil protection..
- **The Regional Cooperation Council (RCC)** was officially established on 27 February 2008, as a continuation of the Stability Pact for South-Eastern Europe. The RCC serves as a focal point in support of the Southeast European Cooperation Process (SEECP) and the process of European integration and Euro-Atlantic integration. It is aimed to create a political climate conducive for the implementation of projects in the region to benefit each individual participating country. The activity of the RCC focuses on six priority areas: economic and social development, energy and infrastructure, justice and home affairs, security cooperation, development of human capital and parliamentary cooperation as a cross-cutting theme. The organization maintains close relationships with key players in the area, such as governments, international organizations, international financial institutions, regional organizations, civil society and the private sector. The RCC is made up of 45 member countries and international organizations and financial institutions. Its secretariat, led by a Secretary-General, has its headquarters in Sarajevo and a Liaison Office in Brussels.
- **The Eurodistrict of the Adriatic sea**, established in Termoli on March 29, 2008, is also inspired to the existing patterns of territorial co-operation of the Council of Europe. It is composed by 11 Italian municipalities of Molise , five municipalities of Montenegro and the Albanian town of Shkodra, with the aim to encourage and promote, through cross-border association based on private law, territorial cooperation initiatives between communities and local authorities, public bodies and private entities on matters that, according to the law of their respective countries, fall under the responsibility of the municipalities involved. (Motions on the Adriatic-Ionian macro-region 1-00168, 1-00168, 1-00486, 1-00487, 1-00490, 1-00490, 1-00502, 1-00515 and 1-00515 of the Italian Senate).

2.1.1 Eastern Adriatic

2.1.1.1 General context and infrastructure

Eastern Adriatic coastline includes Slovenia, Croatia, Bosnia and Herzegovina, Montenegro and Albania, with more than 800 km length. The sea has a width that varies from 90 to 200 km. It is connected to the south-east by the Ionian Sea through the Strait of Otranto. Factors related to geographic and cultural proximity have favored the intensification of multilateral relationships between the Adriatic coastal regions. These relations pursue the aim to support the development of local-based processes for a harmonious growth, sustainable development and integration among different peoples through a common social, economic and cultural policy for the Adriatic Region.

A common policy on these subjects will led to a cross-border cooperation between neighboring authorities with the aim to establish economic and social centers and joint strategies for sustainable spatial development to overcome the isolation characterizing the Adriatic Region. The integrated management of coastal zones can be certainly mentioned as one important strategic issue since it is always included among the priority subjects of cooperation programs, such as:

- IPA Adriatic Cross-Border
- The PlanCoast project (Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Germany, Italy, Montenegro, Poland, Romania, Slovenia and Ukraine).

In terms of national initiatives, Croatia has joined the ICZM Protocol and, even if a national strategy for the EU ICZM Recommendation has not been presented yet, Croatia has prepared several auxiliary documents, including:

- Spatial Strategy of Croatia (1997),
- Programme for Spatial Development of Croatia (1999),
- National Environmental Action Plan (2002),
- Decree on the Protection of Coastal Area (2004),
- Conservation and sustainable use of biodiversity in the Dalmatian coast through green coastal development - GEF / UNDP PDF B Project Brief (2005).

Even in **Slovenia** (which ratified the ICZM Protocol in 2009) a national ICZM strategy is not yet officially in place, but the first steps towards the definition of an integrated strategy has been undertaken successfully through two main programs: the Regional Development Programme 2002 -2006 (RDP) and CAMP Slovenia (2004-2006).

The entire coastal area of Slovenia is divided into three Municipalities - Koper, Izola and Piran - and is managed by a Water Management Authority, the Ministry of Environment, Spatial Planning and Energy, and the Regional Unit of Koper.

The main structures involved in the implementation of the EU ICZM Recommendation include: the Ministry of the Environment, the Environmental Agency of the Republic of Slovenia, the Office for Planning, the Agency for Efficient Use of Energy, the Inspectorate for the Environment and Territory, the Administration of Maritime Transport, the National Agency for Regional Development, the Agency for Agricultural Markets and Rural Development, the Regional Agency for Development of the South (coastal littoral and coastal karst).

The main regional institution for coastal development is the Regional Development Agency which manages the preparation and implementation of the regional development plan.

Although no legislation, institutional structures or processes and procedures on ICZM are already in place, a series of projects and events recently started in **Bosnia and Herzegovina** on ICZM have been able to demonstrate a growing interest towards the issue of an integrated management of coastal areas: e.g., a conference on the PlanCoast project addressed two main subjects: how establish a monitoring system to

control the quality of sea water and how start the process of ICZM in coastal areas of Bosnia and Herzegovina.

The "Establishment of a system for monitoring water quality in the coastal area of Bosnia and Herzegovina - Introduction of ICZM processes in the coastal area of Bosnia and Herzegovina" was the first step towards the creation of ICZM practices in Bosnia and Herzegovina. This paper was followed by the expression of intention to sign and ratify the ICZM Protocol in 2010.

Albania has ratified the ICZM Protocol in 2010. Currently, the Country has no national legislation concerning ICZM, but it has a coastal zone management plan developed in years 1995-1996 and approved in 2004.

The plan for the coastal areas comes from the Coastal Area Management Programme (CAMP) for the central coastal region of Albania (Durres-Vlore) and the Albanian coastal management plan (North and South). To date, the World Bank is working to update the Coastal Zone Management Program, a management plan for coastal areas.

In addition, Albania has adhered to several projects in the field of ICZM:

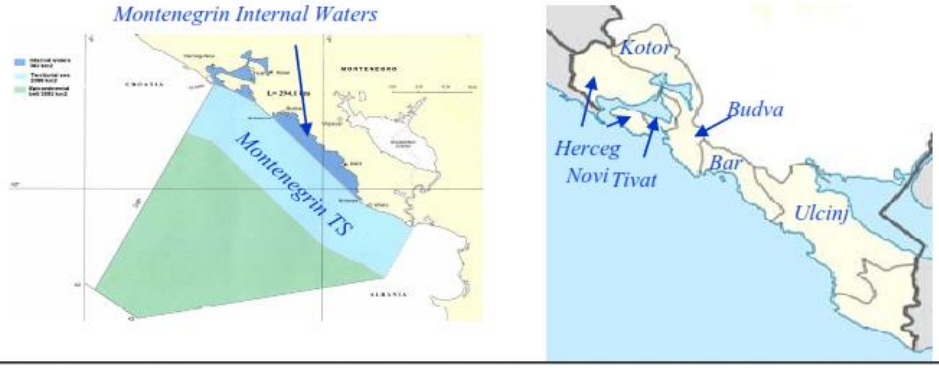
- Integrated Coastal Area Management (ICAM) Programme for the central Albanian Coastal region;
- Albanian Coastal Zone Management Plan (1994 - 1996);
- National Biodiversity Strategy and Action Plan (BSAP);
- Integrated Coastal Zone Management and Clean-Up Programme;
- PlanCoast in Albania.

In 2007, **Montenegro** has adopted a “Spatial Plan for the coastal zone / Public Maritime Domain” as a first step towards the establishment of an integrated coastal zone and its resources, including both the area of the territorial sea and a narrow coastal strip which is considered a functional unit with the sea. The Plan defines all important activities in the field of economy, environmental protection and planning of the use of the coast. These activities are managed by the Public Company Coastal Zone Management-Morsko Dobro. The development and implementation of the Spatial Plan is the responsibility of the Ministry of Spatial Planning and the Environment.

The document was the basis for the formulation of the National Strategy of Integrated Coastal Zone. The Draft National Strategy on Integrated Coastal Area Management (ICAM NS) defines the “Coastal Area”, which represents an area of great importance for the Republic of Montenegro, by: illustrating the boundaries between marine (outer line of the territorial sea) and land; setting the administrative limit boundary of the six coastal municipalities (Herceg Novi, Kotor, Tivat, Budva, Bar and Ulcinj) inland, with the exception of Lake Scutari Territory National Park in the municipality of Bar.

The ICAM NS has been developed with reference to the Mediterranean Strategy for Sustainable Development and the Convention of Barcelona's protocols (the EU ICZM Protocol was ratified in 2008), and the EU guidance documents for the marine environment and coast. It identifies the key issues, challenges and strategic objectives for the integrated management of coastal areas and includes a number of operational objectives with operative measures, activities, indicators and potential partners for implementation.

The Plan is aimed to contribute to the final Country’s goal to join the European Union, namely by ensuring the sustainability of the economic development in the long term.



Source: Policy Research Corporation based on PAP/RAC, 2008, Coastal Area Management Programme Montenegro – feasibility study, Podgorica

Source: Policy Research Corporation based on PAP/RAC, 2008, Coastal Area Management Programme Montenegro – feasibility study, Podgorica

As for the **accessibility**, **Croatian regions** appear to be those with the most significant development of the infrastructure system. The extension of the road network is good enough, although it is limited for the most part at regional and national level. Navigation and maritime transport is good.

A contribution to the improvement of the infrastructure system has been achieved with the creation of several highways, such as the highways Zagreb-Rijeka and Zagreb-Zadar-Split. As for rail transportation, both passenger and freight lines don't have external links, with the exception of the rail link between the international port of Rijeka and the Central and Eastern Europe via Zagreb.

Activities related to traffic and communications are of great importance for the Croatian economy, particularly in coastal regions and mountain-Dubrovnik Neretva, as shown by the regional data available on employment, revenue and number of entrepreneurs. The transport and sorting of goods is concentrated on land-transportation, maritime and coastal transport and auxiliary activities.

Bosnia and Herzegovina has sea, rail and road links relatively well developed both inward and outward; however, an improvement of land transport is expected, particularly through the modernization roads network and construction of new roads, new air and sea routes through the Pan-European corridors (eg, Corridor V, which is the shortest way connecting Adriatic Sea with Central and Eastern Europe).Significant opportunities to increase connections and to promote inter-modal transport along corridors can be exploited in the fluvial transportation sector.

The infrastructure system of **Montenegro** has a fairly extensive network of roads, of which over 30% is made up of modern coastal roads and regional roads. Railway connections are not sufficient because of the limited extension of the railway line, which is electrified for the most part. The main access route to the region, both

for goods and passengers, is represented by the port of Bar, which is located in a strategic position at the entrance of the Adriatic Sea.

The eastern coast of the Adriatic is among the most beautiful, mainly for its natural environment, but also among the most vulnerable coasts in the region.

Some large ports are located in the Eastern shore of the Adriatic, which are important both for freight and passenger transport (Koper in Slovenia; Rieka, Split, Zadar, Ploce and Dubrovnik in Croatia, Durres in Albania, Kotor and Bar in Montenegro). Split is the first port of the basin, with over 4 million movements a year.

The movement of passengers in the area is related in large part to the cruise market and ferries. After years of intense growth, the movements are showing a substantial decrease, particularly to and from Albania: -4.8% of passengers and -2.8% for HGVs and Montenegrin market.

Croatian market is the only one in the region where passengers increased in 2010: +11,8%, against zero-growth in 2009 and -5% in 2008. Ancona, on the Italian side, and Split, on the Croatian side, showed a real boom in movements, respectively +20.3% and +33.8%. The Bari-Dubrovnik connection gave very positive results, probably due to the growing flows of religious tourists to Medjugorje.

The container market showed signs of recovery in 2010: the Slovenian port of Koper (which is an important access route between the Adriatic and Ionian highways and transportation routes in the Corridor within TEN-T networks) recorded 39% increase, while other ports on the eastern side recorded only a smaller +5%. One of the historical gaps in the Mediterranean ports, and the Adriatic in particular, is the lack of land connections by rail to and from the ports. This represents a great difference from the situation of the ports in Northern Europe, where train connections are very well developed and capable of connecting directly to the ports, inland terminals and large consumption areas.

Currently, the real costs of railway traction are difficult to compare with the cost of road transportation for a number of reasons, among which the high costs of incoming and outgoing terminalization, and often charges related to road terminalization.

On the eastern side, connections exist both from Koper and from Rijeka, the latter reaching 25% of the container traffic by rail. Ploce has several connections with Bosnia and Herzegovina, and Bar with Belgrade and Novi Sad.

In the Adriatic few ports are equipped with real rear ports, exception made for Trieste (Fernetti terminal and Cervignano) and Rijeka (terminal of Skrijevo).

All the ports, especially those handling many goods, are currently investing in intermodal transport. Most of the initiatives planned by the Port Authorities aim to increase the capacity of the ports infrastructure, creating platforms that can handle intermodal traffic, or increasing the number of tracks or creating smoother connections to the national network.

Intermodal links may have priority also in the perspective of the development of the East Mediterranean, including the African side, whose countries are the real frontier of short sea shipping to and from the ports of the Adriatic and Ionian seas. Countries such as Turkey, Israel, Egypt, have high potential for GDP growth, infrastructure and level of international openness. European Union can encourage this kind of investments, mainly through programs such as "Marco Polo", which aims to reduce road congestion, to improve the environmental performance of the transport system and to enhance intermodal transport. EU can contribute to making transport system effective, sustainable and able to provide added value to Europe without negative impacts on economic, social or territorial cohesion and without increasing congestion which now affects many coastal areas.

Finally, it should be remembered as a better access to the whole area could be achieved through the implementation of the projects included in the Program for Corridor VIII. This represents a strategic option for

economic and social stabilization in the Balkans and for improving relationships between Italy and Eastern Countries. In this context, a strong multilateral cooperation is the first concrete response to any requests of construction, improvement and technological modernization of the transport infrastructure as well as to the needs to improve existing logistics system.

2.1.1.2 Social and economic context

Different economic and social conditions exist in Adriatic Region, not only between countries but also within national territories.

Several important changes happened in the Adriatic in the last decade. In economic terms, the areas of the eastern Adriatic are engaged in a delicate transition towards self-sustaining economies with the aim to reduce their dependence from international economic aids. Since 2001, some Italian Adriatic regions have faced stagnation in their economic growth due to a difficult phase of the international situation and the weak domestic demand.

Average population density varies greatly among the Eastern Adriatic Countries: the highest value is in Albania (165 inhabitants / km²), while the lowest values are those of Bosnia and Herzegovina (32.5 inhabitants / km²), Croatia (57.7 inhabitants / km²) and Montenegro (65 inhabitants / km²).

Appreciable differences in population density are found, however, even in the various countries: values far below average are recorded in particular in the municipality of Cetinje in Montenegro (20 inhabitants / sq km²) and in the county of Licko-Seniska in Croatia (10 inhabitants / km²).

As for **demographic trends**, population dynamics is generally positive: the majority of counties recorded a growth in population over the last decade, with the only exceptions of the counties of Croatia and Serbia, which show a decline in population between 1991 and 2001. Significant increase in the number of residents was found for some municipalities of Bosnia and Herzegovina in the period 1996-2001. Main reasons behind the gradual repopulation of the eastern Adriatic countries, which begun at the end of the Balkans War, are: the return of the Internally Displaced Persons (IDPs) and the gradual economic recovery. Migration flows for economic reasons are very frequent: people in search of a job in EU nations will remain a key determinant of the demographic trends.

Internal migrations are also on the rise, as people are moving in response to inequitable distribution of resources, services and opportunities. These movements of people often take the form of “exodus” from rural to urban areas, which represent a phenomenon particularly relevant in Albania. However, positive demographic changes have not stopped, at least in some areas, the structure of the population aging shows the predominance of aged people, associated with high dependency ratios: this has a negative impact on the availability of workforce over the time and undermine the perspective productivity of human capital.

The **demographic structure** shows a marked difference in the weight of age groups, as highlighted by the old age index, which ranges from 142 in Slovenian region of Obalno kraska to 29 in Albania. Albania is the European country with the youngest population: according to 2001 data, 34.1% of the population was below 14 years old and only 8.6% was more than 60 years old. Nevertheless, the intense migration flows, particularly to Italy and Germany, constantly reduce young working-age population. Longevity has an impact on life expectancy at birth: in Italian and Greek provinces, it is around 6-7 years higher than that of the countries with the lowest values (Albania, Serbia and Montenegro).

Tertiarization of economy is low in Eastern Adriatic countries, while agriculture still accounts for a considerable part of the added value. In particular, Albania is the country of the region where agriculture detains the higher weight on GDP compared to other economic sectors, although its share is declining gradually (in 2000, it represented more than 50% of GDP).

Industrial sector is undoubtedly the sector that suffered the greatest setback in the years of civil war and socio-economic crisis, which resulted in the destruction of infrastructure and the arrest of main productive

activities, particularly in the industrial sector and mining. Consequentially, for the sake of survival production shifted from industry to agricultural sector and trade.

Since 2000 a sharp recovery has been recorded in the industrial and construction sectors (Bosnia and Herzegovina and Albania), which still represent the main receipt of the investment programs, in manufacturing sector and services (Croatia). The **maritime sector** is particularly important for these economies: access points to the sea and, in particular, the commercial ports (eg, Koper in Slovenia) would allow this area to enhance virtually all economic sectors, among which the most promising are tourism, transport, distribution and logistics.

Tourism and financial services occupy an important place in the Services sector, with a continuous expansion, especially in Croatia and Albania. In particular, Tourism will represent a very important resource in the near future for the eastern Adriatic, since it could serve as a means for attracting additional investment. Tourism can contribute significantly to economic growth in connection with the growth of the private sector, the implementation of financial reforms and the development of infrastructures.

While the economy of the Italian Adriatic regions largely relies on tourism, which is traditionally one of the most active and developed sectors of the economy, in the southern areas of the eastern Adriatic tourism is still a marginal phenomenon.

Many areas of the eastern Adriatic represent an extraordinary pool of “biodiversity”, both from a natural and cultural point of view, thus showing a great potential for the development of eco-tourism and for cultural and religious tourism, other than sea tourism. However, only the sea tourism segment is sufficiently structured at the moment: it is driven by the accommodation offer in Croatian regions, where tourism is still growing and represents one of the most important economic activities providing a fundamental source of employment.

Along the Adriatic coast hundreds of cities, towns and villages are potentially able to provide an additional tourist offer of sports, entertainment, sightseeing and shopping. Other than the tourist attractions represented by the old coastal cities such as Dubrovnik, Korcula, Trogir, Split, Zadar, Šibenik and Hvar, Croatia is rich in cultural resources, including archaeological sites, and has a large number of small villages that have maintained their historical identity and traditions.

Croatian tourist offer is mainly concentrated on the coast, where hotels and complementary services are located, which usually consists mainly of private accommodations. However, the accommodation capacity does not meet demand during the high tourist season. Finally, even if nautical tourism increased in recent years, it represents an additional factor of pressure on the coast.

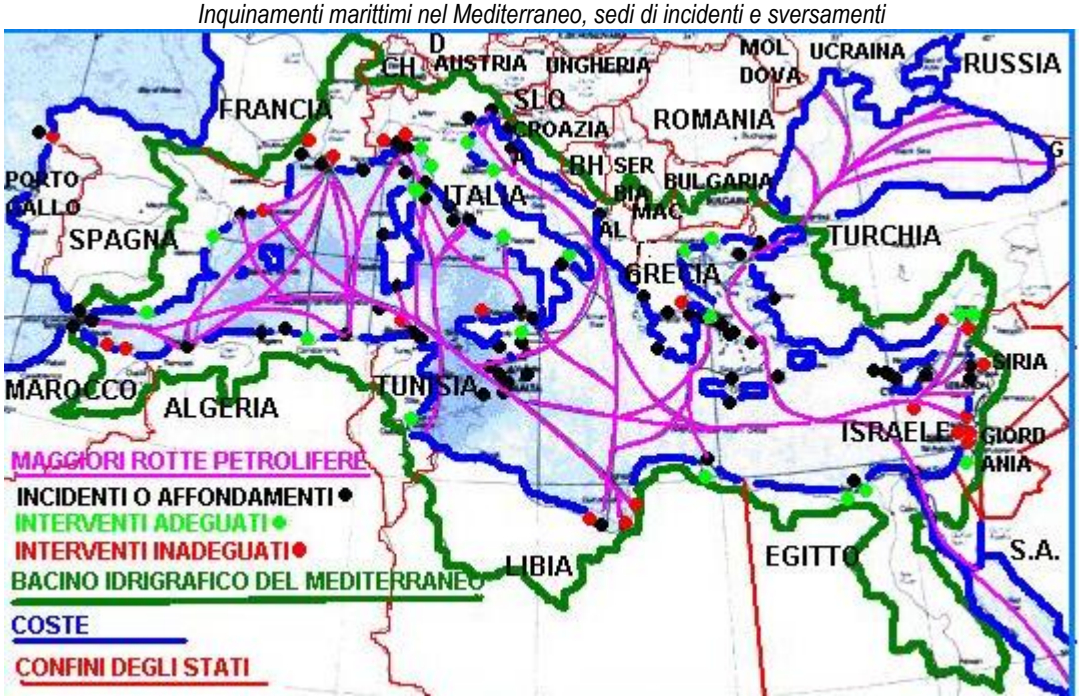
In touristic areas of Bosnia and Herzegovina and Montenegro, the accommodation offer is very poor and tourist services are poorly organized, especially when compared to the availability of resources, even if sea tourism, winter skiing and nature-based tourism increased significantly in Montenegro, which represents one of the most attractive and uncontaminated area of the eastern Adriatic. Inconsistent and sporadic are the tourist flows in Albanian regions: these flows are concentrated in the summer and are represented mainly by flows of Albanian migrants coming back for holidays.

Different types of tourism - environmental, cultural, sports - are without a doubt one of the sectors that can trigger positive development processes and favour a better exploitation of resources. However, international demand needs stimulation, while accommodation capacity needs to be improved, qualified and extended to the whole territory. The development of integrated tourist packages with a focus on sustainability is highly desirable as they could be able to reduce two main issues that limit the potential of the tourism sector: the high seasonality of demand and the congestion of the activities on the coast.

2.1.1.3 The environmental context

For a number of years the Adriatic has been one of Italian seas that have suffered most from eutrophication. Generally speaking, the Adriatic Sea represents an extraordinary environmental ecosystem, an enormous "closed sea" where a possible accident with dumping of pollutants would cause a critical scenario and where it is not thinkable to increase the impact of sea traffic.

Inquinamenti marittimi nel Mediterraneo, sedi di incidenti e sversamenti



The eastern Adriatic extends from the Obalno-kraška region of Slovenia to Greece, including many Croatian islands, and presents a continuity of landscape and environmental heritage, which is, however, now increasingly threatened by the development processes and progress.

In general, a lack of sewage and waste disposal systems and constant atmospheric emissions of polluting substances deriving from transport and industrial processes and, in particular, combustible fuels for energy production are frequently detected in these countries.

In terms of settlement, the Adriatic basin is characterized by:

- Growth of tourism with high environmental impact;
- The growth of the urban areas along the coast of Croatia, Montenegro and Albania, with serious risks to emulate the increase in building of the Italian coast, unfortunately devastating the natural heritage.

Current trends suggest to considering carefully the potential environmental impact of the rapid expansion of tourism, in order to safeguard the free areas still free from urbanization and land use.

In the northern part of the Adriatic basin are the Slovene region of Obalno-kraška and the north of Croatia, the peninsula of Istra. This area is the most developed, having a high level of urbanisation and a well developed infrastructure. The area is crossed by Trans European Corridor V which connects Lisbon to Kiev and is therefore in a strategic position for access to central- eastern Europe.

The Slovene territory also has many environmental resources. Obalno-kraška region has a coast with thick vegetation. Along the coast there are three protected areas, the natural reserve of the Škocjanski zatok, the

Strunjan Cliff which is the highest rocky formation of the Adriatic, and the Salinas of Sečovlje. Agriculture has a negative impact on water quality due to the shortage of water treatment plants.

The Croatian peninsula of Istra, is subject to numerous environmental conservation policies. There is the Brijuni Islands National Park, composing fourteen islands with significant biodiversity.

On the opposite coast are all the western counties from Istra to Dubrovnik. The Dalmatian islands with two national parks (Mljet Islands and Kornati) are on one side of the well indented coast with the Dinaric Alps that drop down to the sea in some stretches on the other side. In addition, there are five other national parks in the regions covered by the Programme (Risnjak, Northern Velebit, Paklenica, Krka and Plitvice Lakes).

In the southern part of the Adriatic Sea, Montenegro - with its long jagged coastline - is separated from the hinterland by high limestone mountains cut by canyons and gorges. In the north there is the only fjord in the southern basin of the Mediterranean, the Boka Kotorska, which is part of an area with an exceptional environmental and socio-cultural interest protected by the UNESCO.

The maritime zone of the Adriatic Sea across the coast of Montenegro is 200 km wide and is the area of the South Adriatic basin in which the biggest depths of the Adriatic have been measured (1340 m). It differentiates from the other pats of the Adriatic in that it has the largest water mass, 26 000 km^3 on 32 000 km^3,and the strongest exchange of water with the Mediterranean. This inter basin change, that occurs through the undersea (Outran) door (741 m deep), has a great impact on the open waters and on the coastal waters of the South Adriatic inshore waters, including the waters along the Montenegrin coast.

Most of the coast is directly exposed to sea waves. The coast is mostly rocky, with very notable cliffs especially in the zones exposed to high waves. Typical examples of cliffs are on the shore of Luštice, Donji Grbalj, around Budva, between Becici and Sutomore, and between Bar and Ulcinj. Sections of rocky coast are stable, as u rule, and there are no distinctive morphological changes due to the impact of natural factors.

More than one hundred beaches are along the Coastal Zone shore. Most of them are the so-called "pocket beaches" because they are located in coves between two capes. Typical examples of such beaches are Mala plaža in Ulcinj and beaches in Bar, Sutomore, Canj, Buljarica, Petrovac, Becici, Budva, Jaz, etc.

Drifts on these beaches come partly from rivers and streams that flow into the sea in the cove zones, and partly from coastal erosion due to wave impacts. Most of the beaches are of sandy-pebble material, while only some of them are covered by large round pebbles.

There has been no measuring of wave characteristics in the area of the Coastal Zone although waves are the most important natural factor for coast and beach stability. Information can only be obtained through international organisations because no relevant institution in Montenegro has the right to use and disseminate this kind of data. Wind measurement in the area of the Coastal Zone was used for obtaining information on waves.

There are systematised data on wind measurements (direction, frequency, medium and maximum speed) over a longer time period for Ulcinj, Bar, Budva and Herceg Novi. A mareograph (tide gauge) of Bar is used for measuring high tide and low tide characteristics, and another ohas been set up in Dobra Luka, on the open sea coast of Luštice.

No continuous measurement of the sea current is performed in the area of the Coastal Zone. For most of the natural beaches there are only approximate data on beach dimensions: there are no data on slants because the lateral profile of the beaches is not observed. Quantitative data on the characteristics, granularity, and mineral composition of deposits on natural beaches exist only for some parts of the Coastal Zone area. Available data on isobaths and beach slants under water are mostly outdated (data were last recorded many decades ago). The estimate on beach erosion intensity is based on the visual comparison of two different conditions and not on the geodesic observation of the beach configuration.

In the last few years, the damage frequency has been increasing, and the damage occurred to some beaches reaches the point of concern. Most of the damages occur during winter because the beach is under high waves in this period. High waves hitting some of the beaches in most exposed zones have removed beach deposit in the sea; so, after winter periods, these beaches have been reduced to a large extent.

On-site/studies and researches are necessary to investigate the cause of beach instability. The main culprits for this instability remain the uncontrolled development and constructions on the Coastal Zone. In other words, it is the human factor. Accelerated tourism development of the Montenegrin littoral in the last couple of decades entailed the construction of a large number of buildings and construction work in the broader hinterland of the coastal area. The greatest effect on beach stability has the construction work on arranging and regulating the estuaries of rivers in the beach zones. The consequences of some of the construction work were a reduction or even a total interruption of beach deposit inflow. This completely disturbed the natural balance between beach deposit inflow and wave erosion ability.

The interruption of deposit inflow has induced gradual beach erosion, and beach width and area have substantially reduced under wave impacts. One of the main culprits for a drastic beach deposit reduction of some beaches was also the totally uncontrolled exploitation of beach deposit for construction purposes.

Situated in south-central Europe, **Slovenia** with a coastline only 45 km long, has the shortest seashore of the EU member states.

Vulnerability to coastal flooding in Slovenia is mainly determined by the tides. During extreme high tide events, stretches of low coast are at risk of coastal flooding. One of the main weak points in this respect is the historic centre of Piran. This area is flooded when high tides coincide with low air pressure and southern wind storm surges, which happens for short periods several times a year.

In comparison with the rest of Slovenia, the relatively small coastal zone is densely populated. According to the Slovenian Geographical Institute, 14 km² of the coastal municipalities, which is currently only flooded in case of extreme sea levels, would be flooded under normal high tide events.

The main problem caused by erosion along the Slovenian coast is the filling up of the bays of Koper and Piran with river sediments that are brought from the hinterland to the sea. Due to the relatively stable land, the small impact of waves under normal hydrological conditions and well controlled protection strategies in Slovenia, erosion is however not seen as a major threat for the population and properties situated in the coastal zones.

In Slovenia, water management is a field which requires additional attention and large investments. However, freshwater shortage, especially in the touristic dry season, is not provoked by events related to climate change. The main issue in Slovenia is the deterioration of the water quality due to the pollution from settlements, which is often accompanied to the lack of appropriate sewage and sewage treatment systems.

The Eurosion study highlights for Slovenia 5 specific hot-spots most vulnerable to erosion: Piran Peninsula where the medieval town of Piran is located, the protected saltpans of Secovlje located close to Piran, Strunjan nature reserve which is a tourist seaside resort close to Koper, the port of Koper and the principal road of Koper in Izola.

With reference to the ecosystem protection, the Slovenian Environmental Protection Act states that major activities with a potential adverse impact on the marine environment and coastal habitats require an environmental impact assessment before implementation. One of the most famous wetlands in Slovenia is the Secovlje saltpan. In 1993, Slovenia joined efforts to preserve this eco-system by placing the saltpan on the RAMSAR list. So far, it is the only Slovenian wetland included in this list, vulnerable to erosion but mainly exposed to pollution.

Bosnia and Herzegovina has a relatively small coastal area of approximately 25 km long. It includes the Klek peninsula, Neum Klek Bay, Neum Klek aquaterrain and coastal aquaterrain of Mali Ston channel.

Neum bay is about 6 km long, 1.2 km wide and has an area of 8 square km. Neum town and tourist resort, is the only coastal town in Bosnia and Herzegovina.

The intensive urban development of B&H coastal area was in accordance with expansion of tourism, during Seventies years. A positive economic growth was present, but very often with negative environmental effects. In the summer months, the population of the coastal region multiplies several times, which cannot remain without impact on this particularly sensitive ecological system.

Main economic sectors are the fishing (2005 tonnes caught in 2008), the aquaculture (7600 tons produced in 2008)and the production of seashells (oyster and mussel) in the sea aquaterrain of Neum Bay.

The agriculture and fishery activities are not planned, so their impact on environment is unknown. Rearing of marine organisms produce organic matters, responsible for changes in natural balance, especially in chemical parameters of water quality.

As regards maritime transport, it should be noted that there are no ports in Bosnia and Herzegovina today. However, there are plans for the construction of a port in Neum. Moreover, according to the network of Marine Protected Areas in the Mediterranean (MedPAN), there aren't declared Marine Protected Areas and potential areas are currently under discussion.

The urbanization processes and the unregulated constructions related to tourism are the main responsible for the pollution of coastal areas and sea, especially compared to the existing system of waste water treatment plants.

Albania has a coast both on the Adriatic and the Ionian sea and its coastal line is 316 km.The coast, from the Region of Shkodra in the northern part to the Region of Vlora to the southern border, encompasses a series of natural, cultural and historical heritages such as the archaeological sites of Butriniti, part of the UNESCO's World Heritage List, Apolonia, The Blue Eye in Delvina (Region of Vlora), the valleys of the main rivers in Albania, Shkodra Lake (the largest in the Balkan Peninsula) and part of Albanian Alps. There are many protected areas, of which thirteen are national parks.

Marine protected areas of Albania

Around 60% of the Albanian population is living in the coastal areas. Environmental pollution, including pollution of the coastal water, has significantly diminished in recent years, because most of the industries are closed down; but there was an increase of urban pollution in the coastal area in the same years, caused by the tourism development, mainly in the Adriatic coast, and by the increasing number of inhabitants in the main Albanian cities (e.g.: Tirana and Durres).

During the last ten years, tourist constructions along the coastal zone have been not preceded or accompanied by necessary infrastructure as water supply and sewerage, collection, transport and sanitary disposal of solid wastes. This situation has increased the amount of solid waste. The waste waters are discharged untreated into the surface waters and into the sea.

In fact, no sewage treatment facilities or urban solid waste treatment plants exist in Albania, including sanitary landfill other than uncontrolled dumpsites. After land privatization, agriculture production has been decreased rapidly. On the one hand migration of people from the rural areas to towns and abroad and financial constrains to afford the expenses for agricultural production on the other hand, can be regarded as the main causes for the decrease of agriculture production. In this context the use of chemicals in agriculture is quite limited.

Most of the above mentioned phenomena remain in the level of observations. However, It is difficult to make quantitative and qualitative assessment on the respect of environmental pollution of the coast zone and marine environment.

Monitoring of environmental elements is not complete, neither in the space, nor in time and indicators (including chemical/bacteriological content of sewage urban waters). The main reason relies on the financial constrains to which Albanian institutions have been facing. The same happens with the studies on environmental impacts in coastal zones and the impact on marine environment produced by the economic activities.

2.1.2 Weastern Adriatic

2.1.2.1 General context and infrastructure

Despite the commitments made at the international level by Italy in the field of ICZM[2], the implementation of the Recommendation 2002/413/EC has not yet led to the development of a national strategy. Contrary to what expected, Italy has not communicated or developed policies or actions equivalent to a national ICZM strategy, despite the importance of this issue, the centrality of the Italian in the Mediterranean, the importance at European level, and the importance and the extent of the our coastline.

The decentralization of administrative responsibilities related to the planning and management of coastal areas, with increased responsibilities at local and regional level are causing the detriment of central level actions. Currently, at central level, the Italian Ministry of the Environment is elaborating a work program to be agreed with Regions and local authorities to achieve the preparation of a scheme for an " Integrated Management of Coastal zones National Strategy " and setting up a technical round-table[3]..

It should be noted that while some Italian regions have adopted specific coastal areas plans, others Regions are still integrating the environmental protection of coastal areas within the PTRC (Calabria) or within the Landscape Plan (Sardinia).

Some other Regions, given the importance of coastal erosion problems, are still drawing up specific Defense and nourishment plans within a coastal areas planning and management system (eg, Lazio and Abruzzo).

[2] Italy ratified the International Convention on the Sea Law (UNCLOS) of 1982, by Law no. 689/1994. The Barcelona Convention for the Protection of the Marine Environment and the Coastal Region of the Mediterranean and its Protocols, including the ICZM Protocol of 2008 entered into force in Italy in March 2011.

[3] MATTM-General Directorate for the Protection of Nature and Sea - Progress National Report on the integrated management of coastal areas 2006-2010 - February 2011.

Tuscany has drawn up a regional plan for the integrated coastal management aimed to the geological reorganization.

Innovative programs for the ICZM coastal planning and management were launched by the Emilia-Romagna, Lazio and Marche Regions. These regions, in fact, have tried to update the experiments undertaken at the end of the 90s in Europe and internationally within demonstration programs for the integrated management of coastal areas.

COASTAL REGIONAL PLANNING TOOLS				
Region	**Regional Plan**	**Coastal protection Plan**	**ICZM Plan**	**Protection interventions Financed by the ROP**
Liguria	Spatial planning for the coastal coordination	Approved in 2000	In preparation since 2009	YES
Toscana	ICZM Plan for the hydro geological reorganization	Published in 2004	2008 - Pilot	YES
Lazio	n.a	n.a	2004 - Pilot	YES
Campania	Erosion Plan	Approved 2010	n.a	YES
Basilicata	n.a	In preparation since 2009	n.a	YES
Calabria	Hydro geological reorganization Plan– Integrated management Plan	Approved in 2005	In preparation since 2006	YES
Puglia	Coastal Regional Plan	Approved in 2009	n.a	YES
Molise	n.a	n.a	n.a	YES
Abruzzo	plan for vulnerable risk areas	Approved in 2003	n.a	YES
Marche	ICZM Plan	Approved in 2005	Approved in 2004	YES
Emilia Romagna	ICZM Plan	Approved in 1983	Approved in 2005	YES
Veneto	n.a	n.a	n.a	YES
Friuli Venezia Giulia	n.a	n.a	n.a	YES
Sardegna	Landascape Regional Plan		Pilot	YES
Sicilia	Hydro geological reorganization Plan	In preparation since 2004	n.a	YES

Fonte: Elaboration of APRIambiente based on ISPRA environmental data 2011

Through a brief overview of the Italian coasts situation and of the Western Adriatic coasts, in particular, for about 800 km, we can note, first of all, the richness in biodiversity, threatened by a constant human pressure, with a growing percentage of constructions along the costs. Along the coastline, also insist more functions, often in contrast each other: urban settlements, ports, areas for beach tourism, industrial parks, protected areas, fisheries.

With regard to the **accessibility** of the Italian coastal regions, it is guaranteed by a highway infrastructure and by the national system of Adriatic roads, by the railway that serves, also its special branches for goods transportation, the ports of Trieste, Venezia, Mestre in the north, Ravenna, Ancona and Pescara-Ortona in the center. To these it must be added in the south of the peninsula, the quadrilateral formed by the ports of Bari, Brindisi, Lecce and Taranto, which plays a strategic role in the connection with the Ionian coast and, hence, the "meridian corridor" across the Mediterranean from Gibraltar to Turkey, to the Black Sea.

With regard to navigation, international lines play a very important role that can contribute to the economic development of the Italian regions in relation to their tourist value. The development of sea routes can be, also, a response not only for the cross-border trade but also for the improvement of national connections on the

same side, contributing to mitigate the congested coastal road sections and the main coastal highways close to urban agglomerations.

From the point of view of coastal infrastructure and sea traffic, the West Adriatic include some of the main Italian ports, both in terms of goods traffic and passengers transit (Trieste, Venice, Ravenna, Ancona, Bari, Brindisi and Taranto). In 2010, international passenger traffic has confirmed, the cruise growth while the ferry traffic is in decline in all markets.

The cruise segment recorded in 2010 an increase of 12% over the previous year, highlighting the attractiveness of the Adriatic and the Mediterranean; shipping companies increased from years the offer of these destinations: the accommodation capacity deployed in the Mediterranean, fell from 12% in 2000 to 18% in 2010. Venice, with 1,617,000 movements and an increase of 14% remains the leading port in the basin, all the seaports recorded double-digit grow. Only Bari has registered a -11%.

The year 2010 was also characterized by a recovery of the global container traffic. In the Adriatic-Ionian basin, the overall growth was much more modest and highly differentiated according to countries. The average growth of the Adriatic-Ionian basin was 0.4%. However, considering only the Adriatic, and excluding Taranto -22% (due to the crisis of the steel industry and ILVA), the ports marked a +11%. In this context, the Italian ports, however, grew only of 3%, in line with the weak recovery of the country compared to the rapid development of container traffic in the eastern Adriatic.

Over the last decade, the Northern Adriatic ports have suffered increasing competition of north-east ports (Koper / Koper and Rijeka / Fiume), which benefited of development plans and important investments. To support the strong competition of the North Sea ports and to continue to play a central role in the Central Europe markets, the Northern Adriatic ports must strength their cooperation, through a regional coordination for a common promotion of traffic flows for the entire area and a sole gateway for the maritime trade in the North Adriatic, integrating the Italian ports with those of Koper / Capodistria and in the next future Rijeka / Fiume.

Ports exert one of the strongest pressure on the coast, with an environmental impact on water, soil and biodiversity. We still remember the Adriatic basin is one of the most vulnerable for its geomorphological characteristics making the whole ecosystem particularly sensitive: the lack of bathymetry and the slow exchange of water, the lower inflow of fresh water compared to other basins in the Mediterranean, and the strong urbanization of the coast. The vulnerability of the Adriatic coast should be read considering transport and maritime traffic trends, that for the Adriatic and Ionian seas are in line with the Mediterranean ones, and that foreseen the steady growth of:

- cargo traffic and Ro / Ro (short sea shipping)
- passenger traffic
- traffic of petroleum products, LPG and LN.

The increase in traffic along the Adriatic coast is also conceivable in relation to the implementation of the Baltic-Adriatic corridor and especially in its extension to the south. The European Commission has provided, in fact, within the strategic priorities of the European Union in October 2011, the construction of a corridor linking the Baltic with the Adriatic area.

An additional stress factor for the Adriatic basin consists of the exploration and production of off-shore oil in many regions (including Puglia, Abruzzo, Basilicata, etc..) that is potentially harmful for the coastal areas and the protection of biodiversity.

In the absence of a common basin sustainable development policy, for a the development of intermodal transport and a sustainable planning, the increase of the maritime traffic, although factor of economic grow, might look like an added disturb factor for the precarious environmental balance, with an increased pollution risk and a further and not bearable human pressure on the coasts.

2.1.2.2 The socio-economic context

From the analysis of the demographic and evolution dynamics in the medium-long term of the populations living in the Italian Adriatic Regions, we observe more weaknesses than strengths:

- negative dynamics (such as natural growth);
- high aging indicators, that look a spare capacity with internal resources of the indigenous labour force.

With regard to the population dynamics, stable over time, is due, in the Italian case, more to migration flows than fertility rate; A decisive role is played by both inward and outward migration which has compensated for the negative natural growth rate recorded in many of the eligible provinces

The **demographic structure** shows a marked tendency to higher values relative to the aging indicators, which in the Italian provinces reaches the value of 146, the maximum value of the whole Adriatic region.

With regard to the economic aspects, the northern regions and, in particular, the Veneto and Emilia Romagna economies are the "strongest" in the area.

Veneto has a high employment rate and thus implicitly limits to any growth due to integration programs that may generate tensions in the labour market. A strong policy of rationalization has transformed Veneto agriculture from a consumption agriculture in a market agriculture, making it among the most productive in the country. In the plains, especially in the low part, which is well irrigated and cultivated, agricultural production is among the most abundant in Italy. The deep-sea fishing it's practiced, as well as the vallicoltura, which takes place in the valleys, or in fenced lagoon. Chioggia, an active fishing port, is one of the first fish markets in Italy. Mestre and Porto Marghera form one of the largest concentrations of industry in the country. In Porto Marghera arrive, by sea, raw materials for oil refineries and complex chemical and metallurgical plants ..

Many companies, especially medium and small ones, are spread throughout the region, which has lived, over the past decade, a remarkable industrial development.

The Veneto ranks second among the Italian regions for the **electricity production** supplied by power plants created along the waterways. Along the Piave and Brenta there are numerous ponds. In addition, in the Veneto region grew an active tertiary sector.

The Emilia Romagna is an important industrially region, characterized by a dynamic economy. The industry of the Emilia-Romagna has two characteristics: lack of large industries and main sectors are agriculture and farming. There are many thousands of small and medium-sized companies operating in different sectors, but primarily in the food industry. The extraction of methane is common in many places of the region, but the petrochemical plants work also on imported oil. It is remarkable the production of fertilizers, synthetic rubber and plastics.

As well as clothing, ceramics and pharmaceuticals are also important sectors for the regional economy.

The Emilia - Romagna farming sector is among the most advanced in Italy and is characterized by a great variety of products and the particular abundance of some of them. The Emilia-Romagna provides more than one-sixth of the national production of cattle slaughtered and about one-sixth of the milk. In addition, it ranks second in breeding pigs. Fishing activity is significant: over one-seventh of the national catch comes from the coasts of Emilia - Romagna. In the budget of the Region, tourism is the major item. Thousands of hotels, inns, restaurants and meetings places of various kinds are continued along 70 km of beach between Ravenna and Cattolica. This is a unique tourist complex which includes all the coastal areas, well organized and always crowded during the high season.

In **Friuli Venezia Giulia**, the industrial sector is the most prevalent. The plants are more concentrated in Trieste, Monfalcone, Gorizia and Pordenone while the small and medium-sized in the province of Udine. The metal and engineering industry is represented by factories for the production of pig iron and steel, and marine applications (Trieste), aircraft (Monfalcone), bicycles and household appliances (Pordenone). The textile industry is characterised by numerous establishments especially for the processing of cotton. The chemical industry is represented by large refineries (Trieste), as factories for the production of pulp and soda. Shipyards are located in Trieste, Monfalcone and Muggia. In Trieste, in the recent past, has been launched the biggest transatlantic Italian merchant fleet, but now the shipbuilding industry is in crisis. Only in the shipyards of Monfalcone still get prepared ships of large tonnage. In the port of Trieste are downloading large amounts of oil that is sent via pipeline in Bavaria. It is remarkable the production of electricity supplied by power plants fuelled by numerous artificial lakes created in the mountain area.

In **Abruzzo**, agriculture is still an important economic sector, despite a climate and a soil not exactly fair. In contrast to the other Adriatic regions and despite the development of the coast, fishing is not the main economic resource. Tourism, however, is expanding significantly, especially on the coast. The construction of new hotels, guesthouses, campsites, holiday villages and farmhouses has so developed to threaten the same natural beauty that attract the tourists.

The industrial system of the **Marche Region**, which was developed especially in recent years, is based on a dense network of small and medium-sized enterprises, spread throughout the region, producing footwear, knitwear and textiles, clothing, furniture, machinery. The food industry consists of sugar mills, oil mills, factories meat sausages enterprises. Few large plants, all located on the coast: the shipyards of Ancona and of San Benedetto del Tronto, the refiners of Falconara Marittima, the chemical factories of Ancona and Civitanova.

In the south, stands the **Puglia Region**, with a production capacity not fully optimized and, contradictorily, the with an average rate of inflation higher than the average of the Adriatic regions. Puglia is one of the most important Italian regions in the field of agricultural products. Puglia provides a substantial portion of the fish caught in Italy and most of the shellfish.

Overall, tourism is a vital resource for the Adriatic area. The flow of visitors in the Italian Adriatic regions amounts to about 20 million of arrivals and more than 100 million visitors. The regions most affected are the

Veneto Region, which includes about 36% of tourist flows of the Italian Adriatic regions, the Emilia Romagna Region with 27% and the Marche and Puglia Regions with about 11% of arrivals.

2.1.2.3 The environmental context

Landscape and environmental differences between the two coasts of the Adriatic basin are important for the geo-morphological characteristics, the high rate of urban development and the demographic differences.

The Italian side, in fact, reflects the high level of urbanization that has developed along a homogeneous coastline, with peak maximum concentration around production areas and areas of intense tourist exploitation. Excessive pressure from productive uses, the strong anthropic pressure of the Italian Adriatic coasts, the maritime traffic increasing, the particular geomorphological conditions and the slow exchange of waters led to an extensive congestion and a steady reduction of natural areas, exposing this delicate ecosystem to a high risk of environmental crisis due to **eutrophication, coastal erosion** and pollution caused by maritime traffic.

However, sites of environmental excellence remains intact, well represented by the national and regional systems of protected areas from the north to the south of the peninsula.

The west coast is generally quite uniform, interrupted only by the Po delta and the headlands of Conero and Gargano (which extends into the sea with the Tremiti Islands). In the northern part, the coastal profile is interrupted by the lagoons of Venice, Marano and Grado and by the Gulf of Trieste. In Friuli at the foot of the headland of Miramare, offshoot coastal trapped between the marina and the coast of Barcola and Grignano, is the Reserve of Miramare (30 ha), with geomorphological, physical and chemical properties that create a precious biodiversity area, representative of the biotic communities of the Northern Adriatic.

The central part of the Adriatic basin consist of the Italian regions of Marche, Abruzzo and Molise. The territory on the western coast consists of three principal natural environments: the environmentally valuable Apennines, the prevalently agricultural hill areas and the coastal strip

The northern part is characterized by a rich settlement network of minor centres, relatively homogeneous and balanced over the whole territory and by linear urbanization along the coast which is close to capacity along with the port cities.

The internal territories include significant natural systems with a high degree of biodiversity which has resulted in the creation of three major National Parks in the Abruzzo Region, the Abruzzo, Lazio and Molise National Park, the Maiella Park and Gran Sasso-Laga National Park and several other parks and nature reserves.

Along this coastal, we fond the **marine protected area (MPA) "Torre del Cerrano"**, the first marine protected area of the Abruzzo Region, founded in 2010, it extends 3 nautical miles into the sea from the coast and spreads out along 7 km of coastline. Between the mouth of the river Calvano to Pineto and to Piazza dei Pini in Silvinelle Marche there are many other protected areas some of which are of national importance, such as the Parco dei Monti Sibillini (Ascoli Piceno, Macerata) or regional relevance such as the Park of Conero (Ancona).

The Molise region coasts is mainly mountainous with narrow valleys characterized by barren soil conditions and a reduced coastline. The population is distributed in small scattered communities with a low housing density. The road network, even though it includes interregional connections for the principal centres, doesn't guarantee adequate accessibility with consequent additional costs for the organization of services to the population, and in some areas, even to the productive systems. The natural and environmental heritage of this area is significant and includes the part of Molise in the Abruzzo, Lazio and Molise National Park and the Tremiti Islands Marine Reserve. In the province of Campobasso there are a number of villages founded by Croatians and Albanians which still preserve their traditions, culture and languages.

The southern western part of the Adriatic basin consists of Puglia Region. The sea delimited by the southernmost part of Puglia and connects the Adriatic and Ionic Sea. This Italian territory presents a few homogeneous areas: the north-western area presents structural elements of the landscape and their relation to the historical settlement background. The southern area with its considerable changes in the landscape and habitation patterns presents contradictions and competitions in the transformation processes and in the spatial planning (tourism, industrial, settlements etc).

In the spring of 2008, at the *istituenda* Marine Protected Area "Torre del Cerrano" in Pineto (Te), during the seminars organized by AIDAP (Italian Association of Directors & Officers of Protected Areas), participants decided a constantly coordination, for geographical areas. Since that, those working within the Adriatic protected marine and coastal areas are working to build a network under the coordination of the Miramare Marine Protected Area and the Consortium of the Marine protected area Torre del Cerrano. So, the Network of Protected marine and coastal areas of the Adriatic Sea - AdriaPAN, born by the spontaneous organization of its operators and of research institutes, shared a document called “Charter guidelines and objectives of Cerrano”. The final text is a set of shared values, objectives and strategies to be pursued, in order to implement a direct collaboration between all protected areas, of any type and form as long as marine and coastal areas of the Adriatic Sea.

The Charter of Cerrano has been ratified by one protected area for each Italian region overlooking the Adriatic Sea. Since then, the membership is open to all organizations involved in protection and conservation of biodiversity, according to the indications given in the international context.

There are also some large gaps in settlement: the Foggia Tavoliere in the north (an area of cereal farming and high productivity irrigation farming), the Murge plateau in the centre (a sparsely populated internal area with a high identity) and the Brindisi plain in the south (which connects the production areas and the wetland and coastal ecosystems).

The Puglia regional landscape shows the considerable pressure on, and consequent reduction of, the natural ecosystems and rural areas along the coast.. In this context, there are two national parks; Gargano Park (Foggia) and Alta Murgia Park (Bari), four regional parks and several nature reserves, mostly the particular habitats of the coastal wetlands. In Puglia there are also three marine protected areas: Porto Cesareo (16.654 ha); Torre Guaceto (2.227 ha) Tremiti islands MPA.

2.2 COMPARATIVE ANALYSIS AND THEMES PRIORITIZATION

2.2.1 PEST analysis

PEST analysis (Political, Economic, Social and Technological analysis) describes a framework of macro-environmental factors used in the environmental scanning component of strategic management

The PEST model should be considered as a part of the external analysis for conducting a strategic analysis and that provides an overview of the different macro factors influencing the context, to delineate the future scenario. In this prospective it has been defined the matrix of factors for the Adriatic region compared to the integrated management of the coastal zone, which shows:

- **Political factors** are basically to what degree the government intervenes in the protection of coastal areas. Specifically, political factors include areas such as local legislation, environmental law, but also the attention to European Directives and the ability to include them on the protection of the coastal and marine environment, the cross-border cooperation, the political stability. Political factors may also include the evolution of Community and international legislation on ICZM, the services which the government wants to provide to support the ICZM cooperation, as well as the involvement of state agencies and the participation of citizens and private organizations;
- **Economic factors** include economic growth, infrastructures and businesses with major impact on coastal areas, as well as future scenarios, also in view of the transport policy undertaken at national and EU level. These factors have a great impact on coastal areas which often suffer, in the absence of a national planning and clear laws, the way in which businesses and privates operate;
- **Social factors** include the cultural aspects and include health consciousness, population growth rate, age distribution, career attitudes, urbanisation of coastal areas and emphasis on safety. Trends in social factors affect the demand for a company's products and how that company operates towards the spatial planning and management. We also consider Environmental factors that include coastal environmental aspects such as natural heritage preservation and climate changes, which may especially affect sectors such as tourism and farming;
- **Technological factors** of environmental and ecological aspects include for example R&D activity, pilot projects, rate of technological changes. They can determine They can determine the ability of states and individuals to join innovative cross-border projects, the barriers to entry for potential foreign investors, the level of production and outsourcing decisions. In addition, changes in technology may affect the cost, quality and lead to innovation and thus to environmental sustainability and social planning of coastal and marine areas;

Hereinafter the matrix of macro factors affecting the Adriatic coasts, with a focus on the special features detected for both eastern and western coasts.

Although, the Adriatic Region should be considered as a whole, some peculiarities of the regions of the two coasts must be highlighted separately, so that the cross-border cooperation strategies should take full account of them in order to reduce disparities and harmonize the regional context.

PEST Analysis of the Adriatic Region on ICZM

POLITICAL		ECONOMICAL	
Focus on Areas			***Focus on Areas***
Lack of national ICZM strategies in all the Countries in the Region, with the exception of Montenegro. Dynamism of the Italian local authorities (regions) into the issues related to the coastal protection and cooperation. Strong attention devoted to the issues related to the protection of the natural and environmental resources, especially in coastal zones, expected in the new EU cooperation programming period. Strong awareness of the legislation on the protection of marine protected areas.	Strong attention at national level to the themes and issues related to ICZM. Coastal protection as a priority issue on the Adriatic cross-border cooperation. Political stability; cooperation on sustainable development is perceived as value-added for the candidate Countries. Financial resources available in the EU Programs for cooperation projects and investments in the protection and development of the maritime and coastal environment.	Economic recovery of the commercial maritime sector. The Countries in the region seem to be well integrated into the international system of commercial relations Increase in maritime traffic along the Adriatic coast, even to the African countries. Direct aid to investments from EU to promote intermodal transport. Competition from ports in the North Sea. Strong development of international tourism resort. Initiatives for the infrastructure of the area.	Attractive Fiscal Policies in the candidate Countries for foreign investments. BH, Montenegro and Serbia are not members of the WTO. Ports on the Adriatic side are growing more than Italian ports. The economic growth is higher for Countries in the eastern shore. Weak cooperation between the private sector and R&D institutions (Italian regions).
SOCIAL		**TECHNOLOGICAL**	
Focus on Areas			***Focus on Areas***
The substantial increase in the aging population in the Italian regions. Human pressure on the coast in the candidate countries (ie.g.: Croatia) linked to urbanization (caused by internal migration) and to seaside tourism. Lack of valorisation of the cultural heritage and of the inland areas (that are two economic activities able to create jobs) in the candidate Countries	High unemployment rate. Intense migration flows from the candidate countries to Italy. Vulnerability of the Adriatic coast, linked to coastal erosion. Adaptation to EU environmental legislation in the candidate countries.	Cooperation initiatives between the two sides of the Adriatic Sea in R&D. Studies and research financed by EU Programmes. Active involvement of Universities and Research Centres on ICZM.	Good positioning of Italy in relation to high education and the availability of qualified human resources. Good positioning of some Italian Regions (Emilia-Romagna, Friuli-Venezia Giulia e Veneto) in R&D. Low inclination to R D in some candidate countries in comparison to the European average.

The synthesis shows that, compared to an Adriatic region highly vulnerable, current and future trends lead to pressures intensification of the coast: sea transport, coastal urbanization, tourism, intensive agriculture.

These activities are those that contribute significantly to the economic growth and employment in the area (who suffers employment problems). Their impact must be included in legislative frameworks, allowing the sustainable growth of the Adriatic region and involving local authorities and States on the adoption of ICZM strategies.

The adoption of national strategies, coordinated for the whole Adriatic region, can certainly facilitate the cross-border cooperation on the integrated management of coastal areas, implemented, today, thanks to the important contribution of Regions and local authorities of both Adriatic sides.

2.2.2 SWOT analysis

The analysis of strengths, weaknesses, opportunities and threats (SWOT) factors, implemented by the PEST analysis, can provide a complete picture of the of the Adriatic region context to outline future ICZM strategies of cooperation.

Strengths	Weaknesses
International commitments on ICZM. Initiatives of regional and cross-border cooperation on ICZM. Existing tools for Spatial Planning. Expansion of the system of protected areas. Plenty of water resources and surface waters. Cultural heritage - tangible and intangible - with strong features. Networking and exchange of good practices and cooperation in the region. Trade in the Region. Constant increase in life expectancy. High incidence of young people in the demographic structure of the population (candidate countries). Potential complementary aspects in demographic and job tendencies on each bank . Growth potential in intra-regional trade based on new agreements. Increased trade in between Italy and Eastern Adriatic Countries. Strong development of tourism, mainly in Croatia and Montenegro.	Economic recovery slower in the Italian Regions respect to the countries of the eastern side. Environmental problems related to eutrophication and coastal erosion. Significant environmental impacts caused by mechanical fishing and aquaculture. Strong pressure on water quality due to agriculture, especially where it is added to the output of industries and port activities (especially in the Po Valley and Rijeka). Insufficient intermodal connections. Critical environmental situation in the coastal areas related to population growth and the resulting increase in traffic and waste (mainly in the Candidate Countries). Low employment rate. Presence of delicate environments suffering from negative impacts caused by human settlements. One-dimensional urbanization along the coast: loss of biodiversity, ecosystem fragmentation, congestion (Italy). Presence along the coast of industries and power plants that produce emissions. Poor contribution of renewable energy sources. Insufficient water purification systems and sewage treatment plants.
Opportunities	**Threats**
Presence of abundant water resources. Availability of public funding receipts for regional cooperation. Diffuse natural resources (forests, lagoons, ecosystems, etc.), often poorly protected. Presence of landscapes and a rich cultural heritage, which need environment rehabilitation. Development of intermodal transport through the ports to reduce the traffic by land.	Waste pollution from intensive agriculture. Increasing amount of waste water discharged into surface and ground water, caused by the effects of human settlements in the area. Increased road traffic of commercial cargo along the coast. Increasing effects on the climate caused by greenhouse gas emissions. Increasing gap between urban management and

Increased protection and extension of protected land and sea areas. Co-operation for the conservation, management and control of local resources and risk prevention. Tendency to extend protected areas. Opening new markets. Development of new trade routes (Corridor VIII). Cooperation and networking in regional transport.	development pressures in the areas of mass tourism. Increase rapid urbanization with the compromise of natural resources and risks to human health and safety Impact of tourism on sensitive natural resources. High pressure on the cultural and natural heritage, mainly caused by uncontrolled constructions. Existence of concessions for oil drilling off-shore (IT)

The summary of the territorial and socio-economic characteristics of the areas on both sides of the Adriatic Sea indicates some priority aspects whose complexity reveals points of strength and weakness which, in many cases, are similar on both eastern and western Adriatic countries. coasts

Italian regions, including those in the South, are privileged compared to the countries of the eastern side. Only Croatia reaches the context indicators at levels close to the Puglia Region, despite having a GDP pro-capita far below.

Considering the aging trend of the Italian regions, the phenomenon is still rather contained in other countries. More similar to the Southern Italy regions is the unemployment rate (between 8 and 10%) of the eastern side countries. The performance of the labor market continues to be weakly correlated to the economic cycle, and remains one of the most stringent constraints for the development of the area.

From the point of view of spatial development, the use of natural resources and the consequent general state of the environment, both coasts suffer from eutrophication and coastal erosion.

Different, however, is settlement patterns between western regions. characterized by a high average density (between 127 inhabitants/km2 in Abruzzo and 211 inhabitants/km2 in Puglia),with the more scarce population density in of the Eastern regions but with a worrying high levels of urbanization along the coasts.

On the western side of the Adriatic these have resulted in very high levels of urbanization. Along the coastal territory there is a clear loss in ecological continuity and pressure on the environment, especially where there is a concentration of tourism or productive activities (particular pressure and impact on the common watery body of the Adriatic eco system is mainly due to the Po river).

An additional risk factor for the Italian coast are the oil drilling permits along the Adriatic coast. The exploration permits of May 31, 2011, to search for oil on the seabed regard the North Adriatic Sea (7), the sea of the Marche and Abruzzo (3) and Puglia (2). Sea areas covered by the instances of exploration are between 8 in Marche, Abruzzo and Molise, 7 on the Adriatic coast of Puglia, 2 in the Gulf of Taranto, and one in the northern Adriatic.[4]

This area is very large, only in small part reduced by the Decree No. 128/2010 set out by the Italian Ministry of the Environment to protect the Italian sea from the risk of oil leaks. The Decree prohibit explorations and production of hydrocarbons in the marine and coastal protected areas within 12 miles from the perimeter of these areas, only for liquid hydrocarbons from the baseline, along the Italian coast.

The eastern regions retain a more natural environmental state but are aiming to close the gap in development thus exerting new pressures on the territory in the absence of adequate regulations and planning. Moreover, internal migration is causing a strong increase in the urban population along the coasts. This could put natural resources at risk and threaten the balance of the environment which, in some cases, is already affected by air, water and soil pollution..

[4] Legambiente – "Un mare di trivelle" - Giorgio Zampetti, Stefano Ciafani, Angelo Di Matteo - 30 July 2011.

In both instances however, one unequivocal point of strength is the vast presence of natural and cultural resources widely distributed along the coasts. As well as, the many initiatives of cooperation between the two sides of the Adriatic are a strength point for the entire region, from which develop more integrated strategies and tools starting from the integrated management of coastal areas.

With regard to infrastructure, the Adriatic region is at the center of numerous trade and shipping routes and has, in fact, several major ports on both sides.

The Italian regions are characterized by a complex and highly hierarchical infrastructure network which is able to support high levels of transport demand. The density of the network is however a point of weakness because of its effect on environmental continuity and the levels of congestion often witnessed.

In the territories of the eastern side, the road and rail infrastructure are a point of weakness, which, in certain cases, seriously hampers the economic development of local communities.

In both areas, it is therefore necessary to plan and invest in the improvement of sustainable intermodal networks, in order to strengthen and optimize port activities and trade, as well as a priority is undoubtedly the creation of new jobs for the development both economically and socially of the Region.

However, for the countries of the eastern side, the flow of foreign capital, especially in the form of tied aids cannot alone solve the socio-economic development problems.

2.2.3 Critical and priority issues

The **socio-economic and demographic characteristics** of people living in the two sides of the Adriatic Sea are still very different. However, the intense exchange between the two sides of the Adriatic is a good premise to find common solutions.

This interchange that affects people, goods, capital, knowledge and technology, has found a safe and sound basis in a good availability of infrastructure and transport organization. The exchange og goods between Italy and the eastern countries occurs for about: 62% by sea, 32% by road and 6% by rail. In the southern part of the area, however, the exchange takes place almost exclusively by sea (about 93%) and the remainder by road.

Today, the northern and central areas of the Adriatic are grappling with an environmental situation that needs particular attention and actions that allows the protection this high quality territory and its marine resource.

In particular, the exploitation of the territorial resources of these Regions has been in the past intense and too often lacking the necessary rationality, as is shown by:

- the localization along the coasts of highly polluting activities such as the petrochemical industries and the oil refineries;
- the insufficient planning of intermodal infrastructures to ease road traffic related to maritime trade;
- thermal power stations in some of the most valued areas for naturalistic and artistic presence;
- the development of agriculture that strongly uses chemical substances both for fertilisation and for crop protection;
- an excessive concentration of industrial livestock production plants, along the main waterways (starting from the Po that discharges into the Adriatic 40% of the waste water of the entire Italian territory):
- an exponential increase of the production sites and civilian settlements with serious effects of territory sealing and excessive concentration of the population in the main built up areas;
- an abnormal dilatation of the consumption of natural resources without an adequate, rational and effective capacity to contain the resulting negative effects;

- a spatial-temporal concentration of the holiday and mass tourism industry that poses the problem of a mitigation of the anthropic load in favour of the development of a higher quality level tourism, also as the condition to have an actual deseasonalisation and better economic results;
- an exponential increase of the fishing effort that has underlined the surfacing of serious problems for the sector.

This critical issues compounded by the absence of a common legislative and regulatory framework for the Adriatic region, suggest to overcome the competition in the use the resources and lead to a cooperation among all parties involved.

The analysis led to the identification of the following six **priority themes for the Adriatic Region, on which we will focus the research and analysis of the best practices**:

- Strategic planning for sustainable infrastructure along the coast.
- Strategic planning for sustainable ports and evaluation of the activities.
- Strategic planning for sustainable tourism that protects coastal environments, especially protected areas.
- Regional cross-border cooperation initiatives for the regulation of activities along the coasts and common legislation.
- Protection and mitigation of the effects of climate change on the Adriatic.
- Management of relationship for the environmental protection and biodiversity and natural needs of human presence.

Our analysis of the best practices concerns the best examples acquired, not only in the Adriatic coasts, on the identified priority themes, with particular attention to their repeatability in the Adriatic region.

3 SECTION III: BEST PRACTICES

3.1 SELECTION CRITERIA

The case studies have been defined based on the following selection criteria:

- Geographical criteria: best practices of the Adriatic Region in order to provide an overview on ongoing initiatives in the region;
- Eligibility criteria :General (start date of the project, objectives and targets, repeatability and sustainability of the practice);
- Criteria related to the priority areas for the Adriatic, gained also in other contexts but replicable in the Region in order to deal effectively emergencies and need for an integrated coastal management.
- Additional qualification criteria.

The sources used to identify the most important best practices, that will be included in the Book, have been the consultation with the SHAPE partners and the research - according to the criteria of interest for the Adriatic Region as previously identified - the OURCOAST database of the European Commission with about a thousand of successful experiences gained in the field of ICZM.

This first best practices' selection, which will be brought to the attention of the Shape partners and of the WIKI Platform users, takes into account the complexity in the definition and classification of coastal areas, which are characterized by heterogeneity of conditions and problems regarding the Adriatic coasts (different coastal areas with common problems) as well as the practical application of the ICZM, characterized by a great variety of approaches.

All selected Best Practices meet the general eligibility criteria and foreseen with the implementation of at least one goal for each general objectives of environmental, social and economic sustainability. Of course, the selection took into account the priority themes identified by the SWOT and PEST analysis and by the SHAPE partners through a questionnaire, and by additional criteria such as:

- Partnership: as participation and cooperation between disciplines, sectors and agencies;
- Integration: as horizontal integration between policy areas and vertical integration between hierarchical levels;
- Consensus construction: or consultation among local community member;
- Institutional guarantee: Set up of control bodies: creating institutional structures that demonstrate sustainability over time and that are resistant to changes in the local political scenario.

The following table intersects the best practices identified with the selection criteria mentioned in Chapter 1.

	Eligibility criteria						**Main theme**	**Additional qualification criteria**
Best Practice	Starter project	Replicable project	Qualità objectives/target	Social sustainability	Environmental sutainability	Finacial sustainability		
ICZM management	☺	☺	☺	Awareness of economic	Harmonizati on of	Projects and investment	Coastal protection,	Implementation of the strategic

strategy for the Abruzzo Region				operators and local administrators	protection and sustainable development policies	planning in coherence with the strategy	land use and landscape Sustainable tourism	planning to the ICZM
ETICA project	☺	☺	☺	Awareness of economic operators and local administrators Dialogue Round tables with business associations	Harmonization of protection and sustainable development policies	Planning of financial public investments for the improvement of the coastal environment	Coastal protection, land use and landscape Sustainable tourism	Support during the ISO 14.000 Environmental certification and the EMAS registration
CAMP Slovenia	☺	☺	☺	Public awareness on sustainable development Improvement of the social participation Increased ability of the local community to influence local decision-making process	Protection of ecosystems Spatial protection	Development of a sustainable market of goods and services	Sustainable tourism	Horizontal integration between political sectors and vertical integration between hierarchical levels Institutional guarantee
Spatial development of the South Primoska Coast - Slovenia	☺	☺	☺	Conservation and upgrading of cultural heritage and public spaces	Territory protection Pressure reduction	Minimizing the environmental impacts from. production activities.	Coastal protection, land use and landscape	Partnership: participation and cooperation among disciplines, sectors and agencies
CZM pilot actions in the coastal areas of Ferrara, Ravenna, Forlì-Cesena and Rimini - Italy	☺	☺	☺	Improvement of social participation Increased ability of the local community to influence local decision-making process	Pressure reduction	Minimizing the environmental impacts from. production activities. Investments of innovative eco-sustainable technologies	Coastal protection, land use and landscape	Partnership: participation and cooperation among disciplines, sectors and agencies Horizontal integration between political sectors and vertical integration between hierarchical levels
Protection of Venice littoral islands - Italy	☺	☺	☺	Minimizing health risks	Ecosystems protection or restoration	Investments of innovative eco-sustainable	Climate changes	Consensus construction and dialogue

				Improvement of basic social services such as health education, living or working conditions Public awareness on sustainable development	Landscape protection	technologies Improvement of environmental expenditures efficiency and effectiveness	Coastal protection, land use and landscape	among local community members
An Handbook for the integrated maritime spatial planning - Romania and Baltic Sea	☺	☺	☺	Conservation and upgrading of cultural heritage and public spaces	Pressures reduction	Minimizing the environmental impacts from. production activities	Mobility and planning	Consensus construction and dialogue among local community members
Converting an oil terminal into municipal housing: land use planning in Stockholm - Sweden	☺	☺	☺	Improvement of basic social services such as health education, living or working conditions	Pressures reduction	Investments of innovative eco-sustainable technologies Improvement of environmental expenditures efficiency and effectiveness	Building and urban planning Energy policies Climate changes	Consensus construction and dialogue among local community members
CAMP Lebanon	☺	☺	☺	Conservation and upgrading of cultural heritage and public spaces	Ecosystems protection and upgrading	Minimizing the environmental impacts from. production activities	Coastal protection, land use and landscape	Integration Consensus construction
PAP/RAC Cyprus	☺	☺	☺	Conservation and upgrading of cultural heritage and public spaces	Landscape protection	Development of a sustainable market of goods and services	Coastal protection Spatial planning	Institutional guarantee
Monitoring and control of the water supply drainage in the lagoon of Venice – Veneto Region-Italy	☺	☺	☺	Minimizing health risks	Ecosystems protection and upgrading Landscape protection	Investments of innovative eco-sustainable technologies Improvement of environmental expenditures efficiency and effectiveness	Climate changes	Consensus construction and dialogue among local community members
Monitoring and control of the water supply drainage in the lagoon of Venice – Veneto Region-Italy	☺	☺	☺	Public awareness on sustainable development	Ecosystems protection and upgrading	Improvement of environmental expenditures efficiency and effectiveness	Monitoring and control networks of river basins related to transitional waters and coastal	Institutional guarantee

							marine waters	
Protection of Tegnùe and establishment of Biological Protected Zone – Veneto Region - Italy	☺	☺	☺	Public awareness on sustainable development	Consumption reduction of natural resources and promotion of the use of renewable resources Ecosystems protection and upgrading	Development of a sustainable market of goods and services	Fishing and aquaculture	Consensus construction and dialogue among local community members
SEAPASS Project- Electronic Systems Applied for the Protection of the Environment and for the Sustainable Development - Guidelines for the management of eco-friendly telematics mooring fields– Puglia Region - Italy	☺	☺	☺	Public awareness on sustainable development	Ecosystems protection and upgrading Landscape protection	Development of a sustainable market of goods and services	Protection of habitats (Coastal Parks), and the establishment of biodiversity "Zones of biological protection"	Integration
Life Sedi.port.sil Recovery of dredged SEDIments of the PORT of Ravenna and SILicon extraction – Ravenna - Italy	☺	☺	☺	Public awareness on sustainable development	Consumption reduction of natural resources and promotion of the use of renewable resources	Investments of innovative eco-sustainable technologies	Energy policies	Integration
CAMP "Levante de Al meria" – Spain	☺	☺	☺	Coordination between administrations guaranteeing public participation in the decision-making process	Harmonization and sustainable development policies	Economic activities which provide a living for the local population compatible with the consolation of ecosystems and resources	Institutional coordination	Consensus construction and dialogue among policy makers

3.2 BEST PRACTICES

In the following paragraphs we present a first selection of best practices based on desk and context analysis and the consultation with the SHAPE partners. The Best Practices are organized as project fiches identifying the most relevant information and easily to consult and of immediate reading. The best practices fiches will be posted on the WIKI platform in order to receive a preliminary assessment form the WIKI platform users and will be then integrated with other practices as reported on the platform.

3.3 CLIMATE CHANGES

3.3.1 Protection of Venice littoral islands – Veneto Region - Italy

Overview

Venice is located in a lagoon protected from the Adriatic Sea by a coastal barrier that stretches for a total of about 60 km. The coastline is made up of strips of land: the coastal strips of Jesolo and Cavallino, the two inlands of Lido and Pellestrina and the sand beaches of Sottomarina and Isola Verde. The lagoon is in contact with the sea through the three inlets of Lido, Malamocco and Chioggia.

For centuries, the entire coastline was subject to erosion, putting the historical urban centres and lagoon settlements at risk of erosion and flooding. The causes of the erosion of the coastline are many:

- lack of river sediment transport,
- natural phenomena such as eustasy as well as subsidence, wave destructive forces.
- wave destructive forces

From 1995, these problems have been tackled through a specific programme of interventions including the reinforcement of the coastline.

The main objective of the overall program is to ensure the integrity of the lagoon barriers in defense of the Venetian lagoon, considered as complementarily intervention to the mobile barriers of the port.

Partners

Consorzio Venezia Nuova – Thetis S.p.A.

Objectives

Defend the Venice littoral affected by erosion, protecting the lagoon and inhabited areas near to the sea from sea storms.

Enhance landscape with environment improvement, through the reconstruction of protected beaches and dune strips, supporting also the intense tourist use of that area.

Themes and key approaches

- ADAPTATION TO RISK: Managing impacts of climate change and safeguarding resilience of coasts/coastal systems
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space

Methodology and tools

After the dramatic flood of 1966 the safeguarding of the Venice lagoon has been defined as a matter of "pre-eminent national interest" The activities of safeguarding Venice and the lagoon ecosystem have been delegated by the Special Law to the State and are implemented by the Ministry for Infrastructure and Transport - Venice Water Authority, through the Consorzio Venezia Nuova. Therefore, the Consorzio Venezia

Nuova has been implementing an extensive system of measures throughout the Venice lagoon area, including the project for the coast reinforcement of the littoral. The interventions have been carried out in agreement with regional and municipal authorities with the supervision of an international Committee.

Tools

- Coastal protection measures consist of beach nourishments which are protected by groynes and submerged breakwater together with the restoration of the dune area, designed primarily as protection structures against sea storms. From 1995, the work has involved 7 stretches of littoral with a total of 60 km of coastline and about 9.2 million m3 of sand used for the creation of new beaches and the widening of the existing ones. In addition, 8 km of dunes have been reconstructed.
- Studies and experiments in order to develop advanced techniques to reinforce and reconstruct extensive sections of the Venice coastline. Analysis of the local conditions such as wave motion, currents, sand volume, sediment transport, dunes and coastal vegetation.
- Identification of risk zones, with the aim to identify the most suitable strategies to adopt in order to minimise erosion and flood damage in case of extreme events.
- Adoption of a monitoring system of beaches with annual surveys of the shoreline and seabed in front of Isola Verde and Eraclea, able to check the changes in the volume and extent of sand of the beach and a detection system of wind and wave motion to analyze the climate than the average climate regime.

Achieved results

The projects have achieved the objective to reinforce and defend the littoral of Venice.

The adopted measures are characterised by a high degree of adaptive capacity and resilience in order to respond to the uncertainties of climate change. 12 years after the completion of the works, monitoring shows that the interventions have been able to protect the inhabited areas against beach erosion and storm damages with a refilling need of less than 10%.

Lessons to learn

Success factors

- Local authority agreements between State, regional and municipal authorities as successful element for the whole programme, allowing synergies between different interventions
- Favour of the local population for the coastal protection with flood barrier installation.
- Significant increase of resilience of coasts due to the protected nourishment intervention, the loss of sand were below to the expected 10%.The new band of beach has been protected from storms

Fail factors

- The new colour of the sand converted with the local one. Problem solved with the extra cost of excavating a trench.

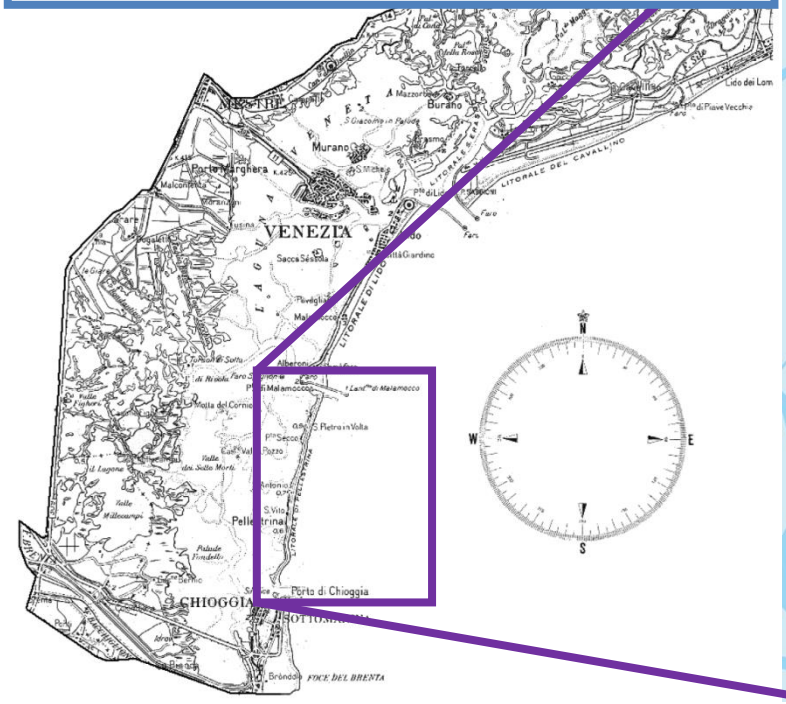
Replicability

The experience gained in Venice was shared during visits and meetings contributing to the development of nourishment interventions in many other Italian regions, among then: Lazio, Emilia Romagna, Abruzzo, Marche, Campania, Tuscany.

Adriatic contexts in which the BAT could be applied

Regions affected by coastal erosion.

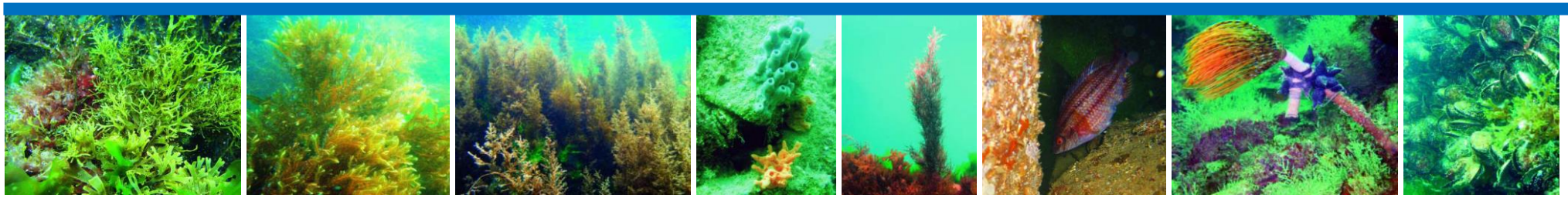
Protection of Venice littoral islands –Veneto Region – Italy
Best practice 1
Coast between Pellestrina and Malamocco



BEST Practice 1 - *New coastal habitats interventions for the sea protection.* The interventions are now considered as an integral part of the habitat with favourable living conditions for the biological communities and an optimal balance between flora and fauna.

	Lunghezza km	Superficie teorica colonizzabile m²	Biomassa umida macroalgale Totale (t)	kg/m²	Biomassa umida zoobenthos Totale (t)	kg/m²
Soffolta di Pellestrina	8,7	> 270.000	220-270	0,8-1,0	540-600	2,0-2,2
Scogliera di Malamocco	1,3	> 100.000	70-100	0,7-1,0	350-400	3,4-3,6

	Macroalghe	Zoobenthos	Ittiofauna
Soffolta di Pellestrina	61	79	41
Scogliera di Malamocco	62	72	45



3.3.2 Morphological recovery of the Venice Lagoon –Veneto Region - Italy

Overview

The Venice lagoon, the largest lagoon in Italy and one of the largest of the Mediterranean, is located in the north-east of Italy and covers an area of approximately 550 km2. The lagoon communicates with the sea through the three inlets of Lido, Malamocco and Chioggia.

Salt marshes and shoals – really most important lagoon's morphological systems that can host significant natural habitats, have over time suffered a significant reduction and are still subject to erosion due to: lack of sediment, wave motion caused by winds, currents and motor boats, and relative sea level rise. Sediments eroded from salt marshes and shoals are transported to the channels where they deposit or get lost in the sea; this process cause a deepening and a general flattening of the lagoon, which thus loses the nature of the dendritic system of channels.

The Venice Water Authority , on the basis of the objectives set out in the special law 798/84, in 1993 approved the Plan for the morphological recovery of the Lagoon of Venice, now being updated. The Plan identifies a series of measures aimed at controlling the negative evolution of the lagoon, such as loss of salt marshes and shoals, flattening and deepening subtidal flats, and sediment silting in channels.

The morphological recovery made so far, has reduced the loss of sediments to the sea and limited the process of flattening through the reconstruction of artificial salt marshes and shoals. This was done by reusing sediments generated by dredging maintenance of the canals.

The dredged sediments were used to construct artificial salt marshes and shoals, recreating in this way about 13 km2 of intertidal systems.

Partners

Italian Ministry of Infrastructure and Transport - Venice Water Authority, Consorzio Venezia Nuova, Thetis SpA

Objectives

The morphological recovery interventions and in particular the realization of the artificial salt marshes and shoals was conducted with the objective of protecting the hydro-morphological and biological characteristics of the lagoon, taking into account the current driving forcing more severe than in the past, with the aim to protect the of bio-functions rather than the reproduction of disappeared animal and plant species.

Themes and key approaches

- **Protection of existing morphology:** application of bioengineering techniques for the protection of the edges of natural salt marshes and the management of sedimentation processes, erosion and water quality.
- **Creation of artififcial salt marshes and shoals:** development of morphological surface to allow colonization of plant and animal species that are typical of intertidal areas (salt marshes and shoals), and that may in time be habitats of Community interest.

Methodology and tools

Venice Water Authority through its concessionary Consorzio Venezia Nuova led many activities for the protection and restoration of the lagoon morphology.

The main area of intervention for the morphological recovery focused on the reconstruction of salt marshes and sholas by reusing the sediments deriving from dredging maintenance of lagoon channels. This activity started about 20 years ago with the aim of keeping within the lagoon sediment that were previously discharged into the sea. The methods and tools developed are varied and site-specific, they include:

Tools

- Reconstruction of morphological salt marshes and shoals structures, through:
  - reuse of dredged material for the maintenance of the lagoon channels;
  - use of sandy sediments dredged in the sea or near the inlets;
- Protection of margins of salt marshes and subtidal flats by the waves agression
  - with wooden poles and "*burghe*" (modular polyester elements filled in with stones, sand or shells);
  - structures in sand (salt marshes, shoals, beaches, and sand bars);
- Systems to promote sedimentation and improve the quality of water
  - Sedimentation fences;
  - thin layer nourishment of salt marshes;
  - deposit of organic material;
  - vegetation transplant on shoals and salt marshes;
  - dredging of tidal creeks and tidal pond in the lagoon tidal flats and on artificial salt marshes.

Achieved results

Up today, 19.5 million cubic meters of sediments have been reused to realise morphological structures and 183 km of canals have been dredged. These activities allowed to realize salt marshes and shoals for a total area of 13 km2, representing 27% of the total surface of existing salt marshes and equal to twice the extent of natural slat-marshes disappeared in the same period due to erosion. Morphological structures, already completed, include 106 salt marshes (for an area of 11 km2) and 18 shoals (for an area of 2 km2).

Morphology existing protection interventions have been realized in 61 areas of the lagoon with different degree of resistance.

Lessons to learn

Success factors

- Development of innovative methodologies and techniques for the construction of protective structures of the lagoon morphology with different degrees of resistance (degradable and removable), to be used in a differentiated manner according to the specific characteristics of the intervention and in particular to the degree of exposure of margins to the aggression due to wave motion.
- Realization of morphological structures (salt marshes and shoals) able to provide funziotns and ecosystem services (e.g. biodiversity conservation, reduction of nutrient loads, maintaining morphological diversity, carbon sequestration, etc.). similar to natural salt marshes and shoals ones.
- Creation of surfaces covered by community habitat for about 45% of the total area of artificial salt marshes, with rates comparable to that found in natural salt marshes.
- Creation of habitats for bird species typical of transitional environments. For some of the most important species, the number of breeding pairs in artificial salt marshes of the Venice lagoon exceed the 1% of those estimated for the whole of Italy.

Fail factors

- Limited availability in the medium term of sediments for the reconstruction of additional artificial salt marshes and shoals
- This critical limitation may, overtime, became an opportunity, focusing on the techniques developed and applied by the Water Authority of Venice, which promote sedimentation and in particular the bio-stabilization of sea floors. This approach, in line with the slogan "building with nature", requires small amounts of sediment, thereby reducing the costs of intervention.

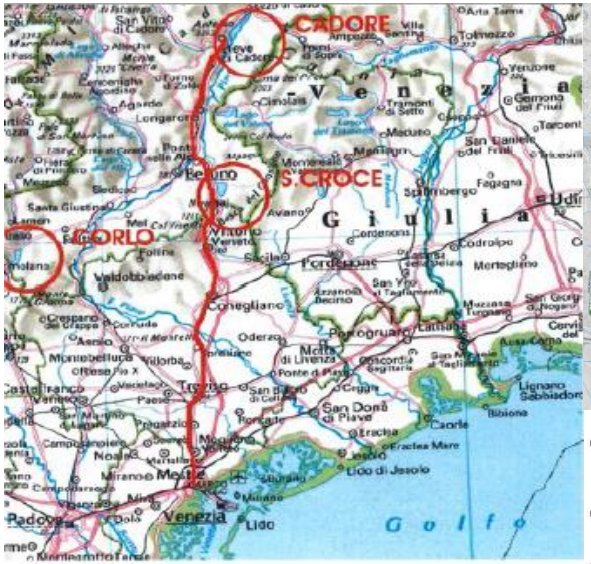
Replicability

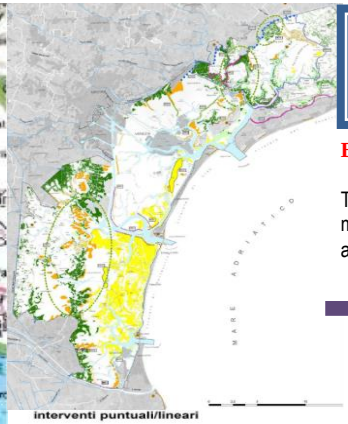
Twenty years of experimental intervention techniques have enabled Venice Water Authority, and its partners, to develop a broad portfolio of engineering methodologies and tools aimed at contrasting the f erosion of

coastal lagoon environments. These tools allow to intervene specifically in areas with different characteristics and thus can be applied to a wide spectrum of lagoon systems and morphological forms.

Adriatic context in which the BAT could be applied

Transition systems coast - sea in the Adriatic basin, including the Lagoon of Marano - Grado, the Caorle Lagoon and the Po delta. In some of these areas, such as in the case of the Lagoon of Marano - Grado, is evident the persistence of erosion phenomena similar to those affecting the Lagoon of Venice.

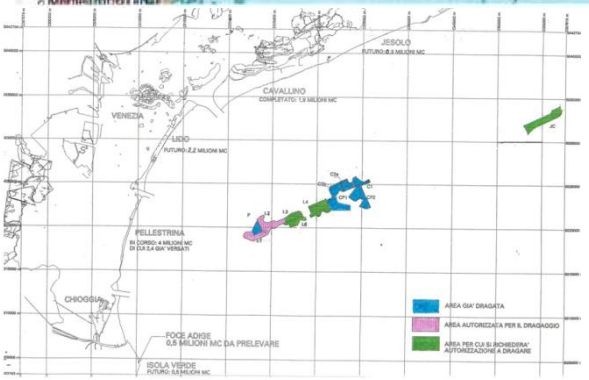


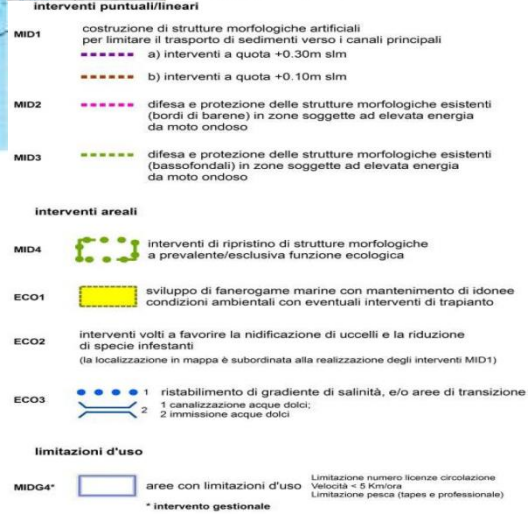


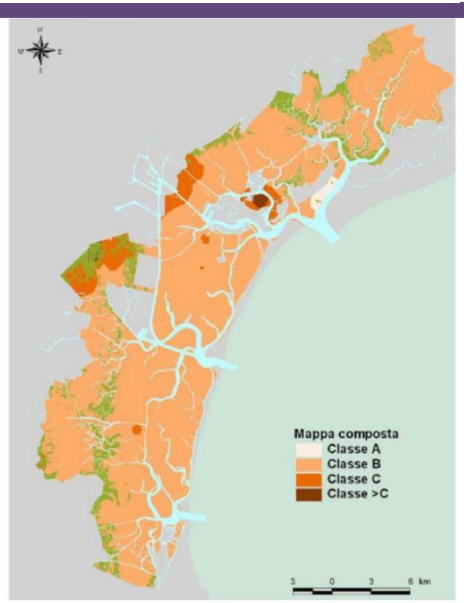
Morphological recovery of the Venice Lagoon – Veneto region - Italy

BEST Practice 2 – *Climate changes*

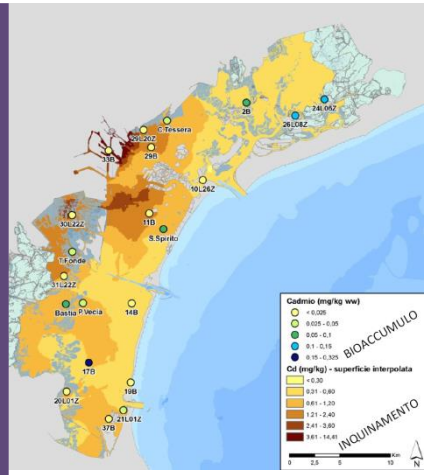
The morphological recovery plan of the lagoon's main objective is the morphological rehabilitation, keeping within the lagoon the greatest possible amount of sediments.

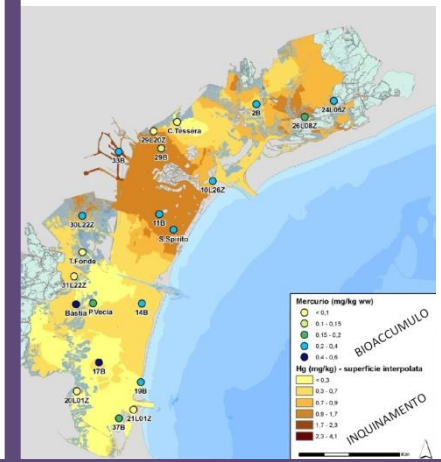


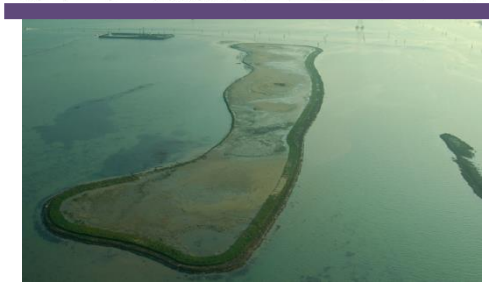


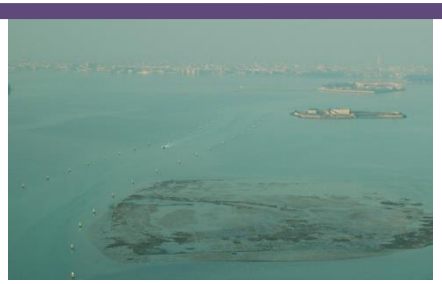


Sedimenti superficiali









3.4 FISHING AND ACQUACULTURE

3.4.1 Protection of Tegnùe and establishment of Biological Protected Zone – Veneto Region - Italy

Overview

Dunes and solid substrates interrupting the regular structure of the sand and mud seabed are one of the main morphology characteristic of the Venice Gulf.

The Venetian fishermen baptized these outcrops with the dialect word "tegnùe", "trapped", for the ease capacity with which they capture and tear fishing trawl,. These are scientifically named as "beach rocks" if they are of clastic origin or "organogenic formations", whether of biological origin; in both cases they represent a real natural oasis for sea biodiversity. The plankton, transported by currents, can concentrate among these submerged barriers due to water flows changes they induce. This accumulation favors the establishment, permanent or limited to the reproductive phase, of different forms of marine life, including some species of commercial value such as : redfish(Scorpaena porcus and Scorpaena scrofa), corvina (Johnius umbra), lobster (Homarus gammarus), squid (Loligo vulgaris), small octopus (Ozaema nutmeg), local species of cod (Trisopterus minutus) and conger (Conger conger). The tegnùe are mainly concentrated in the area directly in front of the Venice Gulf, included between Chioggia and Caorle. The large and irregular distribution, including relevant difference in depth(between 8 and 40 meters), causes a marked differentiation of animals and plants communities characterizing them. Depending on their location, the tegnùe may be subject to the influence of continental inputs, hydrodynamic processes and sedimentation.

Partners

Ministry of Agriculture and Forestry, Veneto Region, Municipalities, Veneto Regional Agency for Environmental Prevention and Protection (ARPAV),, Natural History Museum of Venice.

Objectives

The richness of microenvironments characterizing these formations, in particular organogenic ones, support the increase in species number. Their localization in eutrophic waters, rich in nutrients, not excessively deep, gives rise to a considerable increase of biomass especially of sessile organisms (anchored to the seabed) that can take advantage thanks to the large availability of food present in the form of organic material in suspension.

These rocky bodies, therefore, are of fundamental importance for the conservation of biodiversity in the marine habitat: thanks to their structure and morphology, which are different from the surrounding environment, they improve the diversity of benthic plants and animals species as well as of (commercially) valuable fish species.

The interest in safeguard them has grown over the years leading to the establishment by the Ministry of Agriculture and Forestry of Biological Protected Zones (BPZ) of marine areas.

Some coastal towns of the Veneto Region have resorted to BPZ to preserve the biodiversity of their territories. These zones preserve biological resources, ensuring the proper management of fisheries in its time and resources. The Municipalities of Chioggia and Caorle obtained the permission to establish appropriate BPZ for the protection of tegnùe, by decree of the Ministry of Agriculture and Forestry, between 2002 and 2004. The Regional Council has also elaborate the Regional Law n. Del12 15 July 2007 "Measures for the protection, promotion and development of the coastal area of the Veneto Region and the creation of marine biological protection zones" with the aim of promoting the preservation, protection and restocking of fish resources.

With the M.D: March 9, 2006, the Management Committee (MC) of the biological protection zones was established with the task of allowing the regulation for commercial fishing and recreation activities and the

related monitoring and control of all BPZ. The MC of BPZ has drafted a document providing specific protection measures in areas characterized by critical fish populations status: in these areas, juveniles fishing is prohibited for all species of fish throughout the year and in all areas of biological protection; it is prohibited to exercise any form of commercial fishing, sport and recreational fishing, including spearfishing unless explicitly permitted.

Themes and key approaches

- Promoting the development of the flora and fauna of coastal marine;
- Enhancing aspects of natural beauty of the Veneto coastal waters;
- Prohibition of fishing activities in areas subject to protection;
- Development of technological know-how for the preparation and management of man-made submerged structures.

Methodology and tools

Tools.

ARPAV, through the Northern Adriatic Observatory, launched a project financed by EU programs (INTERREG IIIA / PHARE CBC Italy-Slovenia, VI Triennial National Plan for Fisheries and Aquaculture and Leader Plus). The area of interest of the project lies between latitudes 44 ° 45 'and 45 ° 38' N, from west to east along the Italian coast to the edge of international waters.

The project is articulated into the following actions: data acquisition and critical review of existing sources; hydrographic campaigns (Side Scan Sonar and Bathymetric surveys), structural characterization and biological means of video footage, photos and samples, analysis of data and production of thematic maps through the use of a Geographic Information System. The objective of this study was to identify the relationships between characteristics of the animal populations and main characteristics of rocky outcrops, such as size, type and morphology, height of structures, location, distance from shore, influence of coastal human disturbance, other forcing factors.

- To comply with the provisions set out in the Regional Law n. Del12 15 July 2007, studies and research have been promoted to identify, classify, categorize and evaluate, on the basis of scientific basis, tha main natural characteristics of the Tegnùe, in order to allow a correct process of promotion, protection and development.
- The City of Caorle, in collaboration with the Northern Adriatic Observatory (OAA) , created as part of the Framework Plan "Caorle: a system for living waters", the "Tegnùe Leader Plus" project, aimed to:
  - Protecting the integrity of Tegnùe Porto Falconera through the establishment of marine oasis of restocking;
  - Promote the development of sustainable tourism and environmental education;
  - Complete the network of existing recreational paths in Valle Vecchia (Caorle) and in Brussa;
  - Allow a diversification of traditional fishing.

The aim of Action 5 of the project, "Natural Resources", was the creation of a restocking marine oasis for the preservation, study and monitoring of Tegnùa in the Falconera Port.

ARPAV and the Natural History Museum of Venice, which conducted the study "The Tegnùe Adriatic: exploitation of marine resources through the study of areas of environmental value", aiming to study and of valorize the rocky outcrops of the Tegnùe throughout the whole northern Adriatic through technical-scientific surveys. As part of this project the following Tegnùe have been studied and analyzed :

1) Caorle
2) D'Ancona
3) Malamocco
4) Sorse

5) Venezia
6) Cavallino Vicina
7) Cavallino Lontana

Moreover, a series of initiatives in different areas of relevance were introduced, such as:

1. the preparation of a special "Experimental field at sea" in the area near the mouth of the Sile river, which saw the technical-scientific collaboration of the NRC-ISMAR (National Research Council) of Venice, the Venice Civil Engineers Agency and the Veneto Regional Agency for Environmental Prevention and Protection (ARPAV) for research activities in preparation of introduction and spread of submerged barriers in the sea;
2. a three-year project for an experimental management of BPZ of Tegnùe of Chioggia, through which the Association "Tegnùe of Chioggia" proposes their preservation and valorization through information and educational activities;
3. A further project, presented by the City of Caorle, in partnership with the City of Grado and Koper (Slovenia), in the framework of the EU Interreg IIIA Italy - Slovenia, to identify an underwater itinerary, by regulating the divers tourist flows who visit the areas affected by this biotope and implementing environmental awareness aimed at diffuse the knowledge of the marine environment and the small tegnue;
4. The pilot project, called "ADRI.BLU" as part of the Interreg IIIA Adriatic Cross-border program, in cooperation with, amongst others, the Emilia Romagna and Friuli Venezia Giulia regions and the Croatian Istria and Montana Regions, for the immersion of aggregates in off-limits areas to commercial fishing, near the Po Delta, for testing of activities aimed at increasing recovery of fishery resources; based on previous experiments conducted on "experimental field in the sea."

Achieved results

- Establishment of Biological Protected Zones;
- Study and valorization of Tegnùe;
- Establishment of marine protected oases;
- New opportunities for coastal tourisms;
- Creation of artificial submerged structures to facilitate the reproduction and growth of fish species

Lessons to learn

Success Factors

- The coordination between national, regional and local authorities for the protection and valorization high values marine areas , and the study of environmental friendly fishing systems.
- The tegnùe zones are ideal for scuba diving, to appreciate the great variety of life forms of these waters, unique in the Mediterranean. For this reason, many diving centres and dive-guides were credited to organize and accompany enthusiasts divers diving to Tegnùe contributing with their work to promote the conservation in accordance with the proposed regulations.

Fail factors

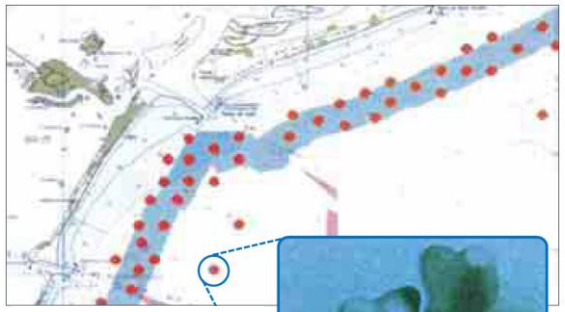
- The growing interest in tegnùe by Italians and foreigners divers, organized by tour operators and diving centres, popular and amateur sports organizations, must be supported and disciplined, in line with the objectives of protection these important environmental areas.

Replicability

The various projects as well as the protection and initiatives to enhance these areas, can be promoted by extending the procedures and methods of investigation in other areas of the Adriatic Sea with similar characteristics.

Context where the BAT could be applied

The adopted approach can be usefully replicated along the eastern coastal and marine area of the Adriatic Sea, where flora and fauna species similar to tegnue's ones can be observed. This approach focused on: study of rocky outcrops, catloging on biological resources, improvement and valorisation of those habitats, fishing regulation.

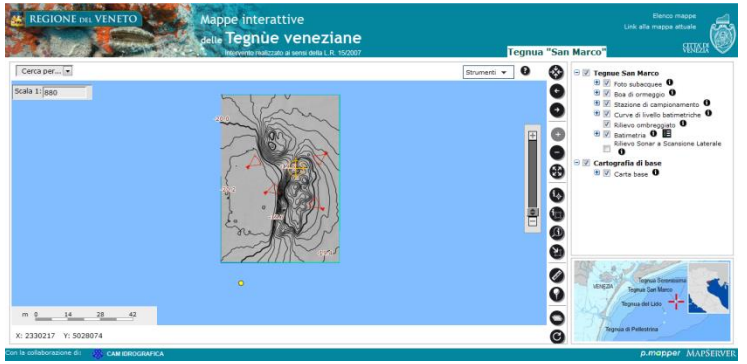


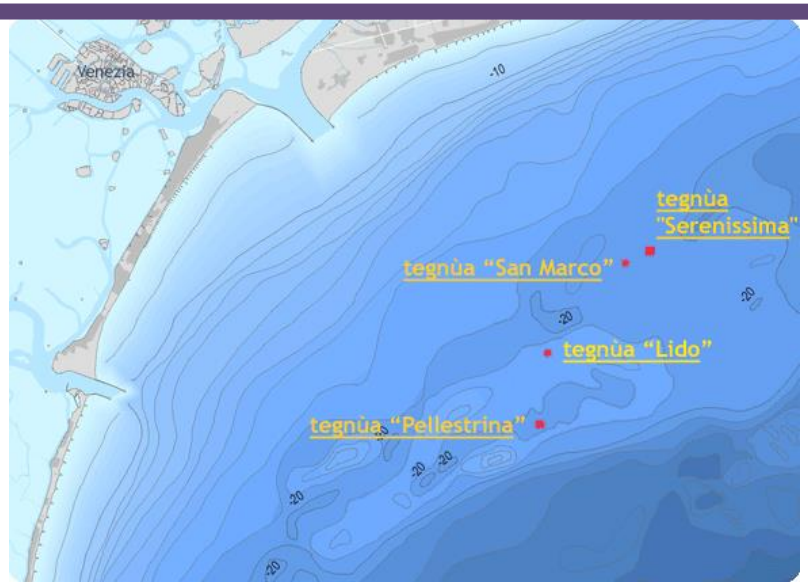
Above the northern Adriatic map where the placement of artificial tegnùe it is expected. In red the tetrapods' islands. On the right, an image of two tetrapods, huge blocks weighing about 10 tons

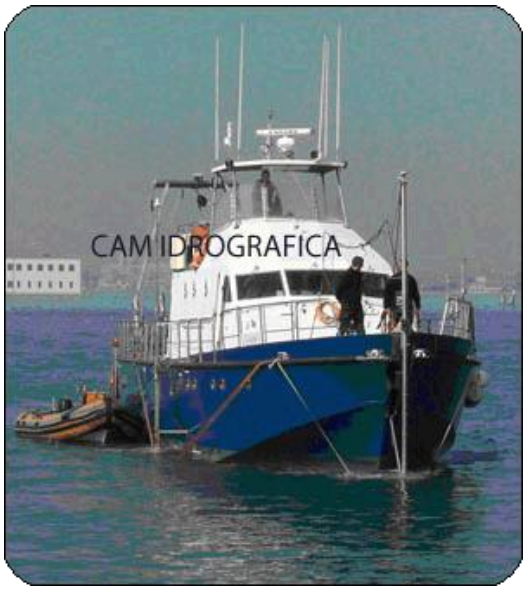
Protection of Tegnùe and establishment of Biological protected zones – Veneto Region - Italy

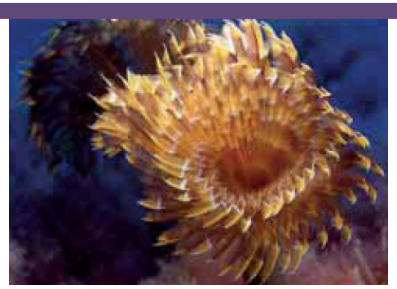
BEST Practice 3 – *Fishing and aquaculture*

From natural systems to sustainable artificial systems in a perspective of technological innovation in support of a model of shared knowledge through the implementation of a WebGis, a geographic information system with a wide accessibility.









3.5 PROTECTION OF HABITATS (COASTAL PARKS), AND BIODIVERSITY AND ESTABLISHMENT OF "AREAS OF BIOLOGICAL PROTECTION"

3.5.1 SEAPASS Project- Electronic Systems Applied for the Protection of the Environment and for the Sustainable Development - Guidelines for the management of eco-friendly telematics mooring fields– Puglia Region - Italy

Overview

Tourist recreational activities associated with the sea require the activation of a wide variety of services, public transport, guided tours, rental of boats, boating services, sports, diving centers , boating, mooring and storage services. The combination of these businesses is increasingly consolidating an active role in the dynamics of sustainable coastal zone management, for a tourism quality. The creation of a system for the electronic management of mooring fields, proposed by this project, and of an information services portal, could be a great opportunity for the operators providing eco-friendly sea services.

In this context, the protection of the seabed is carried out mainly by putting a ban on anchoring and setting navigation velocity limits in the most vulnerable and valuable natural areas, such as Posidonia oceanica, on the Punta Anya coast, Patras, and along the coral area in the Bay of Orte (Otranto).

In the depths characterized by the posidonieto the phenomenon of plowing the anchors is largely responsible for the erosion and the regression of the prairie, this means loss of habitat and less biodiversity: in terms of tourism, the seabed plowing and the erosion of Posidonia result in a disfigurement of the submerged landscape and in a lower number of fish and marine species. Parking areas such as pre-established mooring fields - where it is prohibited to anchor - with buoys secured to the seabed by systems with a low environmental and visual impact are a lightweight infrastructure, environmentally friendly and quota fixed only during summer months, when the demand for berths is up, which sees the growing attention of operators: tourist ports, shipping, Yacht Club and Boat Charter Company.

Telematic mooring fields designed to accommodate boaters for short periods, small journeys, accommodation or excursion during routine stops, represent one of the most interesting best practices have emerged in recent years, starting from an experiment in marine protected areas.

The telematics mooring fields project in the Bay dell'Orte (Otranto), in the heart of Salento, and at the coast of Punta Anya (Patras) has been financed in the frame of the cross-border cooperation programme between Italy and Greece INTERREG IIIa

Partners

Puglia Region, Otranto Municipality (LE), The ADEP (Municipality company of Patrasso) and CONISMA (Interuniversity Consortium for Ocean Studies).

Objectives

Protection of the seabed implemented mainly by putting a ban on anchoring and setting speed navigation limits in areas of greatest natural value and vulnerability, such as Posidonia oceanica.

Themes and key approaches

- **Preservation of habitat and biodiversity**: development of Parking areas such as pre-established mooring fields - where it is prohibited to anchor - with buoys secured to the seabed by systems with a low environmental and visual impact.
- **Growing of additional supply of berths**: construction of “light” infrastructure, with a low visual and environmental impact, without the creation of new tourist ports.

Methodology and tools

The Seapass experience in Otranto and Patras coastal areas has confirmed the validity of this methodology and with the creation of telematic mooring fields in protected marine areas in the Italian Cinque Terre and in Capo Carbonara.

From the methodological point of view, the prior step for the implementation of a mooring field is to elaborate an environmental and socio-economic pre-feasibility assessment, in substance, a screening phase with site inspections and site meetings to ascertain the existence of seabeds that need to be protected, and the interest of tourist's operators.

Tools

- Check of the pre-feasibility study of the environmental and socio-economic requirements for the construction of a mooring field,
- Stipulation between the parties of a Memorandum of Understanding or a programmatic agreement that assigns tasks and functions and identify possible sources of funding.
- Elaboration of a feasibility study, even through the involvement of a technical and scientific subject, hopefully public, for the definition of the ecological and geomorphological framework of seabeds and of the oceanographic area, integrated with socio-economic aspects (tourist flows, boating, port activities, local businesses), which sees to involve local authorities (municipalities, provinces, local protected area managers, port authorities) and the operators in the area (charter services company water, etc..). On the basis of the information obtained, with particular attention to the bathymetry of the seabed (which must be included in the range of 10-20 m depth), the presence of shelters, meteo-marine data, indications of local Maritime Authority (distance from the coast, security, etc..) and presences of boating, a preliminary project could be drafted, identifying an area for which request maritime concessions and technical specifications of the mooring system.
- Request of State maritime concession to the competent local administration (in most cases the regions, in some cases the municipalities delegated by the regions. Such procedural aspects, different from area to area, may request long time, which can significantly alter the timetable of the activities.
- Realization of technical geological surveys of the seabed, preparatory actions for the installation of restraint systems to the seabed. A particularly delicate phase, because it can lead to significant changes in the final design with respect to the preliminary project as approved.
- Installation and testing of telematics mooring buoys, of possible remote control systems and activation of the control station, to be carried out under the supervision of qualified personnel identified by the company managing the system.

Achieved results

The construction of mooring fields for recreational boating is an important option for the environmental protection policies of the seabed, as well as discipline and leisure and tourism flows quota fixing. The effects of mitigating the seabed erosion are assessed and the benefits in terms of management of tourist arrivals are evident. This experience has confirmed that such interventions can be an important tool to manage the land-sea, to be used in line with the tourist carrying capacity of the area.

Lessons to learn

Succes factors

- From the socio-economic point of view the mooring fields ensure the generation of an additional supply of tourism and boating services, with the creation of new berths in areas of great environmental and landscape value through relatively light and seasonal infrastructures.

- The effects of mitigating the seabed erosion are assessed and the benefits in terms of management of tourist arrivals are evident. This experience has confirmed that such interventions can be an important tool to manage the land-sea, to be used in line with the tourist carrying capacity of the area.
- Addition boating offer in support of the safe stop (water taxi, waste removal, catering, merchandising, tours, diving, sea-watching, fishing, etc..) represents an additional opportunity for operators. This offer can be translated into the creation of seasonal jobs.
- The mooring field and the dedicated web server becomes the immaterial door of the marine protected are, the channel that offers to tourists and boaters the opportunity to discover and attend places usually difficult to be reached.

Fail factors

The complexity of the mooring fields location must be detailed and cross-examinated on the basis of a number of factors, here briefly summarized:

Environmental aspects:

- biocenotic characteristics of seabed (to ensure the maximum protection of sensitive seabed);
- geological-technical characteristics of the seabed;
- bathymetry of the seabed;
- exposure to meteo-marine events (shelters, prevailing winds);

Socio-economic and operating data:

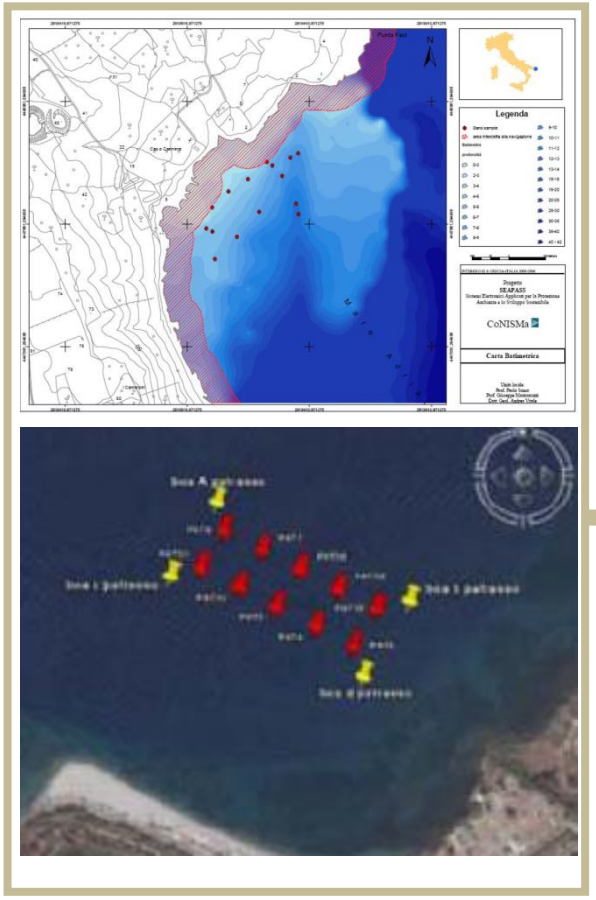
- • boating and tourist flaws;
- • presence of local actors involved in the management and delivery of services;
- • accessibility to ports, harbors and beaches;
- • needs of local fruition;
- • safety of navigation need (distance from the coast, signal systems

Replicability

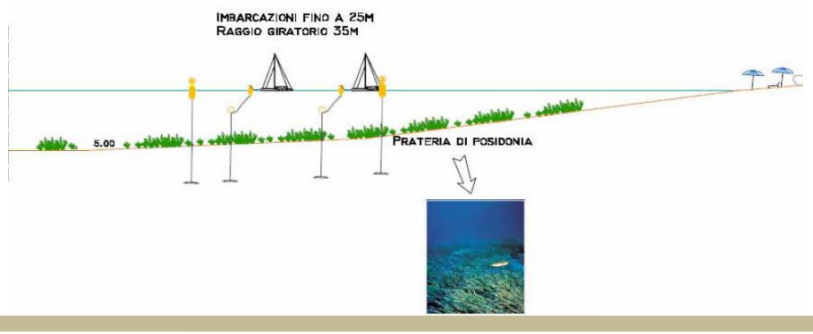
An essential aspect for the realization of buoys' fields is represented by the elaboration of preparatory studies, which should include an environmental and biocenotic framework and detailed surveys of geological-technical characteristics of the seabed.

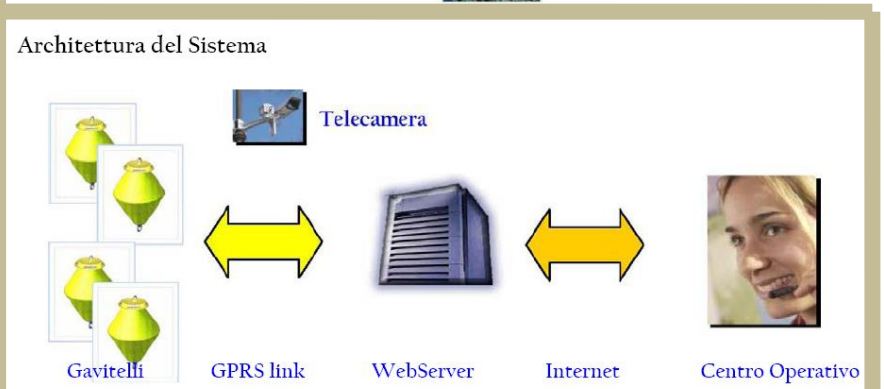
Adriatic context in which the BAT could be applied

Marine vulnerable or protected areas, characterized by the presence of protected seabed and by the risk of biodiversity loss, in such contexts subject to an heavy tourist load.



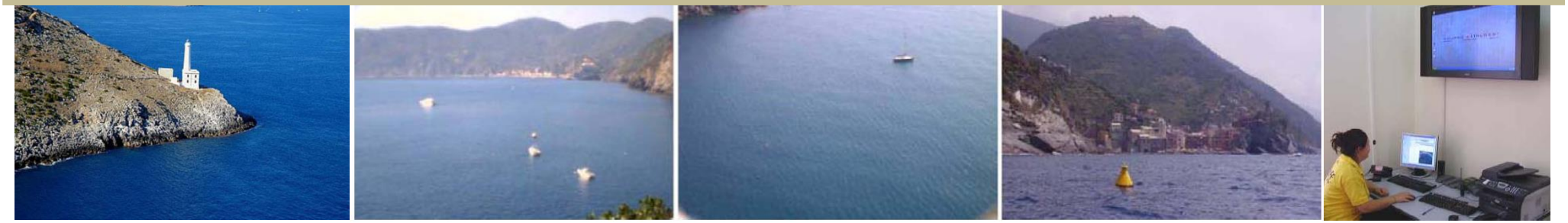
SEAPASS project - Electronic Systems Applied for the Protection of the Environment and for the Sustainable Development - Guidelines for the management of eco-friendly telematics mooring fields– Puglia Region - Italy





BEST Practice 4 – *PROTECTION OF HABITATS (COASTAL PARKS), AND BIODIVERSITY AND ESTABLISHMENT OF "AREAS OF BIOLOGICAL PROTECTION*

The SEAPASS project experience in Otranto and Patrasso coastal areas has confirmed the validity of the adopted methodology with the creation of telematic mooring fields in the Italian marine protected areas of the Cinque Terre and Capo Carbonara. The construction of mooring fields for recreational boating is an important option for the environmental protection policies of the seabed, as well as discipline and leisure and tourism flows quota fixing. One of the most interesting experiences of sustainable management of coastal area, one of the best practices more easily exportable, even in contexts very different from each other in terms of environmental, geographical and socio-economic characteristics



3.6 MONITORING AND CONTROL NETWORKS OF RIVER BASINS RELATED TO TRANSITIONAL WATERS AND COASTAL MARINE WATERS

3.6.1 Monitoring and control of the water drainage basin of the lagoon of Venice – Veneto Region-Italy

Overview

The drainage basin of the Venice lagoon is the area where the surface water network flows - in ordinary runoff conditions - in the lagoon of Venice.

The surface of the drainage basin is composed by two areas:

- the territories of the tributaries of the river basin surface waters directly flowing in the lagoon of Venice;
- the territories that affect draining water bodies of the lagoon of Venice by the spring waters, identified as “Charge Area”.

The drainage basin covers an area of approximately 2038 km2 - corresponding to the sum of the areas of its various river basins - and is, therefore, equal to nearly 1/9 of the Veneto region; the main river basins are divided in 29 sub-basins.

The drainage basin territory is limited by: Garzone channel on south – following the left Adige river bank for a great part of its end portion – Colli Euganei (Euganei hills) on south-west, Roncajette channel on west, Brenta river on north-west, Asolane Prealpi mountains on north, and Sile river on north-est.

The catchment area of the Vela channel, located north-eastern of the river Sile, is an area separated from the drainage basin. This area drains into the lagoon of Venice through water bodies that flow into the Vela channel without getting in their way further water contributions from other surrounding channels.

The drainage basin also includes the Recharge Area (RA), of 86 km2, which does not directly drain in the Venice lagoon , but feeds the springs of northern water bodies of the basin through the groundwater. As Recharge Area is indicated also the thin area of land between the rivers Bacchiglione and Brenta, close to the southern of the Lagoon. In addition, the waters of the Avenale river basin split at the hydraulic node of Castelfranco Veneto in rivers Dese and Marzenego.

Partners

Veneto Region, Veneto Regional Agency for Environmental Prevention and Protection (ARPAV), Venice Water Authority (MAV) and Consorzio Venezia Nuova (CVN), Basin Authority of the rivers Isonzo, Tagliamento Livenza, Piave, Brenta-Bacchiglione

Objectives

The current regulatory framework establishes, for the drainage basin of the lagoon of Venice, a series of environmental quality objectives for the surface water matrix, summarized as follows:

- by 2013, reaching the maximum permissible loads of nutrients discharged into the Lagoon of 3000 t / year of nitrogen and 300 tonnes / year of phosphorus;
- maximum permissible loads spilled into the lagoon for a number of inorganic and organic micropollutants (as well as for nutrients), in accordance with DM February 9, 1999;
- quality objectives in terms of concentrations of pollutants in rivers in accordance with the Ministerial Decree of 23 April 1998 (Master Plan 2000 approved by the Regional Council Decision no. 24/2000)
- achievement of the quality standards required by Ministerial Decree no. 260 of 8 November 2010, Annex 1 Table 1 / A and 1 / B in the Directive concerning 2008/105/CE on concentrations in streams

of priority substances and priority hazardous substances not belonging to the list of priority (see Decision of the European Parliament and of the Council no. 2455/2001/EC of 20 November 2001);
- achievement of "good" status, even in conformity with the provisions of Directive 2000/60/EC (Legislative Decree 152/2006, as amended)

Themes and key approaches
- Achievement of environmental objectives in the drainage basin of Venice
- Design of a plan for the monitoring and control of the water supply system
- Adaptation of the monitoring system to the European Directive 2000/60/EC

Methodology and tools

To verify the achievement of the environmental objectives in the drainage basin, and thanks to ARPAV contribution, Veneto region has been created a "System for the monitoring and control of the water network draining in the lagoon of Venice" in the frame of the "Master Plan 2000" (Piano Direttore 2000). This system, operating since 2002 consists of:
- n. 41 manual stations for surface water;
- about 80 manual stations for groundwater;
- n. 12 automatic stations for monitoring water flows; these are integrated with the stations operated by the Venice Water Authority (MAV) through the Consorzio Venezia Nuova;
- n. 16 automatic stations for water quality monitoring.

The plan for manual monitoring of surface water provides for about 270 samples per year for the determination of macrodescriptors (chemical parameters and chemical-physical characterizing the state of water) and of numerous (organic and inorganic) micropollutants; these corresponds to a total of about 25,000 analyses per year.

In 2009, the monitoring plan, following the publication of the Ministerial decree 56/2009, has been revised and adapted to the new regulatory requirements in terms of: priority and hazardous chemicals , specific pollutants, and specific biological quality elements (diatoms, macroinvertebrates and macrophytes) for which the monitoring was started. Quality objectives in terms of concentrations of pollutants in rivers, are evaluated according to both the Legislative Decree 152/2006 and subsequent amendments, but also according to the more restrictive objectives guide (non-mandatory) under the Ministerial Decree of 23 April 1998.

The environmental status is assess, too, as required by Legislative Decree 152/99, repealed by Legislative Decree n. 152/06, using the Level Index of Pollution by Macrodescriptors (LIM), an index that considers the values of 75° the percentile of dissolved oxygen, BOD5, COD, ammonia nitrogen, nitrate nitrogen, phosphorus, and E. coli. For each parameter, a pollution level and a corresponding score is detected; this score is higher for lower the level of pollution.

Achieved results

The monitoring activity allows to monitor the level of pollutants in the drainage basin of the Lagoon of Venice. Moreover, it allows the comparison with the data obtained during the monitoring campaigns carried out by ARPAV during previous years, in order to observe the persistence of pollutants in the aquatic environment or the trend of micropollutants contribution over the time. It allows also to assess the possible correlation between the presence of pollutants and the end of specific activities, as well as the interrelation among o pollutants. aquatic populations and human activities. It is also crucial to relate pollutants loads from the drainage basin discharged in the lagoon with loads already present in the lagoon.

Lessons to learn

Success factors

- A proper and deep analysis of different sources of pressure in the region is crucial to estimate the vulnerability of waters to both the pollutants (nutrients, pesticides, organic compounds, hazardous substances), and the most significant morphological alterations. This preliminary analysis was conducted using both the information already published (Water Protection Plan) and by finding new information from organizations such as the Basin Authority, the Land Reclamation Authority and Civil genes. The following sources of pressure affecting Veneto Region's waters were considered: (i) point pollution sources and the total loads of nutrients (nitrogen and phosphorus) directly discharged from main rivers and canals into the Venice lagoon and in the Adriatic Sea, (ii) the direct discharge into the sea of waste water treatment plant and productive activities, (iii) discharges from wastewater treatment plants near the river mouths, (iv) the presence of ports / docks, (v) the morphological alterations and other indicators such as the prevalent use of the coastal zone, population and population density, the number of tourists and the impact of tourism, manufacturing operations and industrial sites

Fail factors

- Once identified significant pressures, an assessment of the impact on waters is required to determine the probability that they do not reach the quality targets set by the Directive 2000/60/EC. Based on the previous environmental monitoring , water bodies are then assigned to one of the following categories:
  - at risk;
  - probably at risk;
  - non-hazardous.
- For each of the water bodies identified an evaluation of the feasibility to achieve and / or maintain the environmental quality objectives by 2015 (Annex 3, Section 1.1, Section C of Part III of the Legislative Decree no. 152/2006) must be carried out, therefore they must be assigned to one of the risk categories according to Table 3.1 of Annex 1, Section A.3, MD n. 56, 14/04/2009.

Replicability

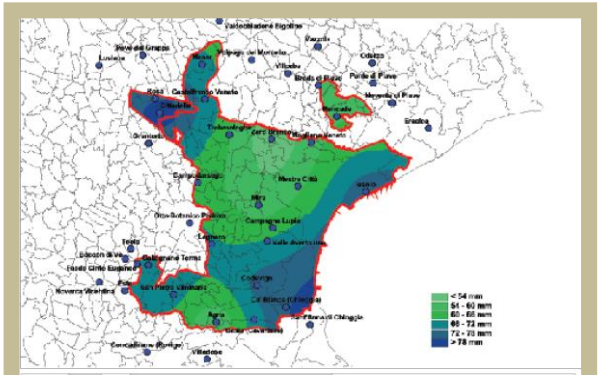
The implementation of Directive 2000/60/EC requires to Member States to achieve by 2015 the goal of the "good status", for surface water and groundwater respectively. Moreover, an higher quality status must be maintain wherever this is already characterizing the water body. Member States undertake to comply with the standards and objectives for Protected Areas (Water and specific use, Sensitive Areas, Parks, SCI, SPZ, etc..) by 2015.

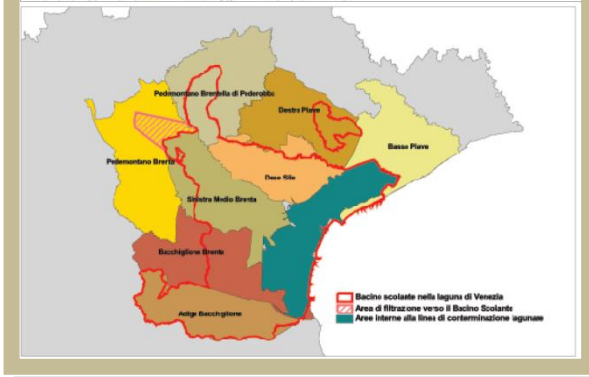
The river basin district will have to be the territorial unit of reference for the integrated management system of surface waters and groundwater.

Adriatic context in which the BAT could be applied

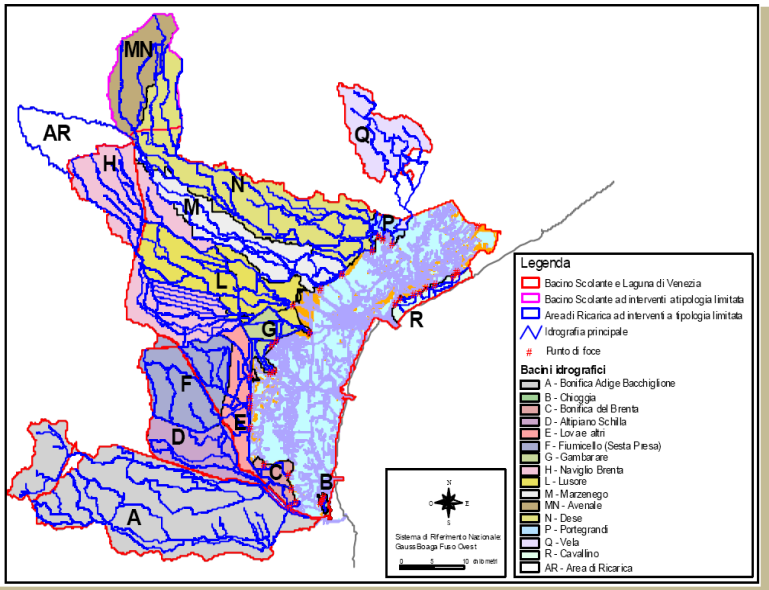
Directive 2000/60/EC - Article 8 provides that Member States should ensure the development of programs for monitoring of water status in order to establish a coherent and comprehensive overview of water status within each river basin district according to the criteria, parameters and frequencies laid down in Annex V of the Directive itself.

On the basis of these guidelines, the methodological approach can be applied in environmental contexts similar to those in the Veneto region, such as those of the Adriatic regions where lagoon systems and deltas can be found.

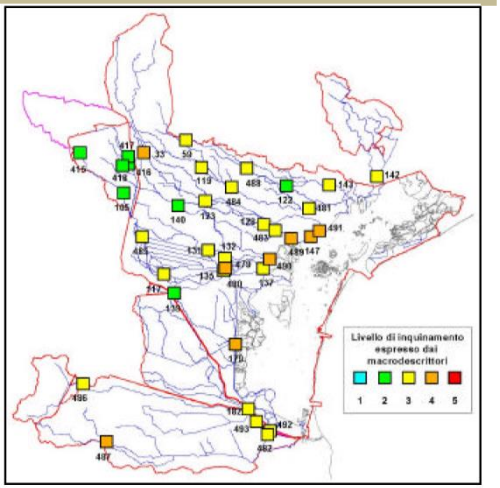




Monitoring and control of the water drainage basin of the lagoon of Venezia – Veneto Region - Italy

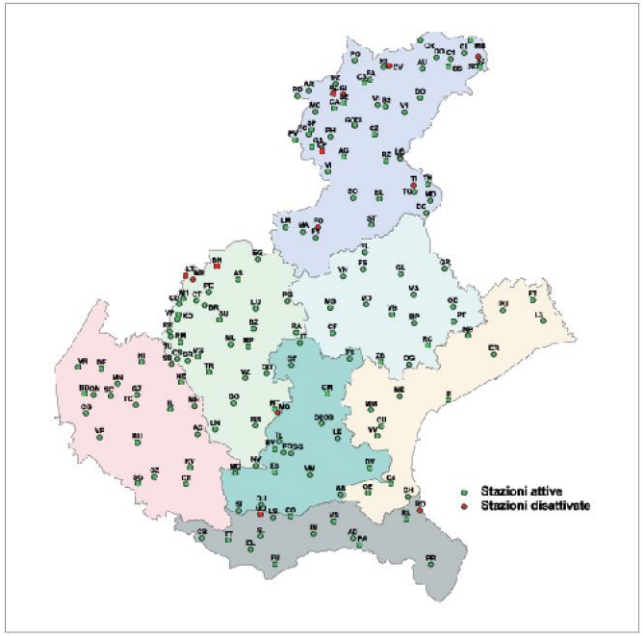


Provincia	Stazioni attive	Stazioni disattivate	Totale stazioni
Belluno	43	9	52
Padova	17	0	17
Rovigo	13	2	15
Treviso	16	0	16
Venezia	13	0	13
Vicenza	30	4	34
Verona	21	0	21
Totale	**153**	**15**	**168**



BEST Practice 5 –*MONITORING AND CONTROL NETWORKS OF RIVER BASINS RELATED TO TRANSITIONAL WATERS AND COASTAL MARINE WATERS*

The monitoring data of 2002, an exceptionally rainy year, confirmed the remarkable sensitivity to hydro-meteorological forcing of nutrient concentrations in the surface waters of the drainage basin and the significant incidence of loads of nutrients discharged into the Lagoon during relevant hydrological events. The variability of the nutrients dynamics during the events (in particular for phosphorus) and the high costs of the frequent manual samplings, confirm the importance of the availability of monitoring stations, such as in the Lagoon of Venice drainage basin, where a continuously monitoring of loads it is necessary.



3.7 ENERGY POLICIES

3.7.1 Life Sedi.port.sil Recovery of dredged SEDIments of the PORT of Ravenna and SILicon extraction – Ravenna - Italy

Overview

The SEDI.PORT.SIL project is intended to demonstrate the efficiency of consolidated treatment technologies coupled with innovative techniques aimed to the recycle and valorization of port dredged sediments, that can be considered an important resource rather than just a dangerous waste.

From a technical perspective, the project proposes an integrated cycle of actions to be applied to sediments (and associated water) right after the dredging, to reduce the environmental impact and maximize the percentage of material suitable for recycling. Decontaminated sediments could be suitable as raw material in the infrastructure and environmental engineering sectors. The use of polluted sediments for the extraction of metallurgic silicon is also be investigated. A pilot study is firstly undertaken for some sediment samples dredged from the Port of Ravenna, Italy. Afterwards we analyse the applicability of the process at regional level, and we evaluate the process repeatability in a different European context (port of Midia, Romania). The final goal is to develop a guidelines for treated sediment and raw materials reuse and to assess the feasibility and sustainability for the realization of a treatment plant at the Port of Ravenna.

Partners

Med Ingegneria, Ferrara University, Bologna University, The Po Delta Park, ISPRA, GeoEcoMar, DIEMME, CRSA MED Ingegneria, The Port of Ravenna Authority

Objectives

Il SEDI.PORT.SIL. project has been conceived to demonstrate an integrated approach for the sustainable management of sediments dredged from ports

Themes and key approaches

- improve the recycle and valorization of port dredged sediments;
- maximize the percentage of material suitable for recycling;
- feasibility of a pilot treatment plant;
- development of a technology know how to develop guidelines for treated sediment and raw materials reuse

Methodology and tools

Tools

The project actions are:

1. Project Management
2. Preparatory action – state of the art baseline
3. Demonstration activity for sediment treating process
4. Plasma sediment treatment and Silicon extraction
5. Sediments reuse plan
6. Treatment Plant At The Port Of Ravenna
7. Replication of the sedi.Port.Sil. in Midia Harbour, Romania.
8. Dissemination and communication

The state of the art baseline objective is to carry out a literature review in order to create the state of the art baseline for the development of the overall project. The Demonstration activity for sediment treating process aims to demonstrate the efficiency of the proposed sediment decontamination process through a prototype application: articulated in the following three sub actions:

a. Sediment sampling (3 samples of sediments and associated water with different expected pollution levels);
b. Sediment characterisation (detailed analysis of every sample, both pre and after treatment, including physical-chemical, micro-biological, ecotossicological and mineralogical tests);
c. Sediment treatment through laboratory processes and a prototype plant, built on purpose for this study.

For the Plasma sediment treatment and Silicon extraction a TEKNA PL-35 plasma torch available at the UNIBO DIEM laboratory is used, reproducing at a smaller laboratory scale the high temperature and high heat exchange conditions of the industrial scale installation. These applications allow to test the process of vitrification and inertization of polluted sediments and the potential extraction of metallurgic grade silicon.

Finally, the project aims to identify and characterise the possible reuses of sediments dredged from Ravenna Port after their treatment and the realization of a pilot treatment plant at the port of Ravenna

The treatment plant will be design for the treatment of port of Ravenna dredged sediments (phase A), but to allow the activity of the plant after the end of the dredged sediments it is necessary to find further sources of sediments for the plant (phase B).

Expected results

- To demonstrate the efficiency of treatment processes applied to polluted sediment (soil washing) and associated water (pump&treat) on the sediment of the Port of Ravenna;
- To demonstrate the efficiency and the productivity of the extraction of metallurgic silicon from polluted port sediments through a plasma treatment. This process is highly innovative because it has never been applied to polluted marine sediments;
- To identify and plan best possible reuses of decontaminated sediment and extracted silicon;
- To demonstrate the efficiency of a plasma torch for the decontamination of the finest fraction of dredged sediments (diameter 25÷150 μ);
- To create a Business and a Master Plan to analyse the realization of a treatment plant at the Port of Ravenna;
- To evaluate the repeatability of the process in a different geographical and administrative context in Europe;
- To raise public awareness on sustainable development issues targeted by the project.

Lessons to learn

Success factors

- studies and researches – under definition – permitting to understand how we can from port sediments, through different processes, extract reusable materials. A result that could herald interesting investments in port areas, in order to create systems that allow to realize this process on a large scale, giving also an important environmentally response for the accumulation of sediment dredging.
- Extensive and diversified partnership: in addition to the lead partner MED ENGINEERING srl, other parts are the University of Bologna and Ferrara, the DIEMME SpA of Lugo, ISPRA, the Regional Park of the PO Delta(Emilia-Romagna region), the CRSA-MED ENGINEERING Srl and finally the Romanian institute GEOECOMAR, who coordinates the replication of experiments carried out on the sediments of the port of Ravenna in the Romanian port of Midia on the Black Sea, hosting, last May, the previous intermediate workshop project

Fail factors

- Analysis and detailed feasibility for the construction of treatment plants

Replicability

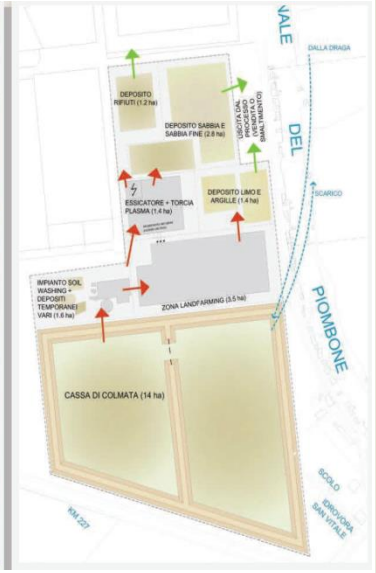
The replicability of this best practice depends on the following actions:

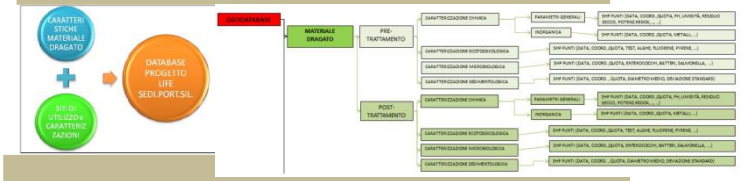
- Inventory and analysis of available data and new sediment characterization (previous and current specific national legislation, historical evolution of the port, the existing data on particle size distribution, mineralogy, and concentration of pollutants and existing data on dredging the port). The conclusions of the inventory shall contain an analysis of the gap between available and necessary data.
- Assessment of plasma treatment of sediments to demonstrate the feasibility of a treatment.
- Study of the local reuse of treated sediments, identifying potential sites for the effective reuse of the sediment (taking into account national and regional planning, namely the National Development Plan), based on the characteristics of the target site and the economic advantage from the use of recovered sediments.
- Feasibility study for the realization of a treatment plant.

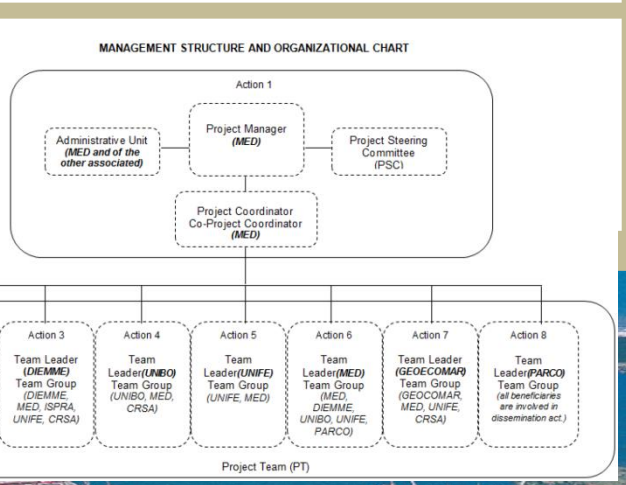
Adriatic context in which the BAT could be applied

Adriatic port areas

Life Sedi.port.sil Recovery of dredged SEDIments of the PORT of Ravenna and SILicon extraction – Ravenna - Italy







BEST Practice 6 – *ENERGY POLICIES*

Il SEDI.PORT.SIL. project has been conceived to demonstrate an integrated approach for the sustainable management of sediments dredged from ports, as an important resource rather then waste

The project proposes an integrated cycle of actions to be applied to sediments (and associated water) right after the dredging, to reduce the environmental impact and maximize the percentage of material suitable for recycling.

The main object is to identify and characterise the possible reuses of sediments dredged from Ravenna Port after their treatment and the realization of a pilot treatment plant at the port of Ravenna

3.8 CONSTRUCTION AND URBAN PLANNING

3.8.1 Spatial planning in Stockholm - Converting an oil terminal into municipal housing: land use planning in Stockholm – Sweden

Overview

Stockholm is located on Sweden's south-central east coast, where Lake Mälaren meets the Baltic Sea. The central parts of the city consist of fourteen islands that are continuous with the Stockholm archipelago. The geographical city centre is situated on the water, for this reaseon Stokholm i salso called “Venice of the North”.

The increased demand for oil caused by industrialisation resulted in the construction of the oil port at Loudden in 1926, the biggest oil terminal in the region, with an area of 25ha. After several years of intensive debate between stakeholders - politicians, oil companies, municipalities and NGOs - the city of Stockholm finally took a unilateral decision in 1999 not to prolong the contracts with the oil companies at Loudden after 2011. One motivation for the decision was to get rid of the transportation of petroleum products by lorries travelling through the city and the transportation of petroleum products in the archipelago. An important motive for closing the Loudden Docks was Stockholm City’s comprehensive strategy to transform industrial land to build new housing. The decision to close the Loudden Docks after 2011 has recently been changed to 2016, largely because no alternative site for the oil terminal has yet been identified.

Partners

Stockholm City council as owner of the Stockholm Harbour Company

Objectives

Adapt the city and the urban development to the climate changes:

- by 2020, carbon emissions lower than 1.5 tonnes per person;
- by 2030, fossil fuels free.

Themes and key approaches

- ADAPTATION TO RISK: Integrating coherent strategies covering the risk-dimension into planning and investment
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment
- SUSTAINABLE ECONOMIC GROWTH: Improving competitiveness

Methodology and tools

Tools

The new city district, Stockholm Royal Seaport, is currently being built in Stockholm's harbour area. The urban development plan is due for completion in 2025 and will cover an area of 260 ha. some 2 km from the city centre to which it will be linked with bio-gas fuelled buses. It will be home to 55,000 in 10,000 apartments and 30,000 work places.

Stockholm Royal Seaport is aiming to be fossil fuel free by 2030, while the entire City of Stockholm is aiming for 2050. By 2020, residents and workers in Stockholm Royal Seaport should produce less than 1.5 tonnes of carbon emissions per person. The entire development project will focus on sustainable transport solutions, efficient building processes, energy conservation and energy efficiency, and on the whole adapted to future climate change.

Large investments have been made on public transport, and on the extension of new road infrastructure. The underground has been complemented with a modern city tram through the area. Many residents and workers use the pedestrian and cycle lanes that connect Stockholm Royal Seaport with the city centre and the existing large, green park areas. The port and energy plants have continued to develop and have been integrated with the new urban development. The expansion of the piers has resulted in new quay space and terminal buildings. At the same time, port operations have been made more efficient which has developed into a passenger port. All citizens are able to follow the environmental monitoring programme via internet.

Achieved results

- Stockholm, itself, has reduced CO2 emissions by 25% compared to 1990 levels and the share of renewable energy in district heating is nearly 70%.
- In one eco-district, the waste water from a single household produces sufficient biogas for the household's gas cooker.
- Most biogas is, currently, used as fuel in eco-friendly cars and busses.
- 25% of the waste produced by Stockholmers is recycled, 73.5% is recovered for production of district heating (energy recovery by incineration) and 1.5% is biologically treated.
- 77% travel by public transport during peak hours. All inner city buses run on renewable fuels and all subways and commuter trains run on renewable electricity.
- The number of people cycling has increased by 75% over the past ten years.
- Stockholm has 760 km of cycle lanes, and more are being built. Traffic has been reduced by 20%, emission levels are down and air quality has been improved.
- 90% of the population live less than 300 metres from a green area.

A few decades ago, there were heavy industries on the plots along the water-front, and the water was heavily polluted. Now there is a park, and the water is good for fishing. Through a systematic effort to reduce emissions, energy consumption, waste and noise, the Ports of Stockholm Group has been awarded the highest environmental classification among all the world's ports.

Lessons to learn

Success factors

- Stockholm, the European Green Capital. is noted for achieving high environmental standards, is committed to ambitious goals for further environmental improvement and sustainable development.
- Actions to reduce the net greenhouse gas emissions
- Property developers and local government partnership for implementing economically viable innovations in buildings, the generation of clean energy, waste management, water management and transportation and outdoor lighting systems.

Fail factors

- A long term adaptation of the urban development to climate changes.

Replicability

Planning and conversion of the port areas requires local consensus, investments and a long-term strategy

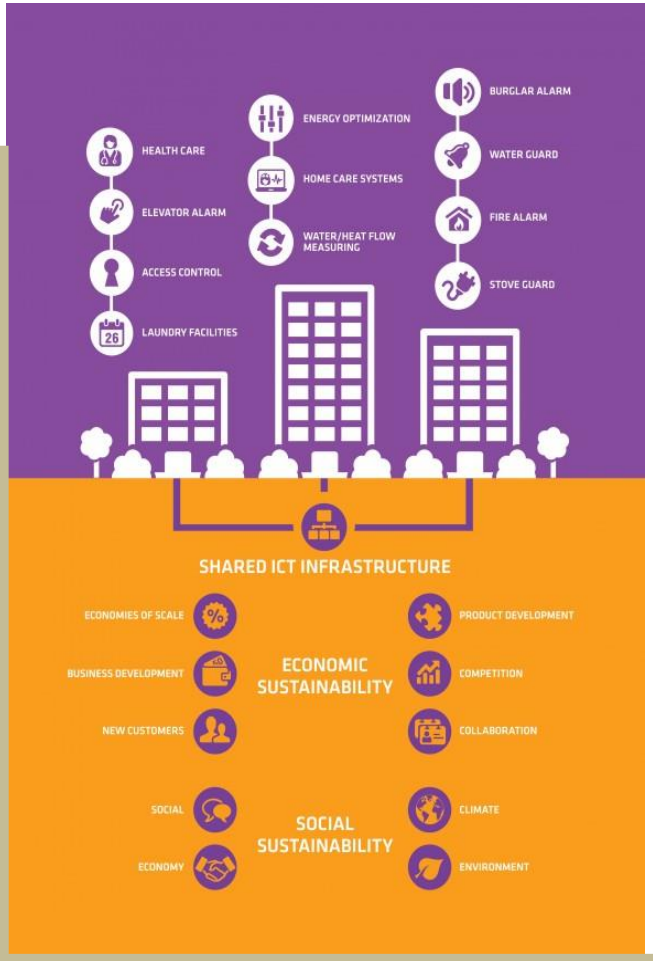
Adriatic contexts in which the BAT could be applied

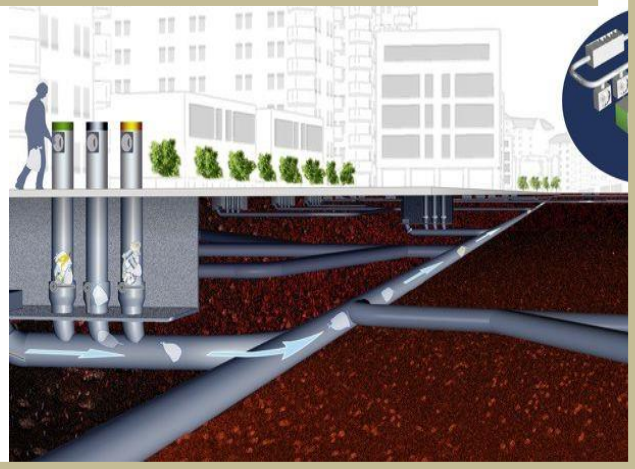
Port areas of urban cities

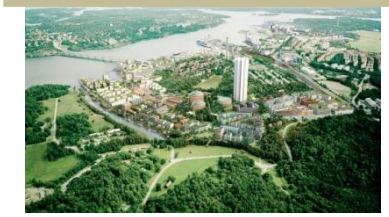
Spatial planning in Stockholm Converting an oil terminal into municipal housing: land use planning in Stockholm – Sweden

BEST Practice 7 – *CONSTRUCTION AND URBAN PLANNING*

Stockholm Royal Seaport is a new urban development project. The city district has unique characteristics such as close to the water, green areas and cycling distance to the city center. Ambitious environmental targets have been set for the area, as well as varied architecture, a mix of homes, culture, space for recreation, workplaces and local services.
The project is an initiative aiming to detail a generic information and communication technology (ICT) infrastructure for Stockholm Royal Seaport.







3.9 MOBILITY PLANNING

3.9.1 A handbook for integrated maritime spatial planning – Romania and Baltic Sea

Overview

The rapid growth of marine and coastal activities such as tourism, transport, fisheries, port development, shipping, offshore drilling and offshore renewable energy is constantly increasing the competition for the limited marine space which can lead to potential conflicts between sectoral interests. Also the high pressure of climate change on the marine ecosystem has effects on the economic activities in the maritime areas.

This has led to the adoption of new approaches for managing the maritime activities in a sustainable manner to avoid conflicts and create synergy between various groups of users as well as managing their impact on the marine environment.

Partners

National Institute for Marine Research and Development 'Grigore Antipa', National Institute for Research and Development 'UrbanProject'. Romania

Objectives

Develop tools and capacities for an effective integrated planning in coastal zones and maritime areas by introducing the completely new spatial planning instrument and using the GIS system for an effective trans-national planning.

Themes and key approaches

- SUSTAINABLE USE OF RESOURCES: Sound use of resources.

Methodology and tools

Involvement of the two main National Research Institutes

Tools

- transferring of the approach of terrestrial spatial planning to the open sea
- mapping of the current uses and pressures that cover the land and sea of a specific area
- GIS tool used to provide technical support for mapping and analysing the different uses which reveal the ongoing developments.
- Spatial impact assessment and compatibility of uses considered as key parameters in order to decide whether there is a need to develop a spatial sea use plan.
- Participative planning, awareness-raising and training.
- Definition of a legal framework for the adoption of the ICZM approach

Achieved results

The adoption of the Integrated Maritime Spatial Planning (IMSP) as a fundamental tool for the sustainable development of marine areas The handbook includes 11 key messages that briefly explain the main elements for planning and implementing the IMSP with success.

Lessons to learn

Success factors

- Mapping of the sea uses for highlighting the density of uses and different spatial demand.

Fail factors

- Legal or regulatory framework missing. It does not allow maritime spatial planning nor the relevant institutions to deal with maritime spatial planning procedures.

Replicability

The coastal and marine spatial planning is a priority issue for the whole Adriatic region, whose analysis revealed pressures on the environment due to the mix of different functions that insist on the same area.

This difficulty is compounded by the absence of a common legislative and regulatory framework for the Adriatic region, able to create a balance of the socio-economic development and the protection of the coastal and marine areas, and to overcome the competition in the use of resources and to lead towards a cooperation between all involved parties.

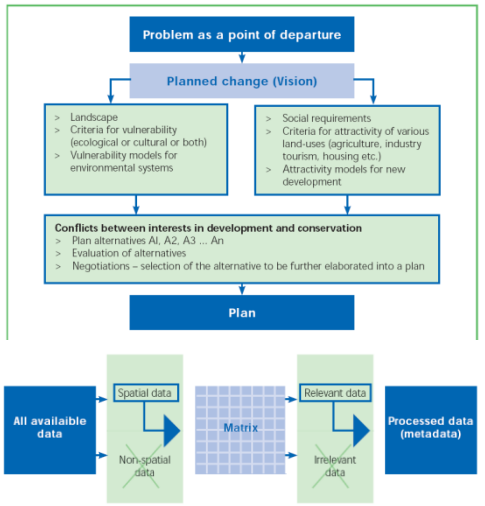
Adriatic contexts in which the BAT could be applied
East and west Adriatic coasts.

An Handbook for the integrated maritime spatial planning - Romania and Baltic Sea

New approaches for managing the maritime activities

BEST Practice 8 – *Marine Spatial Planning*

Implementation of integrated marine spatial planning policies (IMSP)



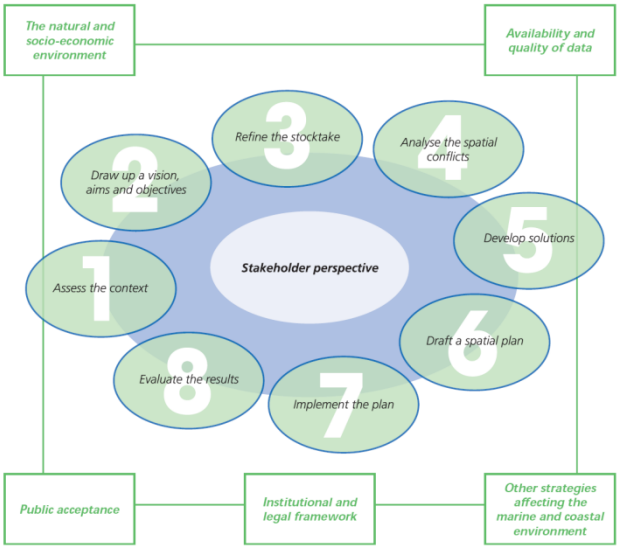
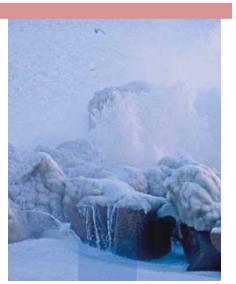


Fig. 4 The IMSP process



3.9.2 PAP/RAC Cyprus

Overview

The "coastal zone", the area that extends 2 km inland from the coastline covers 23% of the country's total area, in which about 50% of the total population lives and works and 90% of the tourism industry is located. Coastal areas generate by far the largest source of household income, as well as other major activities and most of the urban development.

In Cyprus there is no single legal or functional (planning) definition of the "coastal zone" or "coastal area". There are three main widely used geographical definitions referring to "coastal zone/area", each one related to the purposes of a different law and institutional context:

- The Foreshore Protection Law defines the "foreshore" as "all lands within 100 yards (91.44 m) of the high water mark". The foreshore area is public property falling under the jurisdiction of this Law.
- The New Tourism Policy of 1990 (under the Hotel Accommodation Law and the Town and Country Planning Law – Countryside Policy) designates a "zone" of 3 km. from the coastline for the purpose of regulating tourism development.
- The Coastal Protection Study of the Coastal Unit of the Ministry of Communications and Works has adopted for the purposes of the survey of coastal erosion problems, a definition of the "coastal strip" as the area of 2 km from the coastline.

It is noted however that the Integrated Coastal Zone Management (ICZM) Protocol under the Barcelona Convention will be signed by the Ministry of Agriculture, Natural Resources and Environment on behalf of the Republic of Cyprus. The area to which this Protocol applies shall be "the seaward limit of the coastal zone, which shall be the external limit of the territorial sea of States Parties and the landward limit of the coastal zone, which shall be the limit of the competent coastal units as defined by the States Parties".

Partner

Ministry of Agriculture, Natural Resources and Environment on behalf of the Republic of Cyprus.

Objectives

Sustainable planning of coastal areas and the activities therein established.

Themes and key approaches

Integrated Coastal Zone Management

Methodology and tools

An Integrated Coastal Area Strategic Framework needs to be incorporated within an island-wide policy document which will define the major long term social, economic, environmental and spatial development objectives. This document will be the Island Plan proposed by the Strategic Development Plan for Cyprus 2007-13. The Island Plan will thus provide:

- the niche for Integrated Coastal Area Management (ICAM)
- the instrument for closer coordination among Ministries and Departments on strategic planning and
- the context for the coastal and other Local Plans.

All Ministries and Departments, responding to the need for ICAM, should define common and compatible objectives for resource conservation and development targets consistent with the proposed ICAMSF to feed into the Island Plan.

Tools

In light with these common and compatible goals, cooperation should be actively pursued among all Ministries and Departments. For strengthening the institutional status and for activating effective coordination among the

various competent Ministries / Departments, and between the public and private sectors to achieve the above, a Coastal Area Management Ministerial Committee has been with the folloing tasks:

- Review the present regulations for "foreshore protection" according to the ICZM Protocol requiring prohibition of building development within a distance of at least 100m from the coast.
- Review the present fragmentation of responsibilities in the issuing of development permits for near-shore and off-shore uses, particularly for large developments, involving various authorities (Department of Town Planning and Housing, District Administration, Ports Authority and Council of Ministers) and advise on necessary changes towards its rationalization.
- Ensure that advice is given to the Ministerial Committee concerning potential threats to the coastal and marine ecology and the consequences for coastal erosion from near-shore and offshore developments.
- Establish a close liaison and engage in consultations with the Planning Board and the Technical Committee on Environmental Assessment concerning ICAM.
- Produce an operational document to be submitted to the Ministerial Committee, outlining the key areas of interdependence and potential conflicts in coastal development arising from their particular policies, priorities and actions ensuring that all resources, development sectors and decision-making bodies are interlinked under a common and long term strategic vision on coastal management.

Achieved results
ICZM Protocol

Lessons to learn
Success factors
Elaboration of an operational document to be submitted to the Ministerial Committee, outlining the key areas of interdependence and potential conflicts in coastal development arising from their particular policies, priorities and actions ensuring that all resources, development sectors and decision-making bodies are interlinked under a common and long term strategic vision on coastal management.
Fail factors
Absence of a common legislative framework

Replicability
This Best Practice aims to develop a new integrated and shared knowledge; the needed support of a task force to involve all stakeholders and decision makers to define shared scenarios for a new form of governance drawing to a common program for the ICZM development.

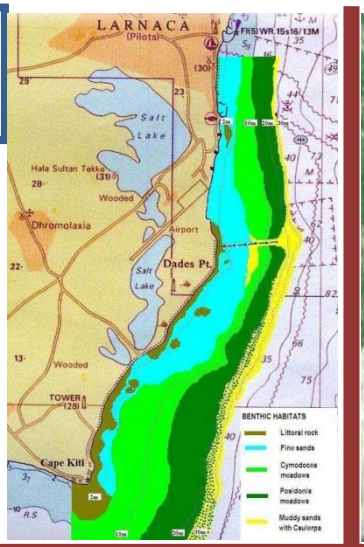
Adriatic contexts in which the BAT could be applied
All Adriatic Regions

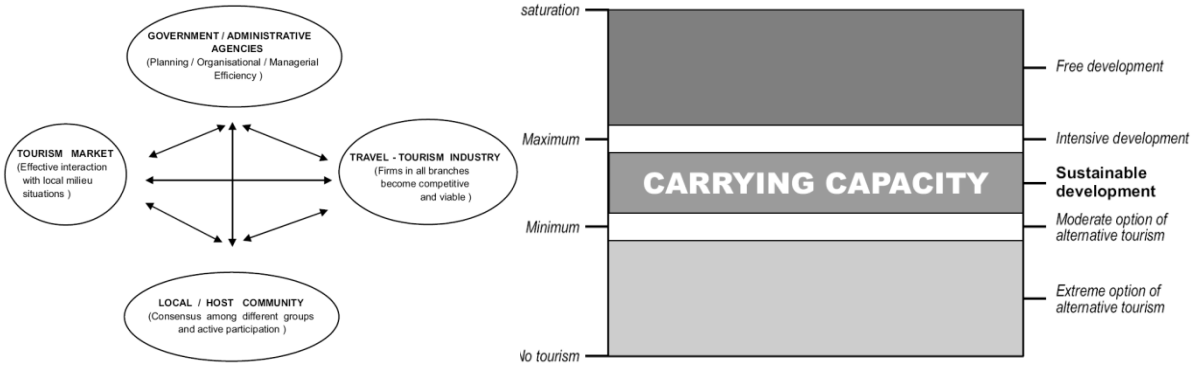
MAP CAMP Project "Cyprus"

Sustainable planning of urban coastal areas

BEST Practice 9 – *Sustainable tourism analysis*

CAMP Cyprus project is based on a ross sectorial approach, aimed at studying the ecosystem and urban transformations, in a view of carrying capacity.





3.10 COASTAL PROTECTION, LAND USE AND LANDSCAPE

3.10.1 ICZM management strategy for the Abruzzo Region - Italy

Overview

The management of a coastal system, as a set of natural environments, implies a correct link between population and environment, natural resources and human labour, economy and ecology.
The economic and social development is based, often unconsciously, on the use of natural resources, particularly water and soil, which are sometimes considered as "primary elements", and other times as irreplaceable elements of "suggestion" (landscapes and environments), often as critical elements to be resisted to (landslides, coastal erosion, etc.).
"Sustainability" can not ignore the need to ensure over time and space the balance of these natural cycles and their capability to guarantee the renewability of resources and the respect for the mechanisms governing its evolution.
The capacity of prevention and management involves the ability to reconcile the organization of spaces and its functions with the environment and the ability to adapt it in an optimal way.
In this perspective, the Abruzzo Region has implemented a series of experiments and initiatives aimed at: improving internal planning processes or as away of scoping potential projects; facilitating decision-making process and projects impact assessment; improving the efficiency of the whole system (prevention and management).
The Abruzzo Region has adopted a strategic approach for the ICZM implementation aimed to create a comprehensive and systematic framework for planning where the various projects are the product of an extensive needs assessment of coastal and environment-related issues and taking into account any aspect of coastal management in terms of actors, resources, conflict and effectiveness.

Partners

APRIambiente Srl on behalf of the Abruzzo Region

Objectives

- Appraisal of the coherence of measures and projects implemented by the Regional Directorate and Maritime Works of the Abruzzo Region with regard to coastal management-related issues
- Definition of a Strategic Plan for the implementation of ICZM
- Identification of tools for a more effective and better use of the projects results
- Development of a set of Communication tools for the regional strategy.

Themes and key approaches

- *SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space and to promote a sound use of the environment and natural resources*
- *SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment and improving competitiveness*

Methodology and tools

Analysis of the institutional and regulatory framework for the definition of strategic needs for coastal protection.
Planning activities aimed to achieve concrete results in addressing coastal and environment-related issues emerged from the assessment of needs.

Tools

- Context analysis, collecting and deepening the documentation, in particular with regard to:
  - main participating parties
  - relevant regulations
  - planning documents adopted

  - applicable requirements of regional, national and European laws
  - closed and on-going actions and interventions
- Definition of communication policies and procedures
- Development of a communication strategy
- Revision and validation of the identified guidelines with the Directorate of Maritime Works and Spatial Management
- Elaboration of the Strategy Report and communication to the public.

Achieved results

Strategies for the regional coastal management and protection have been jointly designed with the Abruzzo Region to be: an evolving guide for planning actions and control activities in the area of coastal environmental protection, the basis for any involvement of local authorities and stakeholders in the planning phase and for the accountability of results towards institutional stakeholders, social partners and the Community.

Lessons to learn

Success factors

- Definition of strategic development policies and objectives, through an integrated management of environmental, economic and social aspects for a more effective and efficient protection of coastal areas.
- Involvement of local and regional authorities for the implementation of an integrated coastal zone management approach.

Fail factors

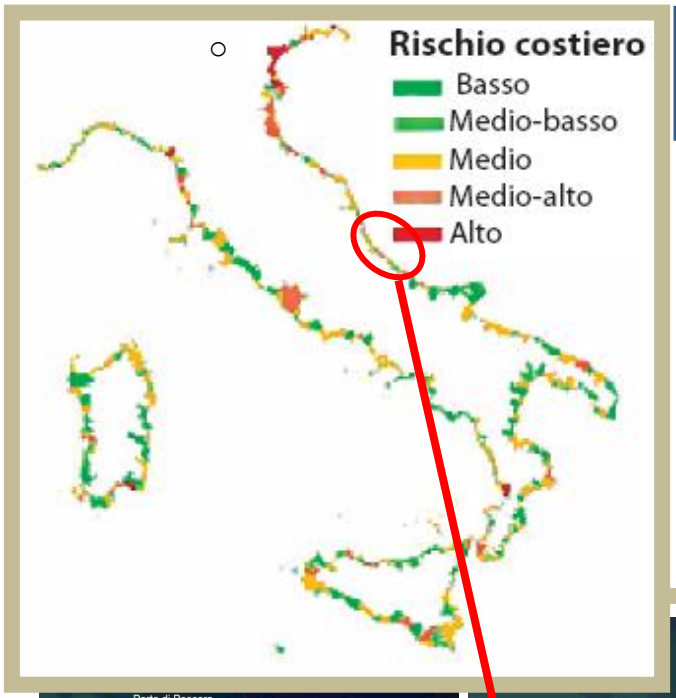
- The integrated approach to coastal management is a long-term activities that requires regular assessments and reprogramming phases for the achievement of its objectives

Replicability

This best practice is replicable by all regional authorities operating on a wide area and intending to elaborate a framework for the involvement of local communities and economic and social actors.

Adriatic context where the BAT could be applied

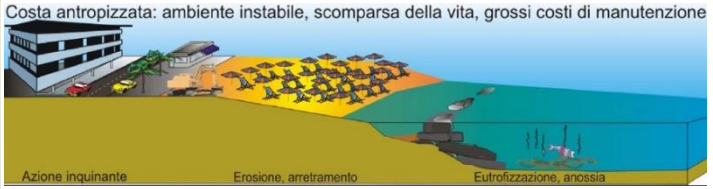
- Western and eastern Adriatic regions



ICZM strategy management for the Abruzzo Region - Italy

BEST Practice 10 – COASTAL PROTECTIO, LAND USE AND LANDSCAPE

Strategies for the regional coastal management and protection have been adopted by the Abruzzo Region to be: an evolving guide for planning actions and control activities in the area of coastal environmental protection and the basis for any involvement of local authorities and stakeholders in the planning phase and for the accountability of results towards institutional stakeholders, social partners and the Community.



comune	abitanti	Superficie in km²	ml di costa	sedimento
Provincia di Teramo:				
1- Martinsicuro	13.428	14.3	6040	sabbiosa
2-Alba Adriatica	10.389	9.59	2720	sabbiosa
3-Tortoreto	7.836	23.0	3880	sabbiosa
4-Giulianova	21.400	27.3	4340	sabbiosa/ciottolosa
5-Roseto	22.978	52.8	10230	sabbiosa
6-Pineto	13.095	37.7	9400	sabbiosa/ciottolosa
7-Silvi	14.478	20.4	6720	sabbiosa
Provincia di Pescara				
8-Citta S.Angelo	11.952	62.0	460	sabbiosa
9- Montesilvano	40.700	23.4	4521	sabbiosa
10-Pescara	116.286	33.6	7080	sabbiosa
Provincia di Chieti				
11-Francavilla	22.883	23.0	7740	sabbiosa
12-Ortona	22.694	70.2	11080	cottolosa/rocciosa
13-San Vito Chietino	4.901	16.8	3680	cottolosa/rocciosa
14-Rocca S. Giovanni	2.352	21.5	3590	rocciosa
15-Fossacesia	5.349	30.2	4400	ciottolosa
16-Torino di Sangro	3.079	32.3	5760	ciottolosa/sabbiosa
17-Casalbordino	6.478	45.9	3700	sabbiosa
18-Vasto	35.362	70.7	15830	rocciosa-sabbiosa
19-San Salvo	17.254	19.5	3600	sabbiosa
Totale investimento S.I.Co.R.A.	407 € pro capite)	203.779 € per km²)	1.347.826 € per km lineare	

3.10.2 Certification and sustainable development of coastal municipalities in Abruzzo Region through EMAS registration – ETICA - Italy

Overview

The coastal tourism is the major economic activity of the Abruzzo Region during the summer season. The Abruzzo coast, in particular the Teramo coast, multiply its population in summer and, through a system of articulated entrepreneurial small businesses - receptive structures, bathing establishments, different services for tourism, etc. - generates a significant proportion of the regional income product.
The main negative consequence are a strong pressure on the coast and the Adriatic Sea, not supported by an adequate management of the environmental services, and an increasing burden on the natural environment.

Ancient dune systems, largely replaced by tourism services, hardly resist in a worsen environment:nesting sites of rare endemic species were reduced, while the pollution load definitively increased in the last decades.

Partners

European Commission (Life environment Programme), Abruzzo Region, Province of Teramo and the related 7 coastal municipalities: Martinsicuro, Pineto, Roseto, Silvi, Tortoreto Alba Adriatica, Tortoreto, APTR, association of bathing establishments, technical partners a such as: APRIambiente, COGECSTRE and Team srl; EU partner In Lotoys – Greece.

Objectives

Promote the environmental quality of the Teramo coast, in the frame of the Regional ICZM Planning for a sustainable and environmental friendly management of the tourist services.
Promote the awareness on sustainable management of the tourism flows.
Support the municipalities during the EMAS registration.

Themes and key approaches

- *SUSTAINABLE USE OF RESOURCES: Preserving coastal environment during major tourist flows and improvement of environmental services.*
- *SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment and improving competitiveness with the involvement of local businesses.*

Methodology and tools

Expert advice and continuing support to the coastal municipalities in implementing an Environmental Management System to obtain the certification ISO 14000 and the EMAS registration.
Diffusion of a sustainability culture among the administrative authorities and the economic actors aimed at ensuring the operation of the Environmental Management System after project's termination.

Tools

- Systematic survey of the environment: quality of sea water, air, noise, emissions and waste. The high quality of sea water is an important asset for the Teramo Coast and the Abruzzo Region since all municipalities obtained the "Blue Flag"
- Improvement of investments and structural interventions (eg treatment plants, waste management, emissions reduction, etc..)
- Round-tables and shared planning by involving the main business associations (bathing establishments, hoteliers, restaurateurs, associations , etc.)
- Training for municipal officers and representatives of business associations on sustainable development
- Recovery of facilities, landfills, and existing buildings and energy saving measures
- Marketing strategies to enhance the growing environmental quality of the Teramo coast

- Identification of visitor segments appreciating touristic places oriented towards the environmental sustainability, in terms of reduced negative environmental impacts, existingquality certification, and the adoption of an environmental management systems (ISO 1400:00, EMAS system)
- Environmental and economic analysis of the investments oriented towards a sustainable tourism.

Achieved results

- Identification of shared objectives to be included in a sustainable development strategy for Tourism
- 5 municipalities (Martinsicuro, Pineto, Roseto, Silvi, Tortoreto Alba Adriatica, Tortoreto) certified ISO 14000; 2 municipalities (Silvi and Martinsicuro) registered with EMAS
- Sustainability-oriented culture in private and public sectors
- Design and implementation of a project Website (www.eticalife.org).

Lessons to learn

Success factors

- Existence of ICZM strategies strongly contributes to boost local planning processes, projects origination and concrete actions towards sustainability.
- Commitment to invest in local environmental quality is easier achieved through concrete collaboration, based on a continuing dialogue and sharing of plans and programs, between public and private actors .
- Involvement of Business Associations in the planning process can improve the willingness and capacity of the SMEs to invest money and time in concrete actions for local environmental protection and sustainability of their businesses.

Fail factors

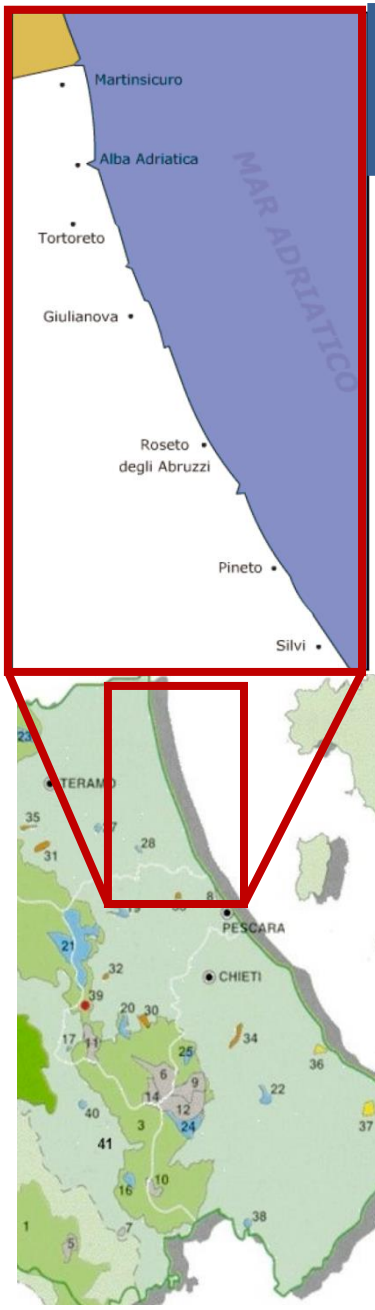
- Lack of regional resources to support the municipalities in monitoring
- Lack of qualified resources addressed to the environmental management

Replicability

All western and eastern Adriatic regions are interested in developing tourism. This, requires knowledge and tools to maintain a sustainable environmental management for the protection of their natural resources. The project has been selected as a best practice since methodologies and tools used by the Abruzzo Region can be easily exported in other Adriatic coastal areas, particularly in areas where mass tourism can produce negative impacts on the environment.

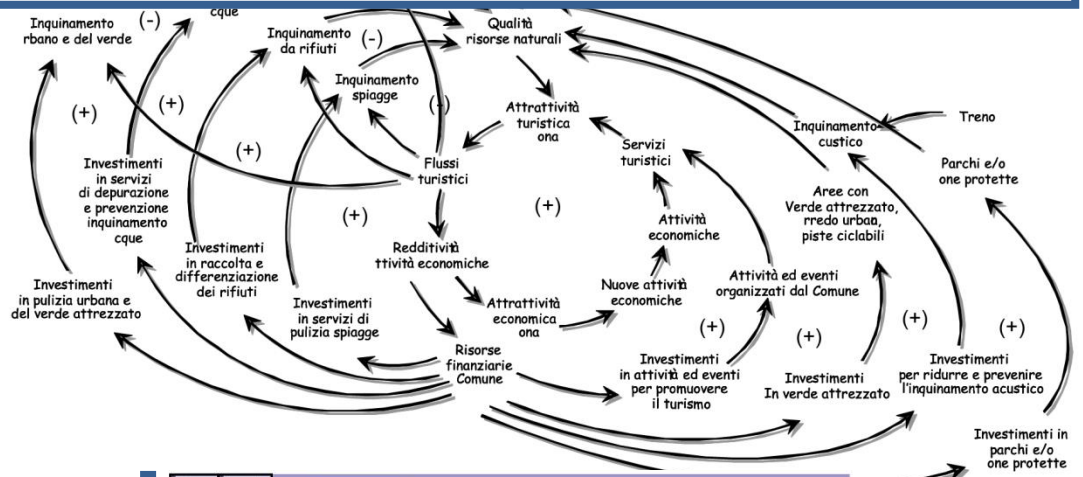
Adriatic context where the BAT could be applied

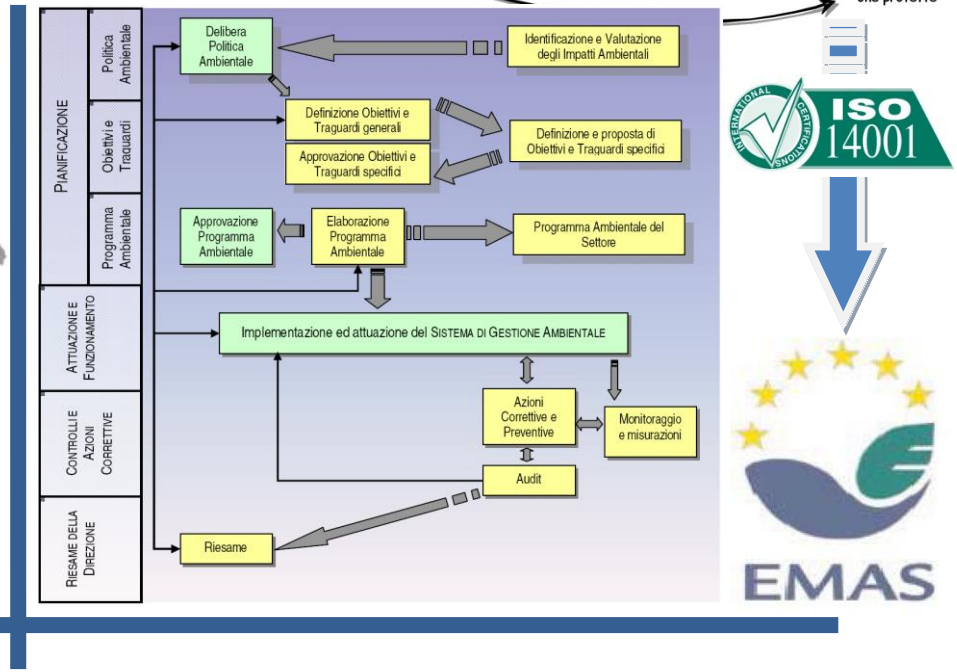
Eastern Adriatic – Croatia, Montenegro, Albania.



ETICA project - **Italian Adriatic coast**

Best practice 11 - Support to coastal municipalities in implementing an Environmental Management System to obtain the certification ISO 14000 and the EMAS registration.





ISO 14001

EMAS

eticalife.org

Emas for Tourism in Internal and Coastal Area

3.10.3 ICZM pilot actions in the coastal area of Ferrara, Ravenna, Forlì-Cesena & Rimini – Emilia Romagna Region - Italy

Overview

The Emilia Romagna coastline measures about 130 km in length from the mouth of the Tavollo stream to the mouth of the Po di Goro, and is characterised by several sandy and low beaches. The coastal dynamics are strictly related to the complex interaction among different factors such as sea level rise, meteo-climatic changes, fluvial sediment supply, subsidence, and strong human activities. The fragmentation and low co-ordination between planning instruments and territorial competences is a relevant problem to solve, especially regarding the coastal and marine areas.

In line with the objectives of the EU Recommendation on ICZM, the Council of the Emilia Romagna Region adopted ICZM Guidelines by Act n.645 of 20 January 2005. These Guidelines aim to address the activities affecting the physical coastal system towards economic, social and environmental sustainability throughout an integrated and cross-sector approach (horizontal relationship between diversified sectors, and to governance carried out at different level of territorial competences: local, regional, national). To this end the Regional Council approved 18 pilot projects, presented by the following provinces: Ferrara, Forlì-Cesena, Ravenna and Rimini.

The issues involved in this integrated approach are articulated in main thematic topics, such as:

1. Physical coastal system, risk factors and protection strategies;
2. Pollution, water resource management and monitoring;
3. Ports, ship wastage and sea transport risk;
4. Habitat, biodiversity and landscape;
5. Tourism;
6. Fishing and aquiculture;
7. Energy policies;

Partners

Emilia Romagna Region - Italy

Objectives

Promote a sustainable development of coastal and marine areas, including their specific ecological, economic and social features throughout the elaboration of guidelines indicating the main fields of activity and the type of actions that should be realised.

Themes and key approaches

- ADAPTATION TO RISK: Integrating coherent strategies covering the risk-dimension into planning and investment
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment and competitiveness support

Methodology and tools

Involvement of regional and local public authorities as primary players in implementing ICZM Guidelines. Creation of an Institutional Committee, composed by local territorial representatives (regions, provinces and municipalities) and publication, in 2005, of ICZM guidelines (Law No. 645, 20/01/2005) and subsequent implementation of the first investment through the approved 18 pilot projects

Tools

- Concertation at province and municipal level. Once the Guidelines were adopted, the Regional Council invited “coastal towns and provinces, acting as part of the Institutional Committee for

Integrated Coastal Zone Management, to adopt and approve the guidelines and their own institutional organs to put them into practice.

- Approval of the 18 pilot projects, for about 8M€, in the provinces of Ferrara, Rimini, Ravenna and Forlì-Cesena, related to different strategic sectors: coastal protection, water pollution, biodiversity and landscape conservation, fishing and aquaculture activities, energy production and transport sustainability.

Achieved results

All projects are characterised by an innovative, multi-disciplinary and integrated approach. They fully respect the remit of the ICZM Guidelines and represent a first step towards their concrete implementation.

Lessons to learn

Success factors

- Involvement of Local authorities guarantying an integrated overview of the implementation of ICZM guidelines.

Fail factors

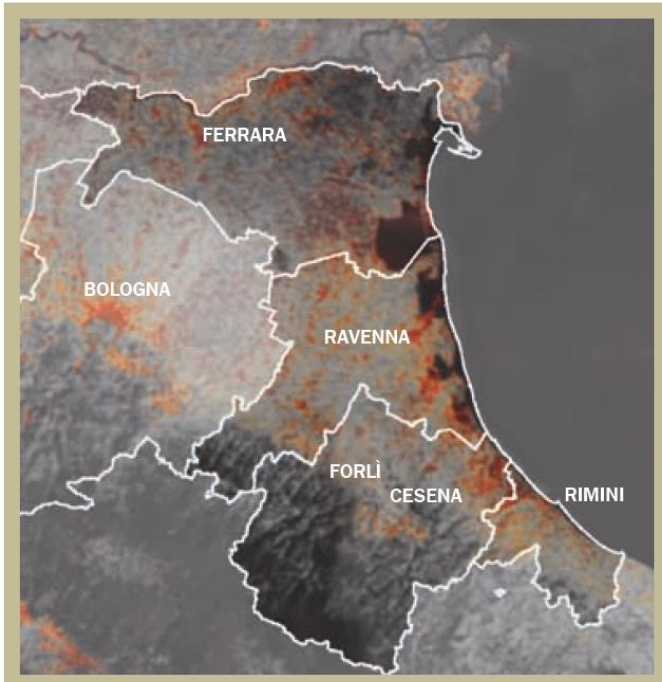
- The integrated approach is a long-term activity with implications, in some cases, prolonging the achievement of the established goals.

Replicability

Coordination among different levels of governance is a prerequisite for the implementation of innovative projects on strategic socio-economic topics. This project could be replicated in all countries with a good level of inter-institutional dialogue and public-private partnerships.

Adriatic contexts in which the BAT could be applied

East and West Adriatic Regions
Local authorities



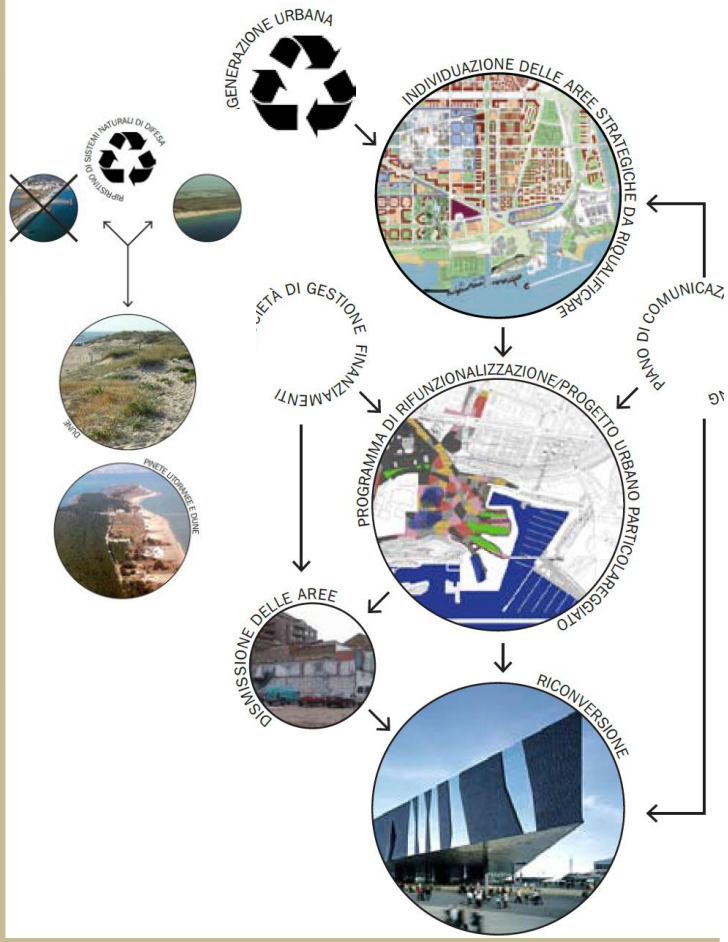
ICZM pilot actions in the coastal area of Ferrara, Ravenna, Forlì-Cesena & Rimini – Emilia Romagna Region - Italy

BEST Practice 12 – *Coastal protection, land use and landscape*

18 pilot projects, in the provinces of Ferrara, Rimini, Ravenna and Forlì-Cesena, related to different strategic sectors: coastal protection, water pollution, biodiversity and landscape conservation, fishing and aquaculture activities, energy production and transport sustainability.

Adoption of an ICZM Plan for the environmental sustainability of all activities along the Emiia Romagna coasts.

GESTIONE INTEGRATA ZONE COSTIERE








3.11 SUSTAINABLE TOURISM

3.11.1 CAMP Costal area Management Programme – Slovenia

Overview

A strategy for the sustainable development of tourism was developed between 2004–2006 by the Regional Development Centre in Koper which covers the territory of eight municipalities of the Coast-Kras region spanning over 1,500 km2, specifically in South Primorska – the only Slovenian coastal region. Although only 46 km long, the coastal zone is of enormous national value and it is of great strategic importance from an economic, natural and cultural point of view.

With respect to tourism, there is a still modest level of employment in tourism with regard to the potential of the region: lack of highly trained management personnel, inadequate educational structure, lack of attractive jobs and an orientation towards seasonal work, search for personnel in other Slovenian and foreign regions and sectors.

There are infrastructural and environmental difficulties e.g. waste water drainage and treatment, solid waste management, management of protected areas, drinking water resource management and pollution of coastal waters.

On these basis, local authorities adopted a tourism development strategy based on the preservation and enrichment of biodiversity of the region whose potential is declining because of increased settlement in the narrow coastal zone, pollution of water from urban wastewater and agriculture and drainage of wetlands.

Incorporation of cultural resources into tourism product and the support for the development of a cultural tourism (e.g food and wine, cultural theme paths and events) as well as capitalising more on cultural heritage asset represent a great potential for the development of a sustainable tourism in the Region.

Partners

The Ministry of the Environment and Spatial Planning , Regional Development Centre Koper, Local authorities.

Objectives

Elaborate, in co-operation with tourism actors, a joint vision, objectives, strategy and regional programme for sustainable development of tourism. to preserve regional authenticity but improve quality and provide long-term international competitiveness for the destination, raising incomes.

Themes and key approaches

- *SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space and sound use of resources*
- *SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment and improving competitiveness*

Methodology and tools

The Ministry of the Environment and Spatial Planning is responsible for overall co-ordination, management and supervision of CAMP – Coastal Area Management Programme for Slovenian Coast.. A steering committee and advisory Board have been appointed and the work is carried out by a project co-ordinator within the Regional Development Centre Koper.

Tools

- Improvement of tourism infrastructure: investments of:
  - smaller tourism providers, especially guesthouses and boarding houses in the countryside, construction of cycling and walking paths,

  - construction of facilities in combination with man-made and natural sites of special interest (attractions) in touristically less developed areas, to ensure additional tourist and other information signalization,
  - renovation of existing buildings and cultural heritage for the purposes of tourist services.
- Development and marketing of new tourist products and services, including:
  - promotion of new tourist products and strengthen the marketing of "experience/emotion" instead of "material" offer,
  - establishment of joint marketing (overcoming the local fragmentation), introduction of modern communication and marketing channels, more financial resources for marketing.
- Promotion of high-quality tourism and reduction of environmental impacts: raising of quality of the existing tourist products, services and infrastructure (obtaining quality certification, establishing trademarks…), introduction of environmental standards and codes, such as blue flag, environmental codes, the European eco label and the systems of environmental management: ISO standards 140000, EMAS scheme (improvement in environmental performance of organizations and providing the public with the relevant information).
- Partnership for sustainable development, throughout:
  - cooperation of tourist actors in public affairs which are important for the quality of tourist destination: spatial planning; planning of the public open spaces and greenery; sustainable mobility; establishment of the sustainable development indicators, on the basis of carrying capacity assessment for tourism;
  - cooperation in the field of employment, training and education for tourism, joint awareness-raising actions for target groups.

Achieved results

- Definition of a vision, goals and a strategy of tourism development in the regionharmonised with the principles of sustainable development and the environment carrying capacity as assessed on the basis of selected indicators.
- Elaboration of a programme of a coastal area management in Slovenia, serving as a basis for the implementation of priority activities and projects in the 2007-2013 programming period, in co-operation with the State, the Municipalities and other key actors in the South Primorska region.
- Drawn up of a programme of key measures for the coming programming period 2007–2013.and integrated into the Regional Development Programme.

Lessons to learn

Success factors

- Strategic policies and development objectives required and harmonised, connected to an efficient system for the implementation of tourism development.
- Support of residents and small tourist providers with adequate additional (voluntary) activities to ensure an affirmative image of the tourist destinations and positive relations with the tourist visitors.

Fail factors

- Absence of an efficient tourism development organisation at regional level - the so-called regional tourism (destination) management organisation
- A non favourable economic situation after the adoption of the strategy, which is critical in the tourist industry on the Slovenian coast, It does not enable the realisation of ambitious projects in the framework of sustainable tourism.

Replicability

All west Adriatic regions are characterized by a more advanced development of tourism than the Eastern ones. However, some tools adopted for the implementation of this best practice can be easily exported and of

inspiration in west Adriatic tourist contexts especially in small local areas and regions not yet affected by mass tourism.

Adriatic contexts in which the BAT could be applied
Eastern Adriatic regions – Croatia

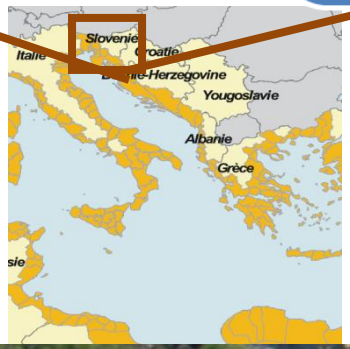
CAMP Slovenia - Coastal Area Management Programme

Best practice 13

Sustainable development of tourism and new governance tools

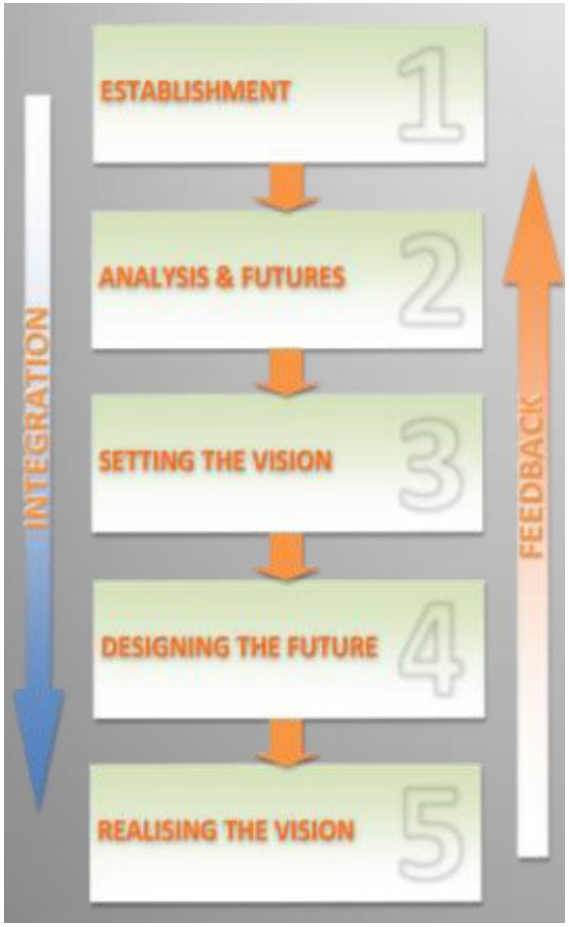
Overall Objective:

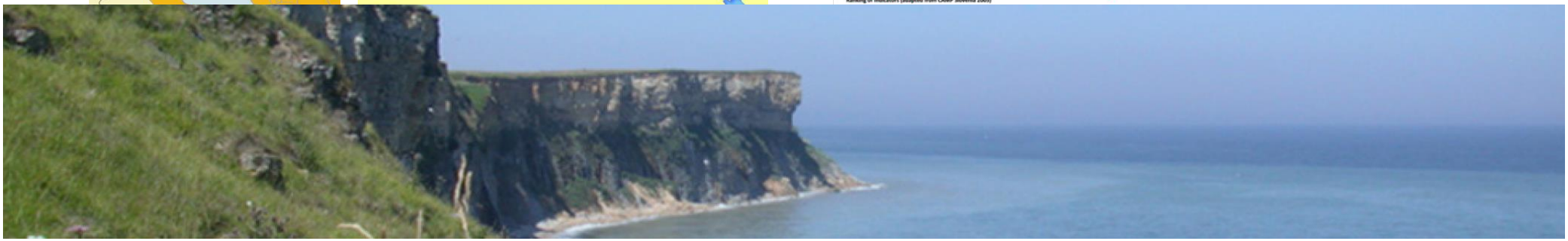
support, facilitate and propagate efforts towards integrated management in the project area to provide for environmental protection and sustainable development



Specific objectives

- to facilitate the transfer of knowledge on ICZM tools and approaches.
- to create necessary mechanisms that can help achieve SD of the coastal area
- to build national and local capacities for ICZM and raise awareness
- to support implementation of national policies and ICZM Protocol
- to promote integrated and participatory planning and management in the coastal area





3.11.2 Spatial development of the South Primoska Coast - Slovenia

Overview

The main economic activity of the South Primoska Coast is tourism: where properties in South Primorska are among the most expensive in Slovenia, its prices rising constantly due to the demand for holiday homes.
However in the coastal area of the South Primoska, there has been under-investment in existing urban centres and larger settlements resulting in a decrease in the quality of life (e.g. social stratification, environmental problems: increased traffic congestion, poor developed Public transport) all infrastructures not able to support the national and the international demand of mobility, with scarce drinking water and waste management .

Furthermore climate changes also has had to be considered with sea level rise (estimated at 1 mm/year) with consequent greater risks of more frequent flooding of low-lying parts of coastal towns.

Partners

The Ministry of the Environment and Spatial Planning, local authorities, Regional Development Centreof Koper.

Objectives

- Establish a vision and concept of spatial development in the region.
- Formulate a regional concept of the distribution of selected spatial activities.
- Prepare spatial development guidelines to form the basis for strategic national and municipal planning documents.
- Possibilities of co-operation with the neighbouring regions within Slovenia, within the EU (Italy), and with the regions in non-member countries (Croatia).

Themes and key approaches

- ADAPTATION TO RISK: Managing impacts of climate change and safeguarding resilience of coasts/coastal systems
- SUSTAINABLE USE OF RESOURCES: Preserving coastal environment (its functioning and integrity) to share space and sound use of resources
- SUSTAINABLE ECONOMIC GROWTH: Balancing economic, social, cultural development whilst enhancing environment and improving competitiveness.

Methodology and tools

The Slovenian Ministry of the Environment and Spatial Planning is responsible for overall co-ordination, management and supervision. A steering committee and advisory Board have been appointed and the work is carried out by a project co-ordinator within the Regional Development Centre of Koper.

Tools

- Elaboration of a spatial development strategy for South Primorska based on the co-operation between the municipalities, the State and other partners, and on cross-border co-operation with partnerships between public and private sectors to support sustainable welfare, equitable distribution and high quality of life, whilst protecting and strengthening natural, spatial and cultural goods.
- Spatial development will be based on a three-tier network of settlements designed to promote
    - intensive changes in strategically significant urban centres leading to increased competitiveness in the broader EU area,
    - changes in more important local centres and settlements,
    - small-scale changes in other settlements.

- Development of economic activities, economic zones adequately regulated. In addition to socio-economic conditions, spatial criteria will be taken into consideration during the planning phase as: transport and energy networks, the size of settlements, spatial opportunities and limitations arising from the state or characteristics of the natural and cultural landscape.
- Strengthening of the sustainable character of tourism development through integrated management of the destination and the improvement of the existing tourist products, services and investments in tourist accommodation and support infrastructure. This entails reducing the environmental impacts of tourist activities through a more even spatial distribution of tourist capacities.
- Sustainable mobility to establish an efficient and competitive system of public transport, while at the same time improving the accessibility of transport services for a wider circle of users (e.g. cyclists).
- Definition of a Water Plan taking into account the water needs for the region as well as the regulation of discharge and treatment of urban wastewater (Future regional spatial development plan will ensure that the restrictions arising from water protection requirements are adequately compensated by various development incentives). It includes flood areas in certain rivers and sea floods on a narrow coastal strip as well as those areas subject to erosion.

Achieved results

- Definition of common objectives for the spatial development
- Drawing up of a programme of key measures and integrated into the Regional Development Programme for the period 2007–2013.
- Elaboration of a programme of coastal area management in Slovenia, serving as a basis for the implementation of priority activities and projects in the 2007-2013 programming period, in co-operation with the State, the Municipalities and other key actors in the South Primorska region.

Lessons to learn

Success factors

- An assessment of Environmental Impacts positively affecting i.a. the sustainable use of natural resources, the improved status of surface and ground waters, the improved access to social services.
- Integrated approach between institutional levels and between public and private sectors.

Fail factors

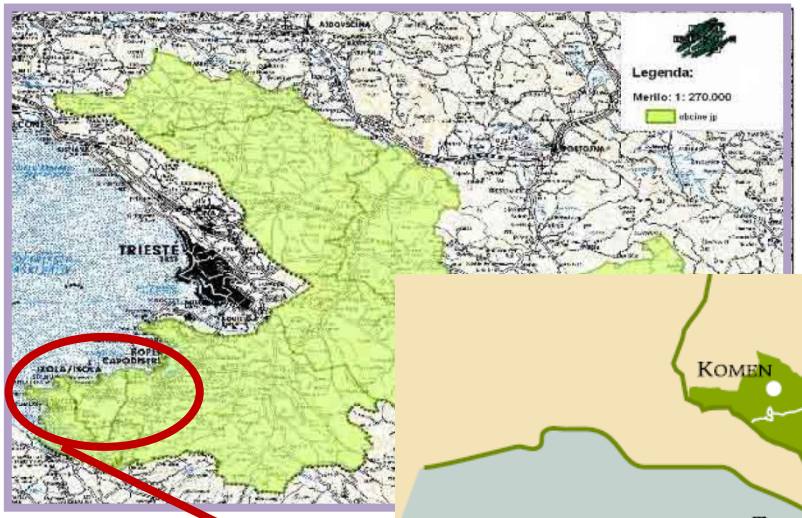
- Negative effect on industry through measures taken to reduce water loss, deterioration of the sea due to the foreseen increase in maritime transport and a threat of increased noise emissions resulting from the planned construction of traffic infrastructure.

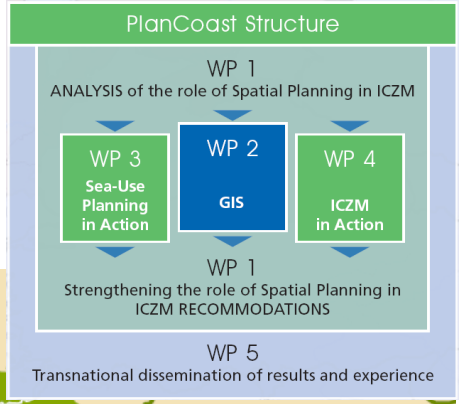
Replicability

The proposed model of spatial development in the Slovenian coastal area is significantly more sustainable compared to the described spatial development patterns in the broader Mediterranean context. The spatial planning, with respect to settlements and infrastructure in concert at different levels of government and with the private sector to set a shared model, facilitates the prevention of major risks resulting from over-exploitation of vulnerable areas such as coastal areas.

Adriatic contexts in which the BAT could be applied

- Contexts characterized by a strong mix of functions (residential, industrial, tourism) such as all regions of the West Adriatic
- Slovenian border Regions (Italy, Croatia).





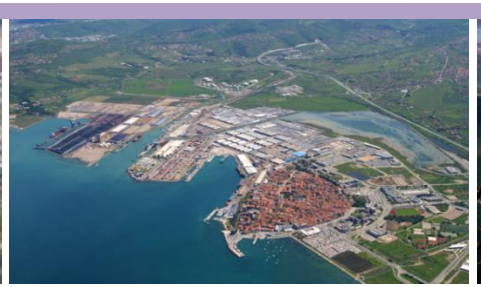
Spatial development of South Primoska Coast - Slovenia

BEST Practice 14 – *Integrated spatial planning for a sustainable tourism*

Establishment of a vision and concept of spatial development in the region. Formulation of a regional concept of the distribution of selected spatial activities. Preparation of spatial development guidelines to form the basis for strategic national and municipal planning documents.

	South Primorska Region	SLO
Population	118.208	1.992.035
Area (km2)	1.524	20.273
Number of municipalities	8	192
Density of population	78	98
Rate of unemployment (%)	9,8	11,7
Value added/employee.(in SIT)*	4.067	3.916
Wages/employee (in SIT)	175	172
Students/1,000 inhabitants	36	33

* The data is valid for the Obalno-kraška region



3.11.3 MAP CAMP Project - Lebanon

Overview

The scope of the CAMP Lebanon extends from the South of Beirut, between Khaldeh and Sour (Tyre). CAMP Lebanon area occupies around 615 km2, or almost 6% of the overall Lebanese territory. However, as a coastline, the study area stretches 85 km, or 33% of the total coastline.

The project area is defined at two levels:

- the national coastal area located to the South of Beirut, the Capital, and
- the three municipalities of Damour, Sarafand and Naquoura, as the operational level

The Lebanese coastal stretch (extends over 210 kms) is characterized by quasi-homogeneity of the environmental problems all along the side with a main concern towards water resource pollution and urban expansion. Most of the coastal urbanization is located to the Northern Beirut, with a high density of industrial zones, private beaches and hotel resorts invading the remaining agricultural lands. The industrial sector is considered as a major source of marine and water sources of pollution. Around 20.000 units are located with many of them having no legal permits or located in industrial zones. Moreover, the scattered distribution of a larger number of industries all over the coast resulted in coastal settlements and lead to the privatisation of public domains and huge construction all along the coast. Tourism is concentrated mainly in Beirut and its surroundings in the form of summer resorts despite of the status of water estimated to be highly polluted. However, the privatisation of beaches and the devastation of the coastal area by huge tourist complexes as well as industrial plants are not helping in designing a sustainable touristic development plans on the coast.
Also the agricultural plots have been gradually replaced by industrial and human development. Woodland vegetation remains in very few coastal areas, including slopes close to Kalb, Damour and Awali Rivers. Freshwater fauna is believed to be suffering from pollution given prevailing pollution of Lebanon's rivers.

Partners

Ministry of Environment of Lebanon and the UNEP

Themes and approaches

The most important environmental problems and issues include the following:

- Lack of comprehensive integrated coastal area management plan and legislation;
- Fragmented and overlapping responsibilities;
- Old legal and regulatory framework;
- Civil Service staff limitations;
- Sprawl of industrial development outside designated industrial zones;
- Encroachment of tourist and urban development on agricultural land;
- Lack of integrated agricultural policy;
- Land and woodlands degradation;
- Sea water pollution from discharge of untreated domestic and industrial wastewater;
- Freshwater pollution risks and public health hazards from open solid waste dump sites;
- Air pollution in and around the main urban centres;
- Diffuse sector-focused external assistance project initiatives;
- Need for technical assistance and capacity building; and
- Project implementation mainly adopts a “top-bottom” approach

Methodology and tools

After the preparatory activities have been finalised the Project Agreement was signed between the Ministry of Environment of Lebanon and the UNEP in April 2001. It defined the basic elements of the project including the project objectives and strategy, structure, its various phases and outputs, the project institutional structure, the

activities to be implemented at project level, the funding and cost-sharing mechanism, the various institutions involved, the general workplan and timetable. In addition, basic elements of individual project activities are defined, as well as the achievement indicators, the monitoring and reporting procedure, and the post project activities to be implemented.

Main project activities consist of:

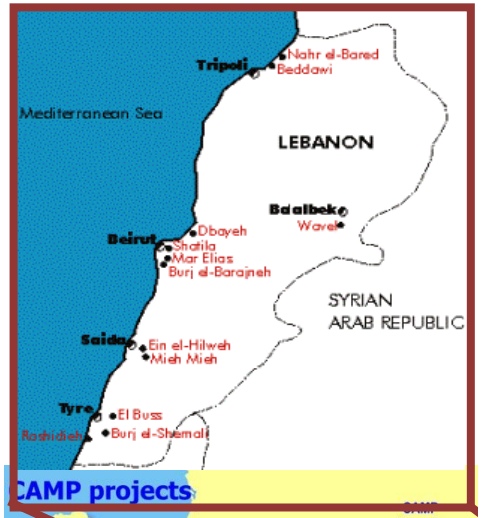
- Identification and Management of an Integrated Coastal Area;
- Data and Information Management;
- Integrated Water Resources Management;
- Development of a Marine Conservation Areas;
- Integrated River Basin Management;
- Development of a Sustainable Tourism;
- Urban Management and Sustainable Development; and
- Participatory Programme.

Expected results
Resource conservation in coastal areas

Lessons to learn
Implementation of CAMP Lebanon will support the national and local-level efforts to appraise coastal resource conflicts and address emerging environmental degradation threats from diverse sources, within the context of a sustainable management strategy that also seeks to promote development objectives and priorities and environmental protection measures.
Implementation of CAMP Lebanon will enable the national and local authorities to align development choices with resource conservation, and pursue development commitments in light of environmental protection requirements.

Replicability
The implementation of the CAMP Lebanon and the definition of a strategy for the coastal management have enabled national and local authorities to align the policies for development with the conservation of resources and the pursuit of development commitments in line with environmental protection requirements.

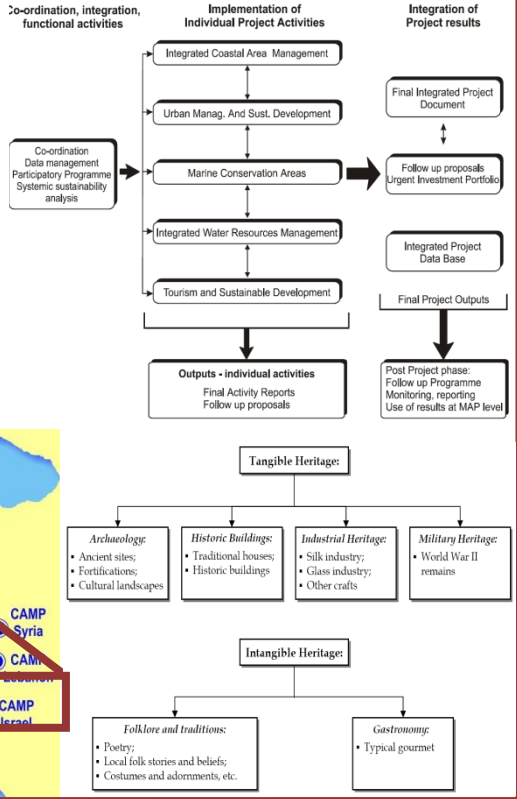
Adriatic contexts in which the BAT could be applied
All Adriatic Regions

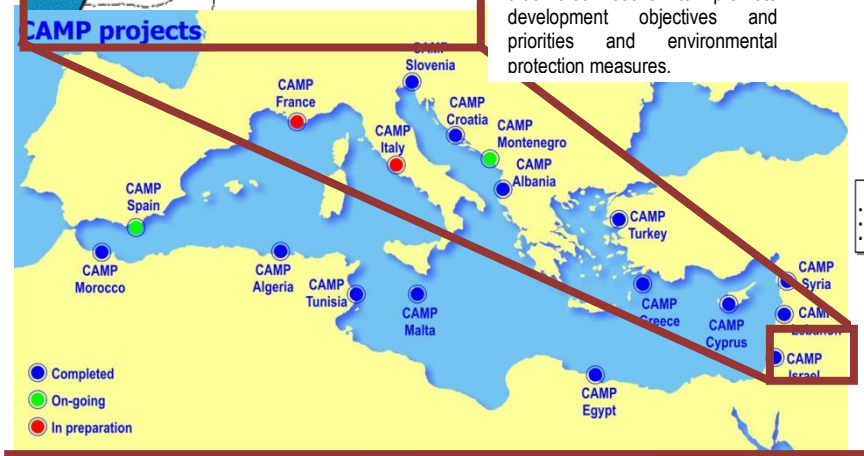


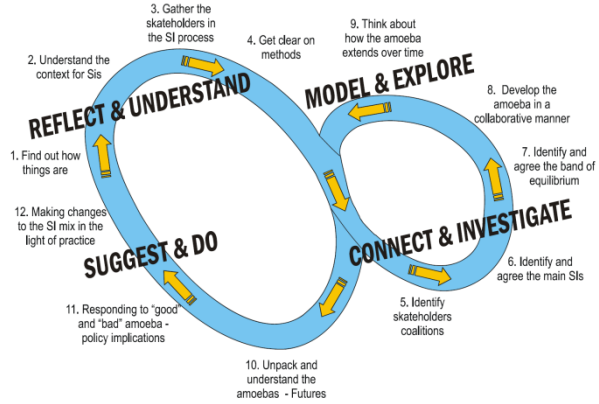
MAP CAMP Project "LEBANON" – Lebanon

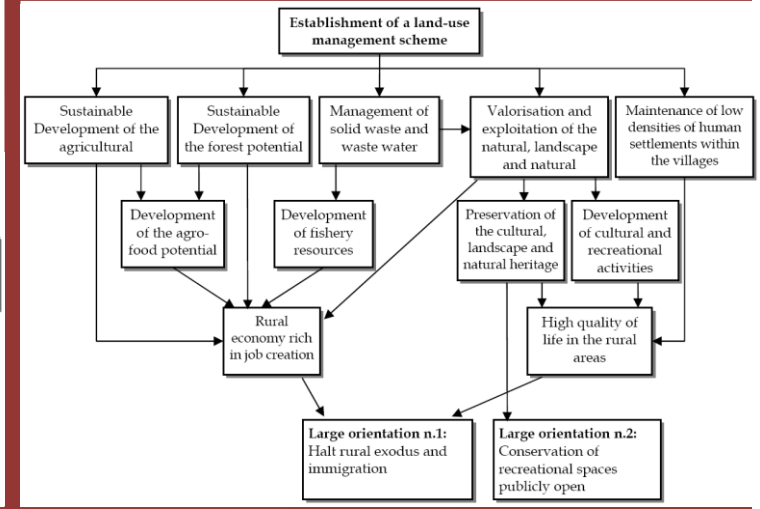
BEST Practice 15 –
Spatial planning and integration for a sustainable tourism

Implementation of CAMP Lebanon will support the national and local-level efforts to appraise coastal resource conflicts and address emerging environmental degradation threats from diverse sources, within the context of a sustainable management strategy that also seeks to promote development objectives and priorities and environmental protection measures.









3.12 INSTITUTIONAL COORDINATION

3.12.1 CAMP "Levante de Almeria" – Spain

Overview

The Contracting Parties to the Barcelona Convention, and the Spanish regional and national authorities agreed at their Ordinary Meeting (Catania, November 2003) to initiate the Feasibility Study (FS) for a CAMP project in the South East coast of Spain. The CAMP Levante de Almeria project area covers over 219,000 hectares of the South Eastern area of the Almeria Province, in Southern Spain. Of that total, 71,000 hectares correspond to the marine area, and 148,122 hectares is terrestrial, which includes the following eight municipalities: Pulpí, Cuevas de Almanzora, Vera, Garrucha, Mojácar, Carboneras, Níjar and Almeria. The limits of the CAMP Levante de Almeria action area will be considered as flexible, considering the convenience of including some adjoining non-coastal municipalities in the resolution of certain issues that influence some aspects of the management of the coastal area (i.e. management of the river basins, pollution, fishing or the urban planning and economic dynamics).

The FS revealed the **weakness of the co-ordination mechanisms** between the different policies affecting the coastal resources, the lack of effective social participation in the coastal-related decision-making processes, and the difficulty of implementing a sustainable management of the coastal areas due to the spreading of the administrative responsibilities. Through the participatory workshops carried out during the FS, the CAMP Levante de Almeria has been conceived as a demonstrative experience to create and put in practice an organisational structural and procedures to articulate co-ordination 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 objectives put forward for the "CAMP Levante de Almeria, are as follow:

- To enhance the co-ordination mechanisms between the different government bodies and the area's social and economic actors for the compatibility and integrability of the policies implemented and the actions carried out.
- To assure administrative co-ordination as the main instrument to guarantee a real integration of environmental policy and the rest of sectorial activities.
- To increase public awareness and participation in the policies and activities aimed at the conservation and the sustainable use of resources.
- To improve the training and capacity building of the area's management teams, the different economic sectors and the local populations to achieve the project's objectives and enable the launch of other initiatives related to conservation and sustainability.
- To enhance the sustainability and compatibility with the conservation of the natural environment of the area's main economic sectors (agriculture, tourism and urban development).
- To make a contribution to the conservation and management of the natural and cultural resources.

Partners

The Regional Ministry of Environment (RMoE) of Andalusia, the Spanish Ministry of Environment (MoE) and the MAP-PAP/RAC.

Themes and approaches

- **Institutional co-ordination and public participation**
- **Preservation of the environment** through environmental information and Education
- **Integration** between governance structures

Methodology and tools

The Institutional co-ordination and public participation framework: CAMP Levante de Almeria is a very good example of how the ICZM process, its technical and governance part, work hand in hand according to their mandate and capacities.

The so called "institutional co-ordination and public participation framework", i.e. the governance structure of an ICZM process, has three levels, namely, the Coastal Council, the Coastal Commission and the Coastal Forum. Its main task is to provide the contents to an inter-administrative co-ordination structure to join together the different sectorial policies, assuring the social participation in the decision-making processes.

The Levante de Almeria Coastal Commission was able to establish at the highest institutional degree agreements of collaboration to undertake the proposed initiatives in an integrated way. The Coastal Commission has also promoted the creation of the Coastal Council (socio-economic agents), and the Coastal Forum, a participatory platform that involves all citizens or associations in order to catalyses debate on the issues addressed during the development of the project through its website, http://www.camplevantedealmeria.com/en/content/camp-levante-de-almeria

The Coastal Commission dimension brings together public authorities from 21 administrations with responsibilities for coastal management in the project area. Within the Coastal Commission, two different segments were identified: the decision-makers and the political representatives. However, it was essential to include the technical segment of the administration. These are the Technical Delegates that form part of the expert groups of the singular projects and are responsible for advising and offering a multi-sectoral viewpoint to the technical consultants running the singular projects, to facilitate the exchange of experiences and knowledge between managers.

Tools

- The Imagine workshops as a tool for scenarios building and indicators is a fundamental node where everybody meets. The overall process is managed on a periodical basis by the project Steering Committee.
- The Singular Projects to make a diagnosis and propose possible solutions over specific issues affecting the Levante de Almeria area (i.e. water resources, waste, sustainable tourism, fishing, etc). proposed by any of the administrations, to be discussed inside the organisational structure of the institutional co-ordination and social participation framework.

Expected results

- Definition of a long term sustainable development framework to guide the development of the Levante de Almeria coast
- Establishment of the Commission and of the Council of coast for the coordination and integration between key stakeholders and authorities in the field of ICZM and other important actors

Lessons to learn

Success factors

- Definition of a Sustainable Development Reference Framework as a long-term document to guide the development of the CAMP area that involves eight municipalities of the Levante de Almeria region.

- Establishment of the Coastal Commission and Coastal Council, both being important for a better co-ordination and integration among the main stakeholders and authorities on ICZM issues and the others important for the participation process.
- Harmonious running of the project thanks to an efficient Project co-ordination, integration and dissemination of results

Fail factors

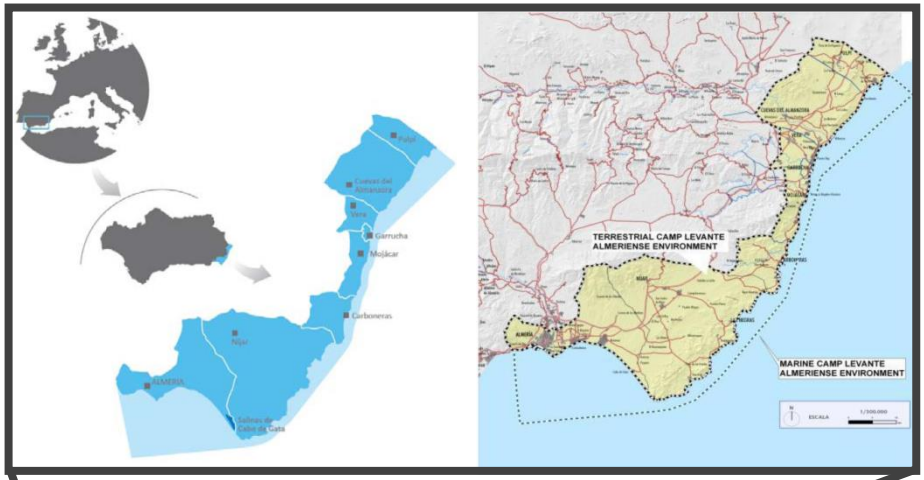
- lack of professional skills, especially among the administrations technical staff, focussed to the specific needs integrated coastal area management (i.e. too much specialisation and uniformity in sectorial aspects of the organisations;
- lack in integrated management social abilities such as negotiation techniques, conflict solving, co-ordination and co-operation mechanisms, social participation and communication techniques, etc;
- lack of general knowledge of the coastal environments to complement each sectorial activity and favour the comprehension of the other activities).

Replicability

The large number of participants involved in the project at national, regional and local level, the efficient project coordination, the significant involvement of the general population through the participatory processes, the training and communication activities, and through the project webpage are undoubtedly valuable experiences to be replicated for the creation of similar organisational structures in other context, promoting this way a true implementation of the ICZM

Adriatic contexts in which the BAT could be applied

All Adriatic Regions

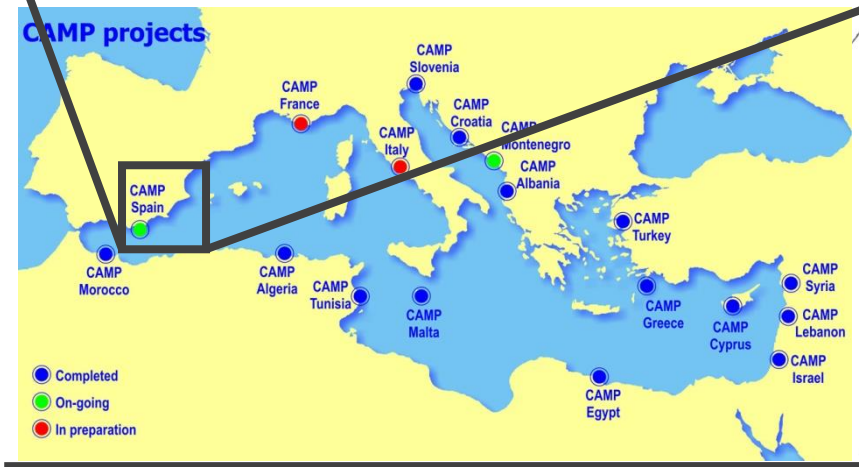


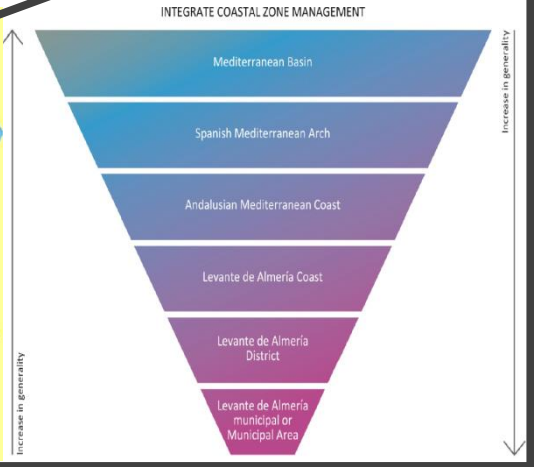
MAP CAMP Project "Levante de Almeria"

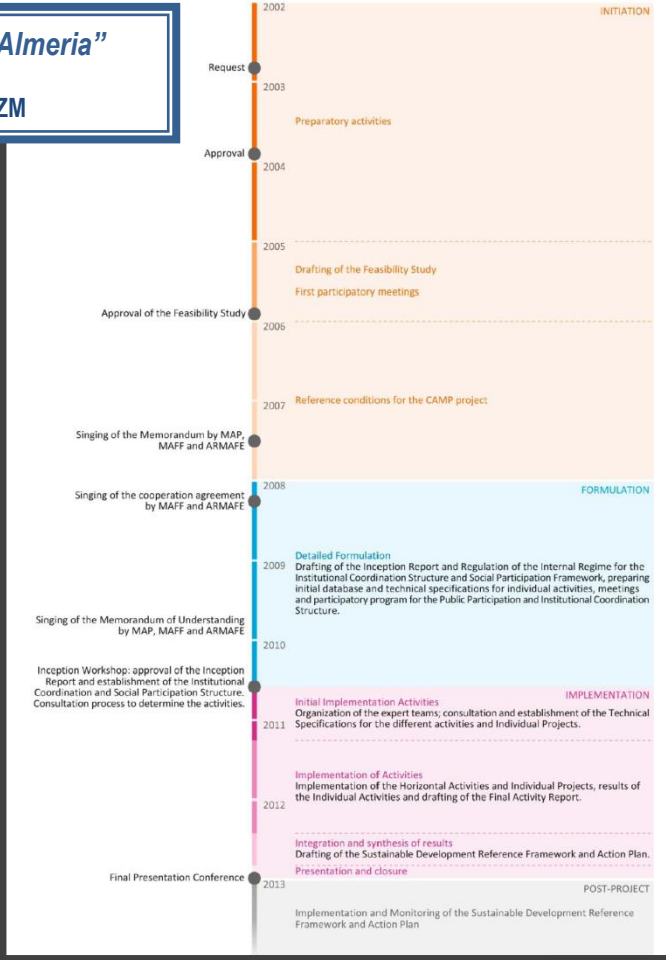
New eco-governance models for the ICZM

BEST Practice 16 – *ICZM frame work*

Definition of a Sustainable Development Reference Framework as a long-term document to guide the development of the CAMP area that involves eight municipalities of the Levante de Almeria region







4 SECTION IV - BEST PRACTICES AND ADRIATIC REGION SCENARIO

4.1 CRITICAL ISSUES AND INDICATIONS EMERGED BY THE BEST PRACTICES

The study and the analysis of the selected Best Practices provides an overview of the main Adriatic region problems with respect to the identified priority themes, the integrated management of coastal zones as well as to success and repeatability factors applicable in the Adriatic macro-region.

The selection of the best practices of the Adriatic Book and the consultation with the partners led to a choice of 16 best practices, summarized as follows:

- With respect to the geographical criteria of selection:
  - 9 of the identified Best Practices are located in the Western Adriatic;
  - 2 are located in the Eastern Adriatic;
  - 5 were chosen outside of the Adriatic Region.

- With respect to the identified priority themes:
  - 38% of the selected Best Practices are related to the Coastal protection, Land use and Landscape (3) and Sustainable Tourism (3)
  - 25% are related to Climate Change (2) and mobility, land use (2)
  - other themes are represented by one Best Practice.

The identified actions are both structural (Climate Change, Fisheries and Aquaculture, Protection of habitats, Energy Policy) and related to planning and programming tools (Construction and Urban Planning, Coastal defence, Mobility and Planning, Sustainable Tourism) as well as with a transversal approach (Institutional Coordination).

Subjected to the evaluation of the SHAPE partners, the work has been judged positively, both with respect to the identified themes and with the practices relating to as well as for their repeatability in similar environmental, physical or socio-economic areas.

The main critical issues are summarized in the following table:

Critical issues	Intervention Areas	Priority Themes
Polluting activities along the coasts	Sustainable planning of infrastructures along the coast	Coastal protection, Land use and landscape
Inadequate planning of intermodal infrastructures	Sustainable Planning of Ports	Mobility planning
expanding use of natural resources	Defence and mitigation of climate change effects	Climate changes
Concentration of livestock facilities along the waterways	Management of the environmental protection and biodiversity and the	Water monitoring and control networks

Increase in civil settlements and productive	needs of human presence	Construction and Urban planning
Construction of power plants in valued areas		Energy policies
Agriculture with a strong use of chemicals		Protection of habitats (Coastal Parks), and biodiversity and establishment of "Areas of biological protection"
Increase in fishing		Fishing and aquaculture
Concentration of the mass tourism	Planning for a sustainable tourism	Sustainable tourism
Absence of a common legislative framework for the Adriatic Region	Cross border cooperation initiatives	Institutional coordination

The analysed strengths of each best practice highlight such as inter-institutional cooperation, consultation with stakeholders and the research of innovative solutions, increasingly compatible with the environmental problems of the Adriatic coasts, are often a guarantee of success of the main projects both in terms of protection and preservation and for the sustainable socio-economic development of strategic areas.

The joint analysis of weaknesses and strengths of the selected best practices, summarized in the "lessons to learn", allows an assessment of possible scenarios of evolution of the Adriatic region and the definition of few key points or guidelines for the practical application of an integrated management of coastal zones approach at the macro-regional level.

4.2 BASELINE SCENARIO OF THE ADRIATIC REGION

In light of the performed context analysis, the identified priorities themes for the sustainable development of the Adriatic region coastal areas and best practices relating to, it is possible to define the baseline scenario of the Adriatic region, from which analyse possible development scenarios.

As outlined in the initial analysis, the Adriatic region is a unique and highly interdependent system, both in terms of environmental and socio-economic development. The context analysis highlighted that toward a very vulnerable Adriatic region from an environmental point of view, current and future trends lead to a **pressure intensification on the coast** (maritime transport, urbanization of the coastline, beach tourism, intensive agriculture and fisheries), which, while contributing to economic and employment growth of the area, need to be included in a clear operational and legislative framework enabling the **sustainable growth** of the Adriatic region, and involving not only local authorities but also States, currently without a clear ICZM strategies.

The European strategy for the Adriatic region aims to connect and protect the territories: connecting the territories of the Macro-region to promote the sustainable development and at the same time protecting the fragile marine and coastal environment.

The existing European strategies for the Adriatic-Ionian macro-region should constitute an ideal axis between North and South, and be fully compliant with the EU policy (in particular the Europe 2020 strategy) on

development, growth and stability. The maritime dimension and the integrated management of coastal zones is central in every issue affecting today the Adriatic-Ionian macro-region, including the protection and conservation of the environment, energy, climate change, research and innovation, protection of the submarine areas, cultural resources, competitiveness and the creation of jobs, trade, transport and logistics.

The elaboration of national strategies, coordinated for the whole Adriatic region, and their strict application can definitely facilitate the ICZM cross-border cooperation, today implemented thanks to the important contribution of the regional and local authorities on both Adriatic coasts.

The best practices' analysis has shown a strong orientation of the territories toward the sustainable management of coastal areas, even if not supported yet by appropriate tools for the integrated application rather than sectoral. The integration of actions is needed first at a cross-border and inter-institutional level, but also with respect to the different themes and priority areas of intervention that often intersect different intervention and application areas.

Thus, for example, if the planning of coastal protection is well regulated through precise engineering and physical structures, still poor is the integration of different policy areas: mobility, logistics, energy policies are only some of the themes that appear, today, neglected by local and national planners.

Insufficient is also the exchange of information and practices on main issues with a highly innovative content, such as climate change, sustainable construction and energy policies.

It' s also essential for the Adriatic regions to operate a radical change of approach toward these issues, leaving the old setting of rivalry between territories and functions, trying, instead, to overlay networks to make the entire Region more attractive for the European Union investments.

4.3 EVOLUTION SCENARIO IN PRESENCE AND ABSENCE OF ICZM MEASURES

The Adriatic macro-region is an ideal framework for the implementation of ICZM, as a completely new policy for the creation of multi-level governance, halfway between the EU and the member States, involving regions, local authorities and social and economic subjects.

The 'experimental nature' and the complexity suggest a more cautious and focused approach to carefully select and implement the fields of intervention on which build the foundations for an integrated coastal management policy.

Based on analysis of previous chapters, a simulation of two evolutionary scenarios for the Adriatic macro-region in presence or in absence of ICZM policies is summarized in the matrix below.

In the following matrix we have aggregated the ten themes identified as priorities for the Adriatic Region into three main macro areas of intervention, in line with the developed baseline scenario, in order to focus the attention on specific areas of intervention. In particular, the macro areas are as follows:

- Infrastructural system:
  - Coastal protection, land use and landscape
  - Mobility planning
  - Construction and Urban planning
  - Energy policies
- Socio-economic system
  - Sustainable tourism
  - Fishing and aquaculture
- Environment:
  - Protection of habitats (Coastal Parks), and biodiversity and establishment of "Areas of biological protection"

- Monitoring and control networks of waters
- Climate changes

For each macro area we selected three impact indicators, which was assigned a score from "high" to "null", to identify the effect of the application of policies and actions related to the themes, in presence or absence of ICZM interventions on coastal areas.

We also included the macro area: Adriatic Macro-region, which includes the institutional coordination theme and 6 cross-sectional indicators, to achieve the real integration in the Adriatic macro-region, a goal for which the application of the CZM approach can be the driving force than the setting up of common policies.

		SCENARIO 1 – Presence of ICZM approach	SCENARIO 2 – Absence of ICZM approach
INFRASTRUCTURAL SYSTEM	Logistics impact	+++	+
	Flux rationalisation	+++	++
	Harmonization of coastal uses	+++	*
SOCIO-ECONOMIC SYSTEM	Employment impact	+	*
	Added value impact	+++	+
	Increase of tourism flux	+++	++
ENVIRONMENT	Water quality impact	+	+++
	Erosion and coastal protection impact	+++	*
	Biodiversity protection	+++	*
ADRIATIC MACRO REGION	Institutional coordination	+++	+
	Cross border cooperation	+++	++
	Integration between macro areas	+++	+
	Best practices exchanges	+++	+
	Communication	+++	+
	Development policies coordination	+++	+

+++ High; ++ Medium; + Low, * Null

The three macro areas allow to check the alternative hypothesis of scenarios of the Adriatic region in presence of an ICZM approach and therefore the strong / invariants ideas for the exploitation of the area, the most attractive functional mix, the priority areas of intervention and possible support actions.

Quite evident is the increase of impact indicators related to the Adriatic Macro Region, the essential basis for the implementation of each possible joint development plan.

This scenario highlights the impact of ICZM initiatives and actions on the sustainable growth of the concerned territories.

The complexity of sectorial policies and the difficulty to implement the ICZM approach offer an interesting reflection: Is more useful to adopt a general ICZM approach or implement sectorial policies integrating all aspects and influencing the choices on other areas?

If on the one hand having too few objectives can limit the public general interest and restrict resources and the coalition of actors, on the other hand having too much general objectives risk to limit the real application of strategic theories.

The ideal strategy should have a broad and long-term spectrum of areas of intervention. However, in the beginning, the strategy (following the approach of the thematic objectives 2014 - 2020 Cohesion Policy) should focus on a few and well defined objectives (3 or 4). In other words, the aim should consist of identifying a long term ICZM strategy, with a start-up phase (3-4 years) focusing on a few objectives and an incremental approach useful to add more objectives depending on the success of the Macro-Region in terms of governance and efficiency.

The macro-regional context plays a fundamental role for the application of an effective ICZM policy, both in terms of its capacity to provide "critical mass" with respect to the investments and to the attractiveness of the area, both in terms of cost / benefit distribution, guidelines application and therefore the effectiveness of the Adriatic ICZM strategy.

If the macro–regional strategy demonstrates its effectiveness and therefore gains credibility, in the frame a development based the on sustainable growth and the application of the outlined CZM strategy, it can progressively include new thematic objectives in the strategy.

The Adriatic macro region strategy and its ICZM policy is based on the existence of three principles, each one transposed into operational criteria using the experiences already achieved in the past[5]:

- a ‘common challenge’ principle, which is based on a particular criterion, defined by the degree of need for cooperation for a community to tackle some issues;
- a ‘common consensus’ principle, which is associated to a criterion of intensity of cooperation, measured by the number of cooperation projects recorded in the EU Programme;
- “effectiveness’ principle, which corresponds to the criterion of matching between objectives and results recorded in the last period (as reported in the project application). This principle is motivated by the fact that the strategy should be ‘pragmatic’ in its ability to achieve results.

The following matrix illustrates the degree of relationship between the setting up of the ICZM strategy for the Adriatic macro-region and the themes identified as priorities for the development of the ICZM approach.

[5] “Options for Building aMacro-region” Paper Scenarios for the Development of the Adriatic- Ionian Macro Region - CESPI background paper (Andrea Stocchiero, 2010, Macro-regioni Europee: del vino vecchio in una botte nuova?)

Priority themes and macro areas		Principle	Common challange	Common Consensus	Effectiveness
		Criteria	Degree of need for cooperation	Intensity of cooperation	Level of achieved objectives
	Infrastructural system	Construction and Urban planning	*	*	*
		Coastal protection, land use and landscape	***	***	*
		Mobility planning	***	***	*
		Energy policies	**	*	
	Socio-economic system	Sustainable tourism	***	***	**
		Fishing and aquaculture	***	*	*
	Environment	Protection of habitats (Coastal Parks), and biodiversity and establishment of "Areas of biological protection"	***	**	**
		Climate changes	***	*	*
		Water monitoring and control networks	***	*	*
	Adriatic macro Region	Institutional coordination	***	***	**

Legend: *** High **Normal *Low

5 SECTION V – ICZM GUIDELINES FOR THE ADRIATIC REGION

Results from our analysis of best practices show that the sustainability of coastal development can be effectively pursued only in the frame of an overall strategy for ICZM, applied at macro-regional level.

This is possible by implementing and making more effective the commitments in cross-border cooperation and inter-institutional collaboration between the public and private sectors, mainly based on closer dialogue and discussion of plans and programs on environmental quality and sustainable growth between national and European institutions.

The following **Guidelines** are presented as "actions to take", according to the macro-areas and the priority themes identified through the analysis carried out during the implementation of Phase I and consultation with project's partners. The proposed actions based on implications in terms of environmental quality, territorial relationships, socio-economic impacts and the effective applicability having regard according to administrative, procedural and institutional requirements. A summary of the selected best practices is, therefore, presented in the form of lessons to learn and replicate.

The purpose of these guidelines is to provide, for each thematic area, specific objectives, based on the analyzed experiences, as basis to achieve a real application of ICZM in Adriatic Macro Region.

5.1 ICZM FOR THE ADRIATIC REGION

5.1.1 Institutional coordination

Based on ICZM principles and objectives, coastal development process can be developed only through the establishment and / or strengthening of the institutional coordination instruments and the integration between sectors (horizontal) and different levels of government (vertical), firstly at national level. The absence or lack of an effective internal coordination - ie: between levels of government of each State - causes problems (notably, slowness) in the ICZM implementation process.

Institutional coordination methodologies tested successfully in some countries (§ par.3.12.1) can be replicated, by making recourse to appropriate adjustments and tools, in different Adriatic areas.

At the same time, the establishment and strengthening of the horizontal integration in the cross-border regional context (ie: Adriatic initiatives) and of the international cooperation (ie: technical tables) must be promoted and deepened, also through adoption of partnership agreements, protocols and memorandums of understanding. Once adopted, these instruments will improve collection, exchange and analysis of data, information and good practices among partners and aid decision makers and stakeholders in developing common strategies for all the thematic areas which have a direct or indirect impact on the environment or other strategic sectors (such as transport, energy, biodiversity protection, etc.).

Objectives

- Definition of a clear framework for a sustainable development in the long term, as a guide for the development of the whole area.

Structual actions

- Implementation of projects aimed at the establishment and the strengthening of the institutional coordination for the ICZM implementation, in particular by improving organizational and procedural guidelines.
- Adoption of a regional legal instrument for the implementation of ICZM and the deepening of the horizontal integration instruments in transnational and international contexts.

Guidelines

At local and national level:

- definition of **local coordination frameworks**, coherently with national mechanisms and instruments of governance already established (ie: in Italy, the State-Regions Conference and the Conferenza di Servizi/Local Authorities planning Conference, as well as the Institutional Program Agreements and the Framework Program Agreements), methodological and operational frameworks and, where appropriate, new ad hoc structures at different levels, for the institutional coordination and the public participation in interventions to be implemented in coastal areas.
- Elaboration and conclusion by the deputies levels - with the participation of relevant actors at local, regional and national levels, but also, where appropriate, with the involvement of Adriatic partners relevant to the issue addressed - of **institutional cooperation agreements** aimed to an integrated elaboration and implementation of the identified actions.
- Definition and elaboration - within joint bodies between national local authorities and other public and private entities involved - of **scenarios** (environmental, social, economic, etc.) and **indicators** to support the definition of cognitive frameworks, identification of the existing problems by sector / topic and their evaluation, also in relation with existing planning tools and through appropriate forms of cooperation between coastal areas.

At international level:

- Deepening and completion of **initiatives** already in place in the Adriatic Region.
- Setting up of Discussion **Forum**, transnational and cross-border **Technical Tables** and conclusion of **Memorandum of Understanding** where address the evolution of the Adriatic coastal areas (also in the wider Mediterranean context).
- Adoption of a regional legal instrument (Adriatic and / or Mediterranean): an **ICZM Protocol**, as required by the Barcelona Convention amended in 1995, coherently with current international guidelines, especially after the adoption of Chapter 17 of the Agenda 21. The Protocol would, in fact, represent the formalization of the good intentions in terms of ICZM, allowing the introduction by coastal states of a legal framework for the integrated management of the coastal zones intended to overcome the barrier between land and sea.

Actors

International, European, national and regional Authorities, enterprises, association, economic actors, Universities, Research Centres etc.

Supporting Actions (Dissemination)

Exchange of good practices
Dissemination of results

Related themes

Infrastructures, socio-economic development and environment.

5.2 MACRO AREA: INFRASTRUCTURAL SYSTEM

5.2.1 Coastal protection, land use and landscape

Coastal protection is a general theme, which embraces a number of other issues and that must necessarily be managed based on the needs and characteristics of each region and territory. Nevertheless, it is necessary to clarify that the coastal protection aims to ***integrate various policies*** *in coastal regions which require to be implemented through a comprehensive planning of coastal resources and spaces.*

In the frame of the ICZM approach, coastal protection, territory and landscape policies cannot be implemented in a separate way and do not relate exclusively to physical interventions: they represent, in fact, a unique and dynamic process that evolve over time. Stakeholders participation is an important component of the ICZM, which is not a single environmental policy, but a process aimed to promote economic and social development in coastal areas

All the selected Best Practices concerning the protection of coastal areas show a widespread need to ***deepen the knowledge of the territory*** *on the basis of reliable and updated data, and to* ***systematize*** *those data in plans and programs* ***as a guide*** *for the development of coastal areas, taking into account local peculiarities and the environmental protection.*

This planning process becomes a crucial element for the proper and positive interaction between thematic areas, such as environmental impact assessment procedures, etc. In this context, the integration of directives, Community strategic guidelines and ICZM Guidelines within regional and local planning processes (at spatial, urban, sectoral and basin level) is of great importance.

All European projects and cooperation initiatives (COASTANCE, BEACHMED, BEACHMED-and SAFECOAST, EUROSION initiative) recently implemented in the Adriatic Region pursued the aim to improve the Coastal Zone Management and suggested the adoption of regional action plans as the most effective tool for managing and protecting coastal areas.

These policies must refer to the knowledge of he interrelated issues, which can be obtained through the involvement of stakeholders and administrative bodies in planning process. Moreover, to be effective, planning process should use a variety of instruments (laws, programs, economic instruments, information campaigns, local agenda 21, voluntary agreements, promotion of good practices, etc.) and base all decisions on accurate and complete data. The goal is to create synergies between different uses of the coast and the sea and ***resolve potential conflicts, acting in accordance with other priority issues. This is particularly true with respect to Climate Change and Cooperation themes.***

Objectives

- Promotion of the sustainable economic growth through the balance between economic, social and cultural development, for the environmental improvement and competitiveness, with the involvement of local entrepreneurship.
- Promotion of environmental management and qualification of coastal areas in national and regional programs and plans.

Structural actions

Environmental certification ISO 14.000 and EMAS registration.
Integrated management of water resources and environmental policies, waste and intermodal mobility included.

Guidelines

- Base the decisions on updated and complete data, by:
  - promoting the development of **new databases** and the integration between existing databases, technological development of monitoring system of coastal area, marine environment and resources;
  - development of "**Territorial knowledge frameworks**" through cost analysis of environmental vulnerability to support regional and urban planning, providing the analysis and processing data by an environmental vulnerability matrix and summarizing main causes, corrective actions and suggestions to be implemented, with the support of thematic maps based on a GIS system. The methodological assumption is that, through the construction of a knowledge framework for the description, analysis and evaluation of the thematic areas included in ICZM Guidelines, it is possible to verify the consistency between the planning tools adopted and the status of the territory as it is described in the knowledge framework. Once built the knowledge framework - with objectives and assumptions contained in the planning tools - it is possible to identify any critical points associated to different systems and themes.
- Capitalization of knowledge and resources already acquired in the frame of the coastal protection, through:
  - establishment of a **NETWORK** between PA, RESEARCH SYSTEM and STAKEHOLDERS, as a collector of information coming from various regional sectors and stakeholders in the field of research on the sea, studies, monitoring and interventions on the coast (collection, systematization and returning information): protection of the coast, current use of coastal system and expectations on it, legal issues, by using data bases, plans and programs related to different regional sectors and managed by local authorities This network should give relevant information to decision makers on the needs for: in-depth studies on the coast; monitoring of coastal areas; environmental studies in seas. In addition, the network should have a consultation function for public authorities, with regard to risks, land use and its transformations, the sea use and its resources, interventions and actions for the coastal protection and coastal security.
  - Analysis on interactions between the different sectors of ICZM and IMSP in order to develop common tools for exploiting synergies and avoid conflicts. ICZM and IMSP are, in fact, complementary tools for the sustainable development of the coast and the sea, both oriented to contribute to a new and integrated European maritime policy.
  - Sharing of Guidelines on environmental impact studies among different actors (Project COASTANCE). The goal is to share specific technical guidelines on EIA (Environmental Impact Assessment) and SEA (Strategic Environmental Assessment) among public administrations in charge of implementing protection and coastal management plans.
- Elaboration of Long and medium term actions for the adaptation of coastal areas to the effects of climate change, in line with EU directive 2007/60/E:
  - development of regional action plans for adaptation of coastal areas to climate change, to prevent erosion and flooding risks;
  - elaboration of appropriate protocols for the assessment of the environmental impacts to ensure that correct procedures are used to implement adaptation measures on coastal areas;
  - coordination with the competent authorities (ICZM and planning tools).
- Information, training, communication and dissemination of best practices

Actors
National, regional and municipal authorities

Supporting Actions (Dissemination)
Exchange of good practices

Dissemination of results

Related themes

Climate change
Sustainable tourism
Mobility planning

5.2.2 Mobility Planning

The Adriatic Sea is constantly subject to growing coastal and maritime pressures, such as tourism, transport, fisheries, port development, offshore drilling and offshore production of renewable energy, which create a strong competition on exploitation of the maritime space, causing potential conflicts.
In addition to the negative impacts produced by the above mentioned activities, other damages to marine environment could result from accidents which may occur on vessels carrying hazardous substances: in the northern Adriatic area, 65 million tons of hazardous substances and 5% of the world hydrocarbons production are transported every year.
The persistence of multiple functions and its connotation as "closed sea", make the Adriatic Sea a vulnerable area. So, implementation of integrated policies both for coastal areas and marine spaces are required for the protection of the ecosystems.
Such a strategy has been developed in the frame of the Integrated Maritime Policy for the European Union[6]*, whose goal is to "promote the sustainable development of the seas and oceans and to develop a coordinated decision-making process, consistent and transparent with regard to sectoral policies of the Union affecting the oceans, the seas, the islands, the coastal and border regions and the maritime sectors, even based on strategies for individual sea basins or through implementation of macro-regional strategies".*
The Integrated Maritime Policy identifies the maritime spatial planning and the integrated management of coastal areas as transversal policies: these policies allow public authorities and stakeholders to apply an integrated and coordinated approach in coastal areas and maritime spaces.
The application of an "ecosystem approach" should help to promote the sustainable growth of maritime and coastal economies and the sustainable use of sea and coast resources.
Maritime Space Plans should make a map of existing human activities and identify the drivers of future spatial development, while strategies for integrated management of coastal zones ensure the sustainability of human activities.

The uncertainty on the access to maritime space have created a bad investment climate and, ultimately, concrete risks of job losses: thus, an integrated and transnational management of coastal areas is of great importance to allow different territories to realize their full potential.
Maritime spatial planning and integrated coastal zone management are also able to support and facilitate the implementation of the strategy "Europe 2020 for a smart, sustainable and inclusive growth", which aims to ensure high levels of employment, productivity and social cohesion, including the promotion of a more competitive, more efficient and "green" economy.
The coastal and marine areas offer a great potential for the sustainable growth and are crucial for the implementation of the Europe 2020 Strategy, in accordance with the recent Communication of the European Commission called "Blue Growth - Opportunities for the sustainable growth of the marine and maritime sectors". The EC Communication addresses promising sectors - or sectors with the great potential for growth – in which targeted action should focus on and should be adequately supported by maritime spatial plans and strategies for the integrated management of coastal areas. These actions will therefore be financed by substantial economic resources in the programming period 2014-2020.

6 Directive 2008/56/EC of the European Parliament and of the Council adopted on 17 June 2008 and establishing a framework for the Community action in the field of marine environmental policy represents the environmental pillar of the Integrated Maritime Policy.

Objectives

- To develop the needed tools and skills for an effective integrated planning of intermodal mobility in coastal and maritime areas.

Guidelines

- Sustainable management of maritime activities, in order to avoid conflicts, even by creating synergy between various stakeholder groups, to reduce the impact on the marine environment, through:
    - the development and implementation of sea management plans and strategies for the integrated management of the coasts;
    - the continuation of an effective cross-border cooperation between Member States, National authorities and Stakeholders on sectoral policies;
    - the identification of the effects of cross-border maritime spatial plans and strategies, for the integrated management of coastal areas on marine waters and coastal areas under the sovereignty or jurisdiction of third countries located in the same region or sub-region and in the marine/coastal corresponding areas, managing such effects in cooperation with the competent authorities of those countries;
    - the mapping of the marine waters, through identification of spatial and temporal distribution (both actual and potential) of all maritime activities;
    - the definition of Maritime Spatial Plans, for which the Member States take into account at least the following activities:
        - energy extraction and production of renewable energy;
        - sites and infrastructure for the extraction of oil and natural gas;
        - maritime transportation routes;
        - submarine pipelines;
        - fishing areas;
        - aquaculture sites;
        - sites of nature conservation;
    - the creation of an inventory of existing measures implemented in coastal areas, and an analysis of needs to take further action, for the development of ICZM strategies;
    - the identification and analysis, by member States, of the following activities, as stated in ICZM Strategy:
        - use of specific natural resources, including energy extraction and renewable energy production;
        - development of infrastructure, power plants, transportation routes, ports, maritime works and other facilities including green infrastructures;
        - agriculture and industry;
        - fishing and aquaculture;
        - conservation, restoration and management of coastal ecosystems, ecosystem services and natural sites, coastal landscapes and islands;
        - mitigation and adaptation to climate changes.
- Encourage public participation during the elaboration of maritime space management plans and of ICZM strategies.
- Systematisation of best available data and exchange of information for the purpose of the elaboration of maritime space management plans and the development of strategies for the integrated management of coastal areas, in particular with respect to:
    - collection of environmental, social and economic data, according to the European legislation;
    - physical data in marine areas and geomorphological data in coastal areas.

- Preparation of environmental impact assessments of marine spatial management plans and of the strategies for the integrated management of coastal areas.

Actors

National, regional and port management authorities

Support and study actions

Transfer the approach adopted for the land use planning to the open sea.

Monitoring actions

GIS support for the mapping and the analysis of the different land uses.

Spatial impact assessment and compatibility of uses such as key parameters in order to determine whether there is a need to develop a territorial sea use plan.

Related themes

Climate changes

Energy policies

Coastal protection, land use and landscape

5.2.3 Construction and urban planning

The analysis of the Adriatic region context have clearly shown a significant problem of commingling of functions in coastal areas, accompanied by human pressure and over construction (approximately 60% of the coastal area is over constructed) with consequent negative effects on water, soil and air pollution.
Notably, the data on illegal constructions and water purification are more than alarming. Moreover, around 8,000 kilometres of coastline on the western side of the Adriatic Sea is in danger, since there are located 28 of the 57 industrial recovery sites classified as "of national interest" (or potentially dangerous for the environment).
In order to find the right balance between human settlement and the preservation of the Adriatic Region, each area is required to implement appropriate planning and control actions on new and existing buildings.

The Best Practice analysed in this Report focused on the recovery of the port of Stockholm. It provides a good example of a sustainable recovery of a vital area for the city, which has become the field of experimental application of a development project based on sustainable transport, efficient building, energy saving and energy efficiency, making the whole area adapted to future climate changes.
The following guidelines are intended to provide guidance to identify "externalities", as well as environmental and social effects (ie, climate change adaptation, inclusion of consumers, competitiveness of the territory), directly derived from the implementation of recovery projects of brownfield sites, not easily quantified in budgetary terms.
Identification and quantification of the impacts of recovery projects require careful analysis based on economic (monetary evaluation of costs and benefits for the community) and quality assessments, describing envisaged results from the recovery of important coastal sites.

Objectives

- To protect coastal areas through the implementation of strategies avoiding new constructions and promoting the recovery of brownfield sites and new uses of land along the coastal areas, by integrating planning and management of the sites, reclamation and appropriate policies oriented to encourage investors to the re-use of lands and buildings.

Guidelines

- Reduce the building pressure in environmental important sites.
- Give priority to reuse or reorganization interventions with respect to new soil commitments.
- Promote an integrated environmental planning.
- Recover and rehabilitate degraded areas, through:
    - Integration of environmental considerations on local characteristics into investment decision process;
    - Assessment of the recovery intervention, in terms of "externalities" and environmental and social impacts;
    - Promotion of eco–bio-friendly technologies;
    - Assessment of the expected profitability rate of the investment, having regard to available technologies and investment objectives;
    - Mapping of the expected effects from interventions;
    - Mapping of the expected benefits from interventions;
    - Medium-term comparison, through a selected sample of resident population, and assessment of the reaction to changes brought by the investment;
    - Cost-Benefit analysis and identification of people who enjoy such benefits;
    - Identification and estimation of eco-bio-friendly costs;
    - Sensitivity analysis of those changes that could modify the starting situation.

Actors

National, regional and port authorities

Structural actions

Adoption of Urban Development Plans

Related themes

Climate changes
Mobility planning
Energy policies
Coastal protection, land use and landscape

5.2.4 Energy policies

Energy policy represents a relatively recent topic of interest, but with a high impact for the integrated management of the Adriatic coasts. Energy policy is also linked to the sustainable management, including coastal protection, mobility, construction and tourism.

Along the Adriatic coast, many cooperation projects focused on the development of sustainable energy projects and investments on renewable energy sources (such as offshore wind) implemented based on transnational partnerships between public and private actors.

The Best Practice analysed in paragraph 3.7.1 focused on treatment technologies, recycling and valorization of dredging sediments in port areas, which are identified as an important energy resource rather than hazardous waste. This project represents an experimental application, which could be replicated in similar

contexts. Investments in energy efficiency of the ports, as well as encouraging the use of renewable energy and planning of sustainable energy policies in construction and mobility in coastal areas, are just a few examples of possible actions which could facilitate the achievement of energy sustainability in coastal areas. Nevertheless, there is no doubt that activities carried out in ports have the greatest impact in terms of CO_2 emissions.
Climate change and, notably, the increase of temperatures due to global warming, need suitable solutions in the Adriatic Region, especially in tourist areas. This requires to face with the increasing energy consumption, and the higher competition with other economic activities and residential use of water resources, which will certainly result in higher production costs of tourist services in the near future.
The development of energy production from renewable sources represents an objective that can be achieved in the wider context of maritime spatial planning and the integrated management of coastal zones, in accordance with Directive 2009/28/EC.
According to the European Sea Ports Organisation (ESPO) and ECOPORTS - which elaborate an analysis to monitor the environmental impacts of the European ports which are part of ESPO network -, priorities for action intended to reduce the environmental impacts of the ports should based on strong relationships with local communities, by taking into account their current and expected energy consumption. These points clearly reflect the importance of energy efficiency as a tool to reduce total carbon emissions in coastal areas and ports. Moreover, improvements in energy efficiency and decreasing in GHG emissions represent two important goals towards the minimization of negative effects of climate change and, thus, the improvement of the social acceptance of port activities. This is what is required by the forthcoming European certification for all maritime activities, which makes the port authorities responsible for the effects produced by all activities with potential significant environmental impacts.

The following Guidelines are intended to be a starting point for an investigation over the impacts of energy consumption in port areas, with the aim of providing guidance for the achievement of the environmental sustainability objectives, in accordance with relevant European legislation.

Objectives

Minimize the environmental impact of the activities carried out on the coast and, notably, in port areas, for: the improvement of environment performances; a stronger sustainable development aimed to achieve objectives set out by the Strategy "Europe 2020".

Guidelines

- Promotion of surveys and studies on the environmental impacts of port activities and monitoring of data.
- Adoption of an **Environmental Energy Plan** for the Ports or the Districts of port areas, including use of renewable energies (wind, solar photovoltaic and solar thermal, etc.) to minimize environmental impacts, increase energy efficiency in housing stock, industries and other economic activities and reduce CO_2 emissions. Port Authorities may act as developers of standards in the implementation of RES (Renewable Energy Sources) and EE (Energy Efficiency) technologies. The potential long-term energy plan could allow 20% cut in CO_2 emissions in urban areas and in the port areas by 2020.
- Adoption of methodologies and implementing tools to assist ports in managing their environmental issues:
    - Adoption of the SDM (Self Diagnosis Method): it is structured on a methodology established and widely adopted at international level for the identification of potential environmental risks.

Moreover, SDM is a tool thought to support policy makers in setting priorities for action. The SDM is based on synthetic codes for modelling and configuration of the characteristic of variables for each port infrastructure. SDM is able to support the self-assessment of environmental management programs against current performance and individual rules in use. The regular use of SDM helps local authorities to monitor any progress made through the implementation of the environmental management activities in port areas.

- Adoption of the PERS (Port Environmental Review System) application module: it is able to support the implementation of environmental management systems in port areas. PERS is based on indicators recognized at international level, even if it remains a specific system developed by port operators for other port operators. It is designed to be flexible enough to be adapted to possible legislative changes and different priorities for action. PERS also includes the possibility to validate the data entered in order to obtain certification by independent auditors.

- Sharing energy policies with local communities and exchange good practices between regions and states belonging to the same geographical area/macro-region.
- Pilot projects for the reuse of sediments as recycled materials and energy source.
- Application of the European Directives on GHG emissions targets for maritime transport sector, in order to build "green ports" as a result of a wide range of actions oriented to create high environmental value (e.g., solar and wind, the introduction of electric mobility systems, the adoption of low-consumption LED lamps for public lighting, etc.).

Actors

State authorities , regional authorities and port management authorities

Support Actions and Studies

Feasibility Studies

Related themes

Institutional coordination

5.3 MACRO AREA: SOCIO-ECONOMIC SYSTEM

5.3.1 Sustainable tourism

Tourism is one of the main economy sector in Adriatic area. It is able to drive growth and to integrate the idea of sustainable development into touristic activities. Success of Tourism activities depends, among other reasons, on the ability of national and local authorities and operators to involve people in the protection and restoration of the natural environment. Actually, natural environment in Adriatic Region needs to be protected since it is a strategic sector for economic, natural and cultural reasons.

Even in the medium term, tourist offer will impoverish territories and destroy their resources and, thus, their competitiveness, if tourism is not committed to make the impact on the environment and local culture as low as possible, while helping to generate future employment for local people.
To be "sustainable", tourism should take into account any issues related to environment, such as: mobility and air pollution, waste collection and treatment, drinking water and waste water management, management of protected areas, prevention of pollution of coastal waters, illegal construction, etc. These are just some examples of the issues to address by using a strategic assessment of the impacts of tourism on coastal areas.

*This assessment must also relate to the **qualification** and **diversification** of tourism in different territories and local communities, since tourism is a complex system that includes direct (hotels, campsites , beaches , travel agencies , tour operators, etc.) and indirect (restaurants, bars , golf courses , swimming pools, parks, museums, cinemas , etc.) economic activities. As for direct activities, the level of the investments is a function of the services offered to travellers, while indirect economic activities relate to tourism consumption as important factor of growth.*

When direct and indirect businesses and public authorities cooperate to increase the natural and cultural values of the territories where they live, a competitive advantage can be gained with no depletion of resources. The Best Practices analysed (projects: Med Camp in Lebanon and Slovenia) show how important is, among other factors, the adoption of well-targeted programs aimed to integrate a sustainable use of the environment and environmental protection into priorities and actions for local development.
The following guidelines are intended to offer some suggestions on issues concerning aggregation, qualification and diversification of tourism activities, by considering the Adriatic region as a single, collaborative and integrated system in which each territory should influence each other in a virtuous circle. In this context it is possible to imagine the Adriatic Region as a single "touristic product". In this respect, Adriatic regions and operators should play a decisive role in the realization of this process of awareness and growth towards an "European vision" of the Adriatic Sea. The promotion of this new product may be entrusted to a supranational organization, such as the "Observatory on Tourism in the Adriatic basin".

Objectives

- Sustainable use of resources: protection of the coastal environment (its functioning and integrity) for a better sharing of the maritime spaces and for the rational use of resources, through the integration of different areas and the clarification of responsibilities and legislative frameworks.
- Development of a strategy for the integrated territorial development between governments, local authorities and transnational partners, as well as between public and private sectors, to achieve a sustainable well-being, a more equitable distribution of resources and a higher quality of life, the protection of the environment, territories and cultures.

Guidelines

- Development of strategies for the protection of coastal areas under intense pressure from tourism, through intersectoral actions and planning of infrastructure management (plans for alternative mobility, plans for water supply, zoning, etc.).
- Promotion of sustainable paths that enhance the connection between hinterland and coastal areas.
- Redevelopment of sustainable tourism businesses, through:
    - Measurement of environmental impacts and management:
        - calculation of GHG emissions (based on European protocols) and identification of mitigation measures;
        - waste minimization through recycling and resource conservation programs;
        - monitoring of water use and management of its negative impacts (grey water, wastewater) on the environment;
        - monitoring of energy consumption and implementation of measures to improve energy efficiency and energy saving;

- measurement of the impacts of responsible purchasing, through calculation of all purchases of products and/or local services made in a year (in each operating area), expressed as a percentage of the total goods and/or services purchased outside of the local community and therefore imported;

- preservation of existing culture and social rules in local communities: socio-cultural sustainability is based on the communication of values and the attitude of businesses to work together with local people to maintain and protect local culture and community, encourage the participation of people to community's life and ensure economic returns to community's members.
- Information and communication campaigns on sustainable behaviours towards suppliers, customers and local stakeholders.
- Promotion and adoption of environmental certifications.

- Supporting innovation, aggregation and integration processes between tourism businesses, through:
  - technological innovation of the information points and hospitality offices for tourists;
  - promotion of telematics marketing of touristic systems;
  - enhancement of the technological level of tourism organizations for to smooth exchange of data between tourist agencies and tourism businesses in different territories;
  - exchange of good practices on sustainable management of tourist flows;
  - networking and improvement of technological, procedural and organizational arrangements to achieve a common level of expertise, providing the ability to exchange reports and information;
  - creation of a shared knowledge in tourism between different regions of the Adriatic Basin, through the elaboration and adoption of a common methodology and new tools for detection, management and transmission of data. Information on the tourism phenomena should be made available to all decision-makers and stakeholders in order to enable them to elaborate well-targeted strategies and take action[7].
  - Establishment of an **"Observatory on Tourism in the Adriatic Region"**, as a result of the collaboration between Adriatic countries, which could acts as a tourism portal of the Adriatic basin (a permanent tool aimed to facilitate the exchange of information and data on tourism), also accessible to the public.

Actors

National and Regional Authorities, Municipalities, Marine Parks, Environmental Agencies, Operators.

Structural measures

Control of buildings and new constructions and adoption of re-qualification plans for buildings and plans for the urban sustainable development
Improvement of tourism infrastructure
Development and commercialization of eco-friendly services and eco-services.

Related themes

Mobility planning
Construction and Urban planning
Coastal protection, land use and landscape
Climate changes

[7] **STAR Project**, financed through IPA Cross-border Program CBC Adriatic.

5.3.2 Fishing and aquaculture

The marine environment is a precious asset and an essential element for the life on the Earth. It plays a decisive role on the climate and is also an important factor of economic prosperity, social well-being and quality of life.

European maritime regions detain approximately 40% of EU gross domestic product and contain about 40% of the EU population. The Common Fisheries Policy (CFP) has several objectives, which include: the protection of fish stocks from overexploitation; a guaranteed income for fishermen; the regular supply to consumers and to processing industry at reasonable prices; the sustainable exploitation of living marine resources from a biological, environmental and economic points of view. Over the past 15 years, a widespread interest in the environmental impact of fishing activities, in particular the effects on ecosystems, has stimulated intensive research. Not only fish stocks need protection, but also the whole environment in which they live. As shown by a series of recent studies, intensive fishing causes serious damage at all levels of biological organization of marine life (population, community and ecosystem [8]).

To find the right balance between the economic and social importance of fishing and its environmental impact on coastal areas - mainly in terms of biodiversity losses -, EU Directive 2008/56/EC establishes a framework for Community action in the field of marine environmental policy (the Strategy Framework Directive for the marine environment[9]). The Directive sets common principles for Member States to develop their own strategies, in collaboration with other Member States and third Countries, with the aim to achieve good environmental status in the marine waters under their jurisdiction.

One of the main restrictions to the governments' action – which currently impede the achievement of an organic and fair policy for the protection and management of the marine environment - is represented both by the lack of a comprehensive and updated set of knowledge on the ecological characteristics of communities, and the lack of reliable information on the quality and quantity of economic and recreational activities in the marine environment. So, the lack of an adequate knowledge does not allow the implementation of concrete protection policies. A better knowledge of the situation is, therefore, necessary to establish an effective synergy between all planned actions aimed to protect marine resources.

The following guidelines based on provisions of the EU Directive 2008/56/EC, with a special emphasis on the regulation of fishing in marine protected areas and the establishment of Protected Biological Areas (PBA), to: provide guidance for the development of comprehensive strategies on these areas; ensure the protection and restoration of European marine ecosystems, and; ensure the ecological sustainability of economic activities (e.g. fishing) on marine environment.

Objectives

- Protection of marine habitats for the development of indigenous coastal flora and fauna.

Guidelines

Marine Strategies at Regional Level

- Establishment of Protected Biological Areas (PBA) with the task of enabling the regulation of professional and sport fishing, monitoring and control of all areas of biological protection.
- Assessment of the ecological status of waters and the impact of human activities. Assessments should include:

[8] Report AEA n. 4/2006 "Priority issues for Mediterranean Environment", European Environmental Agency

[9] European marine waters are articulated in four regions (with two other sub-regions): the Baltic Sea, the North-Eastern Atlantic Sea, the Mediterranean Sea and the Black Sea. In each regions and sub-regions, Member States must coordinate any actions among them and with interested Third States. For this purpose they can make recourse to the existing regional organizations.

  - an analysis of the essential characteristics of the waters (physical and chemical characteristics, habitat types, plant and animal populations, etc.);
  - an analysis of the impacts and main pressures from human activities affecting the characteristics of such waters (contamination caused by toxic products, eutrophication, choking or obstruction of habitat due to construction activities, introduction of non-native species, physical damage caused by ship anchors , etc.);
  - socio-economic analysis on water use and costs related to degradation of the marine environment.
- Strengthening and development of knowledge on water, through implementation of the tools already in use for other environmental policies, such as GMES INSPIRE (EN) .

Strategies at National Level

- Establish the "good ecological status" of waters, by taking into account: biological diversity; presence of non-native species; health of fishing stocks; food web; eutrophication; changes in hydrographical conditions and concentrations of contaminants; quantity of waste and noise pollution.
- Define the objectives to achieve to get a "good ecological status" and related indicators. Objectives should be measurable and consistent within the same maritime region or sub-region and should be accompanied by the indication of the implementation period and the expiration date.
- Establish a program of concrete measures to achieve goals. Such measures shall be developed by taking into account their consequences on the economic and social development.
- Carry out impact studies and cost/benefit analysis of the measures taken by Member States.
- Develop coordinated surveillance programs, in order to carry out regular assessments on water quality and on program results.

Strategies at supranational level

- Coordinate Government interventions, by creating cooperation mechanisms as stated in international conventions, through the involvement of international organizations.
- Provide scientific and technical skills, extending the cooperation to third countries.
- Promote the exchange of good practices.

Actors

State and Regional Authorities; Municipalities; Marine Parks; Environmental Agencies.

Studies and Monitoring

Mapping and promotion of specific uses of wetlands through hydrographic campaigns
Structural and biological characterizations

Related themes

Sustainable tourism
Coastal protection, land use and landscape

5.4 MACRO AREA: ENVIRONMENT

5.4.1 Protection of Habitat, biodiversity and set up of "Areas of biological protection"

The protection of habitats and protected areas is an important issue for the whole Adriatic region, where more than 200 marine and coastal protected areas, recognized by national and international laws, exist. However, this system of protection can remain ineffective without well-targeted strategies and master plans, availability of funds, management skills and control systems.

Some important projects in the Region are intended to achieve the objective to create networks in the Adriatic area in order to: facilitate contacts between protected areas; develop management and planning capacity through partnerships; cooperate in environmental protection and sustainable development. The guiding principle for cooperation is the enhancement, in all local communities, of the sense of belonging to a single Adriatic community.

Transnational cooperation between public authorities is crucial for: promoting the sustainable exploitation of protected areas and common spaces in Adriatic Region; sharing of guidelines and tools for monitoring, planning and management of the Region through the establishment of a permanent table for the institutional consultation; the implementation of pilot projects in specific selected areas of the Adriatic Countries.

Another relevant objective can be added, as emerged from the study of best practices in the Adriatic area: to ensure the usability of protected areas, not only with the goal of their preservation, but also in view of the economic development of the Adriatic communities. Almost all local economies in the area depend on tourism, with forecasted exponential growth rates, even where tourism is not yet one of the main sectors contributing to the GDP.

Among Adriatic countries, Italy is the major tourist economy. Tourism contribution to Italian GDP is substantially in line with the average annual rate of Tourism on EU-27's GDP. In Slovenia and Greece, tourism growth rates are 1-2 percentage points higher than the EU average. In Croatia, tourism contribution to GDP is almost twice the European average, and it is forecasted to grow by 8%-9% in the coming years. High rates of growth are also expected for Bosnia and Herzegovina and Albania. Montenegro will probably represent a special case, since tourism economy is expected to grow by 10% per year, according to all major international research centres on tourism.

Tourism in the Adriatic Sea is essentially "sun and beach" based, other than recreational and cruise tourism. Moreover, the whole area is also interested by an intense maritime traffic, also linked to the transport of dangerous substances, as well as offshore drilling activities. Establishing the best way to deal with these issues will require great attention to the protection of marine resources, as well as a joint effort to safeguard the area against any encroachment or abuse. This is of primary importance for the future of the Adriatic basin: the use of waters could pose a serious threat to the Adriatic, which renews its waters very slowly (every 80 years on average). Based on these premises, our analyses reveal that the role of marine protected areas could be emphasized through the implementation of experimental practices of sustainable management on tourism and coastal use.

Objectives

- Sustainable use of the marine areas and the protected coastal zones.

Guidelines

- Approval of management plans for coastal and marine protected areas.
- Development of geological studies and monitoring for the development of maps of the seabed in marine protected areas.
- Adoption of a common pattern, including homogeneous indicators, for evaluating the effectiveness of management in marine protected areas.

- Implementation of integrated water management systems to save the coast and the sea by ensuring appropriate resources for more inspections at sea and on the coast.
- Implementation of pilot projects on tourism usability in protected areas:
  - construction of pre-built parking areas and light infrastructures with low environmental and visual impacts to eliminate seabed erosion and the consequent loss of biodiversity;
  - launch of national plans for "green infrastructures" that ensure the ecological function of coasts and seas, while ensuring better "adaptation" to climate changes
- Adoption of technical protocols for boating in sustainable marine protected areas, to regulate uniformly:
  - classification of the hulls;
  - performance reserve, through release of “blue stickers”, for eco-friendly crafts;
  - access, parking and speed granted to marine protected areas;
  - adoption of common maritime signalling.
- Promotion of regional cohesion between EACs (Eastern Adriatic Countries) and between EACs and IARs (Italian Adriatic Regions), through the establishment of an integrated system of data collection and monitoring, as well as the implementation of coherent and coordinated policies for the environment protection, through the elaboration of Guidelines on concerted joint planning and management in natural areas (Natura 2000 sites, IBA).
- Conversion of existing networks in permanent tables for the institutional consultation in order to protect, preserve and enhance the natural and environmental heritage of the area and improve management efficiency through the development of an integrated model for the monitoring, planning and sustainable management of Protected Areas.

Actors

National and Regional Authorities, Municipalities, Marine Parks, Environment Agencies.

Structural Actions

Memoranda of Understanding
Inter-institutional coordination

Studies and Monitoring

Feasibility Studies and geological investigations

Related themes

Sustainable tourism
Fishing and aquaculture
Coastal protection, territory and landscape

5.4.2 Water monitoring and control networks

Monitoring of groundwater and water pollution is of vital importance for the integrated management of maritime spaces and coastal areas. To date, in Italy, 25% of sewage is discharged into the sea, lakes and rivers without being properly purified, while there are many critical situations linked to purifiers malfunctioning or illegal dumping. Some lands and waters are particularly sensitive to environmental deteriorated conditions and are often compromised by the heavy “footprint” of human activities. Adriatic Sea is defined by the experts as a sensitive environment; it is, in fact, a basin with limited water exchange that does not allow dispersion of pollutants. Notably, in North Adriatic area, pollutants are endangering flora and fauna fish, which are intoxicated by the harmful substances highly concentrated in water. Some nutrients, such as nitrates and

phosphates, coming from the rivers and, notably, from Po river, were banned by the Italian legislation to reduce some abnormal phenomena (e.g. the colour of the sea).

***Pollution from agriculture and industry** is also important because, in addition to fertilizer, harmful substances - such as hydrocarbons and metals - flow into the mouths of rivers and enter the food chain. These substances sink to the backdrop and are then released from bottom trawling linked to fishing.*

As known, water can arrive to the sea not only through the rivers, but also passing from the ground. Thus, water pollution happens not only via pollutants from the rivers, but also through the soil pollution produced by farms and industries. Some types of industries - for example, food industries – discharge organic materials directly into the rivers. Notably, fertilizer are responsible for eutrophication, or excessive development of algae in lakes and seas. The phenomenon began in the late '80s in the seas adjacent to the coasts of the Adriatic, where large areas were invaded by algae and summer influx of tourists was consequently put at serious risk.

The following guidelines relate to the European Directives, notably the Water Framework Directive 2000/60/EC establishing a comprehensive framework for the protection of surface water and groundwater. Directive 2000/60/EC fix the environmental objectives to achieve, including the good ecological and chemical status and prevention of deterioration. According to the Directive, to have a good chemical status water bodies must meet the environmental quality standards (EQS) set for certain chemicals (priority substances) ranked among that pollutants presenting a significant risk to the aquatic environment or via the aquatic environment. Some substances are considered "priority hazardous substances" because of their persistent, bio accumulative and/or toxic properties or because they could be potentially toxic. In addition to the objective of good chemical status, the Water Framework Directive imposes an obligation to take control measures for the progressive reduction of emissions coming from priority substances and the cessation or phasing out of discharges, emissions and losses of priority hazardous substances in the aquatic environment. Currently, some control measures are taken at the level of Member States, while further legislation regulate interventions at EU level (e.g. REACH Regulation; plant protection products and biocides legislation) .

Objectives

- Achievement of the objectives of environmental quality for the surface water matrix.

Guidelines

- Achievement of the quality standards, in application of the EU Directive 2008/105/EC - regarding the concentrations of priority substances, hazardous substances and other substances in streams - and the "good status", according to the provisions set by the EU Directive 2000/60/EC (Legislative Decree 152/ 2006, as amended).
- Implementation of the EU Directive 2000/60/EC which requires Member States to achieve, by 2015, the goal of "good status" for both surface water and groundwater, through:
    - preparation of plans for monitoring and control of water supply;
    - adaptation of the monitoring system to the EU Directive 2000/60/EC;
    - adjustment to the standards and objectives established for Protected Areas (water for special uses, Sensitive Areas, Parks, SCI, SPA , etc.);
    - establishment of monitoring stations for surface water and groundwater, automatic stations for monitoring of floods and automatic stations for monitoring of water quality;
    - periodic review of the monitoring plans and compliance with current regulatory requirements, both in terms of chemicals substances and hazardous pollutants and in terms of biological quality elements.

Actors

National and Regional Authorities, Municipality, Environmental Agencies

Monitoring Actions

Implementation of Plans and Systems for monitoring and control of the drainage water supply.

Related themes

Sustainable tourism
Fishing and aquaculture
Coastal protection, territory and landscape

5.4.3 Climate changes

Climate change and its consequences represent a growing threat to coastal areas. The coastal countries still do not have similar levels of experience, technical skills, financial resources and expertise to ensure the sustainable development of their marine and coastal areas.
Climate change can act, in the Adriatic region, through the impacts of changes in meteorological parameter: air temperature and temperature of the sea, rainfall, extreme events, sea level rise. The latter affects the entire Adriatic Sea and is particularly important in the lagoon of Venice, where the rise in sea level occurs together with coastal erosion. Thus, coast protection, morphological recovery and environmental restoration are needed (please, refer to the best practices reported in paragraphs 3.3.1 and 3.3.2). The rise in the average level of the Adriatic sea (eustatism) is largely caused by global warming, but also by the sinking of the islands (subsidence). Based on reliable forecasts (IPCC, 2007), because of climate change the phenomenon of eustatism should further intensify in the coming decades. Nowadays, the eustatism is responsible for the increase of extreme floods.
The cooperation between coastal Governments and local communities living in the two shores of the Adriatic sea is one of the key-issue to efficiently address the following impacts of climate change:

- *economic impacts on coastal tourism sector, on fish production and economic activities in general;*
- *damage to urban architectural structures and buildings;*
- *social impacts on affected areas (cities, etc.).*

Climate change can be better addressed through the implementation of a comprehensive framework of strategies and coordinated or joint initiatives, such as the first " Maritime Strategy for the Adriatic Sea and the Ionian Sea". Adaptation to climate change is, in fact, an horizontal issue within European policies and the Strategy "Europe 2020".
Adaptation actions promoted by Public Authorities in coastal areas may have a great impact in meeting the challenges caused by climate change. Public Authorities should focus their actions on the following topics: sustainable land management; proper use of sediments and natural resources; adoption of an integrated approach in coastal management and planning of interventions in coastal areas.
In this context, existing collaboration agreements between different Adriatic regions – and, notably, the "Chart of Bologna 2012" - are of great importance for further cooperation initiatives.

Objectives

- Closer cooperation between Mediterranean and Adriatic regions supporting the implementation of shared actions on adaptation to climate change and coastal mitigation risk from coastal flooding, erosion and marine ingression.

Guidelines

- In accordance with the "Chart of Bologna", facilitate the setting up of a **cooperation network between existing coastal observatories in the Adriatic**, in order to develop projects for the exchange of best practices, methodologies and information that can contribute to achieve the following objectives:
    - common standards for the coastal monitoring (INSPIRE Directive);
    - reliable framework related to coastal morphological dynamics in the Adriatic;
    - shared monitoring services and establishment of special regional or local agencies - where not already in place – for the monitoring of the coast, management of risks and fight against coastal erosion, coastal protection and management of sediments stocks in coastal areas.
- Promote and participate in specific initiatives and projects implemented at regional (Adriatic) and/or Mediterranean and/or the European level intended to get a quantitative description of the state of erosion and the risk of marine ingression along the Adriatic coasts.
- Protect the Adriatic coastal areas, while promoting the sustainable use of coastal zones as a strategic resource, based on a comprehensive ICZM approach and proper coastal urbanization (see also guidelines set out in paragraphs 5.2.1 - Coast protection, Land use and landscape and 5.2.3 - Construction and Urban Planning).
- Promote and participate in regional and/or thematic **"project clustering"** initiatives in order to: access financial resources provided by different international organisations and, notably, by the EU; gain knowledge on different strategic priorities related to climate change in coastal areas, even by capitalize on going or ended projects and programs (eg the MED Operational Programme - "FACECOAST : Face the challenge of climate change in the Mediterranean coastal zones").
- Promote cooperation initiatives between different regions, universities and stakeholders.

Actors

National and Regional Authorities, Municipalities, Ports Management Authorities.

Structural Actions

Establishment of a Collaboration Network between the Observatories in the Adriatic coastal areas.
Integrated management of water resources and environmental policies, including waste and intermodal mobility plans (see paragraph 5.2.1).
Adoption of Urban Development Plans (see Section 5.2.3).

Support actions (dissemination)

Exchange of good practices.
Dissemination of results.

Related themes

Coastal protection, land use and landscape