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ShapeTourism

SURVEY AND COMPARISON OF PLANNING TOOLS TO MANAGE TOURISM CONFLICTS and EXTERNALITIES

FORWARD NOTE

This document presents finalized Deliverable: D_3.4.2 “survey and comparison of planning tools to manage tourism conflicts and externalities” edited by Research Center of the Slovenian Academy of Sciences and Art and supported by contributing of relevant project partners. Document was provided through Activity 3.4 entitled Survey of the most used tools of local and transnational economic policy to face conflict emerging from tourism activities.

CREDITS and DISCLAIMER

This report reflects the authors points of view; the programme Managing Authority is not responsible for any use that could be made of information contained therein

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PROJECT REFERENCE

Acronym: SHAPETOURISM

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Deliverable: D_3.4.2 "survey and comparison of planning tools to manage tourism conflicts and externalities"



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Survey and Comparison of Planning Tools to Manage Tourism Conflicts and Externalities

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Summary for public dissemination

Survey and Comparison of Planning Tools to Manage Tourism Conflicts and Externalities enabled some detailed insights in to Integrated coastal zone management (ICZM) and Maritime spatial planning (MSP) in European Mediterranean area. ICZM is a Framework and Tool for Planning and Supporting Sustainable Management of Coastal Resources. It includes dynamic, continuous and iterative process designed to promote sustainable management of coastal zones. Planning Tools and supporting methodologies help to carry out a preference tool that helps to guide discussions with stakeholders and to extract and visualize their views and perceptions. It includes an indicator tool that allows to assess the present state of sustainability and its changes after the implementation of a plan/measure, as well, as to assess the quality of the process from initiation to the implementation all take into account land-sea interactions. Additionally, an Ecosystem Service assessment tool for coastal and marine waters allows to assess state, interactions and changes in Ecosystem Service provision and supports decision making.

We studied good practices in order to recognize existing tools for measuring the progress and outcomes of planning: Regarding a holistic approach towards coastal cultural heritage management among several countries, Italy, Spain, Portugal, and England have given especial attention to coastal cultural heritage to be considered as another resource in the coastlines. These countries recognized the importance of multidisciplinary approach as a foundation for Integrated Coastal Zone Management. An example of initiatives in Italy is the guidelines for management of coastal cultural heritage. These guidelines deal with conceptual and methodological frameworks, and provide operational approaches for decision makers on local level for the coastal resources. In order to make use of the already existing initiatives on ICZM indicators a complete indicator literature review was undertaken (IOC UNESCO - A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management; DEDUCE (EU level); Plan Bleu (Med Sea) - Mediterranean Strategy for Sustainable Development (MSSD).

As a result, more than 300 indicators were initially identified. Further review was made by looking at the actual formulation (wording) of the single indicators. It was noticed that even if some indicators had a different wording they were referring to the same objective. After this process some indicators not included in the first phase were re-introduced in the list. Furthermore, some indicators were included by contribution of experts in particular for tourism and cultural heritage indicators.

In the second step the 18 indicators were selected for CULTURAL HERITAGE TOURISM planning and management and divided in to three types of indicators: governance, socio-economical, biological & ecological indicators.



1. Introduction

1.1 Integrated Coastal Zone Management (ICZM)

ICZM is a Framework and Tool for Planning and Supporting Sustainable Management of Coastal Resources. It includes dynamic, continuous and iterative process designed to promote sustainable management of coastal zones. ICZM seeks to balance the benefits from economic development and human uses of the coastal zones, protecting, preserving, and restoring coastal zones, minimizing loss of human life and property and the public access to and enjoyment of the coastal zone, all within the limits set by natural dynamics and carrying capacity.

1.2 Maritime Spatial Planning (MSP)

Maritime spatial planning contributes to the effective management of marine activities and the sustainable use of marine and coastal resources. It enquires an integrated planning and management approach that should build upon existing national, regional and local rules and mechanisms, including those set out in Recommendation 2002/413/EC (ICZM) shall apply an ecosystem-based approach. Besides, it shall take into account land-sea interactions, environmental, economic and social aspects, as well as safety aspects, ensure the involvement of stakeholders and member states should establish procedural steps.

1.3 Planning Tools study

Planning Tools and supporting methodologies help to carry out a preference tool that helps to guide discussions with stakeholders and to extract and visualize their views and perceptions. It includes an indicator tool that allows to assess the present state of sustainability and its changes after the implementation of a plan/measure, as well, as to assess the quality of the process from initiation to the implementation all take into account land-sea interactions. Additionally, an Ecosystem Service assessment tool for coastal and marine waters allows to assess state, interactions and changes in Ecosystem Service provision and supports decision making.

In order to make use of the already existing initiatives on ICZM indicators a complete indicator literature review was undertaken. Some of the most relevant initiatives are listed below:

- IOC UNESCO handbook (global) - A Handbook for Measuring the Progress and Outcomes of Integrated Coastal and Ocean Management
- DEDUCE (EU level)
- Plan Bleu (Med Sea) - Mediterranean Strategy for Sustainable Development (MSSD)

more than 300 indicators were initially identified.

Further review was made by looking at the actual formulation (wording) of the single indicators. It was noticed that even if some indicators had a different wording they were referring to the same objective.

After this process some indicators not included in the first phase were re-introduced in the list.

Furthermore, some indicators were included by contribution of experts in particular for tourism and cultural heritage indicators.



In the second step the indicators were selected for CULTURAL HERITAGE TOURISM planning and management.

There should be three types of indicators:

- Sustainability Indicators: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes.
- Impact Indicators: measures to show that the strategy, plan or programme outputs are achieved – medium-term outcomes.
- Performance Indicators: measures to show that activities are undertaken - short-term outcomes.
- We studied existing Tools for measuring the progress and outcomes of planning:

Regarding a holistic approach towards coastal cultural heritage management among several countries, Italy, Spain, Portugal, and England have given especial attention to coastal cultural heritage to be considered as another resource in the coastlines (Khakzad et al. 2015). These countries recognized the importance of multidisciplinary approach as a foundation for Integrated Coastal Zone Management. An example of initiatives in Italy is the guidelines for management of coastal cultural heritage. These guidelines deal with conceptual and methodological frameworks, and provide operational approaches for decision makers on local level for the coastal resources (Callegari and Vallega, 2002).



2. Selected good practices of ICZM and MSP with relevant indicators and planning tools

Good practice 1: PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape
LIFE00 ENV/IT/000191, 2001/2004

PROJECT DESCRIPTION:

The agricultural landscape of Europe's Mediterranean coasts is in some places still morphologically characterised by steps, supported by dry-stone walled terraces that were constructed to prevent erosion and thereby create conditions suitable for cultivation. Due to its peculiar orography, Liguria is one of the regions in Europe that is most characterised by the presence of terraces.

In a well-known stretch of coastline called 'Cinque Terre', the terraced landscape is so spectacular and unique that in 1997 UNESCO designated it as a 'World Natural and Cultural Heritage'. In 1999 the area became a National Park. Today, the terraced landscape of the Cinque Terre is characterised by intense processes of land abandonment and disuse, caused both by the practical and economic difficulties of maintenance and by social changes occurring over the last century.

GOOD PRACTISES and results (relevant indicators for evaluation of individual result are listed in the brackets):

Mapping of rural areas, which produced an alphanumeric archive of mapped areas. This would facilitate estimates for the level of decline of areas, the degree to which they have been overtaken by woods and the proximity to village centres (**natural and social science information base established**).

The pilot project was characterised by three main elements of innovation: crop diversification, mechanisation of cultivation and organic farming. The cultivation of basil fitted into the park strategy of promoting high quality local organic products, moreover the famous pesto sauce is produced locally and therefore locally produced basil has a market (**forecast of future human activities documented and mapped**).

Training courses for dry-stone wall builders were planned and carried out. Manual on the building rules for dry-stone walls as well as maintenance of terraces was produced. It was distributed locally to schools and private individuals, on the website (**aesthetic value enhanced or maintained, cultural value enhanced or maintained, respect for and/or understanding of local knowledge enhanced**)

The possibility of setting up a nursery for autochthonous vines was studied.

Job opportunities could arise in the future with the emergence of new agricultural cooperatives or micro-firms for the production of autochthonous vines, basil and pesto sauce (**economic status and relative wealth of coastal residents and/or resource users improved**).



A fair degree of awareness has been reached among the local population as well as visitors to the area vis-à-vis the problems that the territory has to face. Following a number of information actions (leaflets, signs, articles in Park magazine La Voce del Parco, internet postings, cable tv etc), 4500 people expressed interest in the initiative. Stakeholders were involved actively in the project mainly through the forum (**public understanding of environmental and social sustainability improved**).

Eleven meetings were organised during the project on different themes. The themes of the meetings varied from viticulture to management of wild boar in the area, from the road network to organic farming and from olive growing to aromatic herbs (**level of scientific knowledge held by public increased**).

Schools were involved in the project through visits to the pilot projects and presentation of the project in the local schools by the project guide forum (**public understanding of environmental and social sustainability improved**).

To disseminate the results of the project, an international conference was organised and a video of the project was undertaken by the tourism promotion body in English and Italian (**scientific understanding expanded through research and monitoring**).

The project team discovered a network of paths between the plots of land. This has encouraged the development of hiking tourism and has helped divert some of the pressures away from the area's beaches (**recreation opportunities enhanced or maintained**).

SOURCES:

LIFE and Coastal Management. European Commission 2012.

<http://ec.europa.eu/environment/life/publications/lifepublications/lifefocus/documents/coastal.pdf>

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=1922&docType=pdf

PROSIT. Project Layman Report.

http://www.minambiente.it/sites/default/files/archivio/allegati/life/LIFE_Ambiente/Layman_report_Procit.pdf



Good practice 2: MED-COASTS S-T - Strategies and Tools Toward Sustainable Tourism in Mediterranean Coastal Areas

LIFE00 ENV/IT/000167, 2000/2003

PROJECT DESCRIPTION:

Chapter four of the European Commission's Sixth Environment Action Plan notes that "Tourism and natural environment are closely inter-linked. Nature and bio-diversity, as well as cultural heritage, if not properly managed, can be seriously affected by uncontrolled tourism development. Fragile areas, such as islands, coastal and mountain areas provide bio-diversity richness that require particular attention and specific integrated management means when dealing with tourism development." Intensive tourism development in Rimini has given the resort, with its 2,700 hotels, the highest tourist density in Italy. Tourism strains the natural resources of the district, and causes problems linked to waste and pollution, road traffic, and urban congestion. Therefore, further planning and private operator policies need to be reconsidered, and must take into account changes in expectations of tourists, who are increasingly concerned with the environmental quality of their holiday destination and facilities.

The project, which ran from November 2000 to October 2003, was promoted and managed by the Province of Rimini (Italy), in close cooperation with the Municipality of Calvià (Balearic islands, Spain). Both mass-tourist destinations with about 40 millions of tourists per year, they aimed to share similar and partially complementary approaches for reducing tourism pressure and improving the local environmental quality of the coast line.

BEST PRACTISES and results (indicators):

Organization of two major dissemination events - one in Rimini, in June 2001, the second in Calvià, carried out in January 2003, both with several hundreds of participants coming from various European and other countries (**scientific understanding expanded through research and monitoring**).

Production of Integrated Coastal Management Plans for Rimini and Calvià coastal areas (two Plans, coherent with EU-ICZM approaches) (**management plan approved and implemented**).

In the Rimini area a special effort to implement Ecolabel certification and Green Purchasing criteria, coherent with EU approaches, was undertaken, with the publication of three specific manuals addressed to hotel owners and managers (**management plan enforced**).

An awareness-raising campaign was carried out, including a wide range of initiatives (leaflets, posters, video, etc) (**public understanding of environmental and social sustainability improved**).

In the Calvià area, the LIFE project added to experience developed around the implementation of a Local Agenda 21 scheme (**promoting sustainable development by assisting small-scale environmental projects at local level**) (**economic status and relative wealth of coastal residents and/or resource users improved**).

Pilot action in Rimini: the promotion of a car-sharing service for tourists (**management plan approved and implemented**).

Pilot action in Rimini: the re-qualification of Marano creek with an integrated project design, centred on phito-depuration techniques (**management plan approved and implemented**).



Pilot action in Rimini: the launch of the “Green beach” scheme to improve the environmental management of beach installations for tourists envisaging the improvement of energy/waste flow at the beach installations and the sustainable production of energy by private operators (**management plan approved and implemented**).

The active involvement of the main Italian hotels’ association (Federalberghi) contributed to good dissemination of the project results (**stakeholders identified and engaged**).

In addition a specific Network of Mediterranean mass tourism destination involving some 20 different partners was set up. The Network is being enlarged to other tourist destinations located outside the Mediterranean zone, such as Blackpool (UK), Birstonas (Lithuania), and also in Sweden (**management plan enforced**).

The Network has also recently launched an initiative (a partnership agreement) with a group of relevant Tour operators (TOI), in order to reinforce the relationship between them and Local Authorities, and identify the best strategies for the development of sustainable tourism (**stakeholders identified and engaged**).

At a more local level, the integration of the pilot actions developed during the implementation of the LIFE project continues (eg. support for the achievement of environmental certification by economic actors, the “Green beach” scheme, etc). (**management plan enforced**).

The project had created a network of cities and local authorities committed to sustainable tourism development. This network continues today, comprising 16 members from across the Mediterranean region (e.g. Israel, Turkey, Greece, Italy, Tunisia and Spain) (**management plan enforced**).

Hosting of a series of sustainable tourism conferences (**scientific understanding expanded through research and monitoring**).

Awareness-raising actions to make tourists and tour operators more aware of environmental concerns, including the publication of “Ten Golden Rules of the Sustainable Tourist”, a European first, with a print-run of 150,000 copies in 2003 (**scientific understanding expanded through research and monitoring**).

SOURCES:

LIFE and Coastal Management. European Commission 2012.

<http://ec.europa.eu/environment/life/publications/lifepublications/lifefocus/documents/coastal.pdf>

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=1923&docType=pdf

MED-COASTS. Project layman report.

http://www.minambiente.it/sites/default/files/archivio/allegati/life/LIFE_Ambiente/Layman_report_Medcoast.pdf



Good practice 3: ETICA - EMAS for tourism in internal and coastal area: integrated management

LIFE04 ENV/IT/000488, 2004/2007

PROJECT DESCRIPTION:

Abruzzo Region has a 120km long shoreline and a high income from seaside tourism. The region had 10 Blue Flag beaches in 2005 and 2006, making it one of Italy's leading areas for seawater quality. For several years, the region has supported studies and projects aimed at protecting coastal zones and solving urgent coastal problems. Nonetheless it remains necessary to improve the quality of services and management processes in local institutions. A fundamental goal was to adopt EMAS (Eco-Management and Audit System) in at least two local authorities.

The project aimed to assess the environmental situation in the seven participating municipalities of the Teramo district – Alba Adriatica, Giulianova, Martinsicuro, Pineto, Roseto degli Abruzzi, Silvi, and Tortoreto (113.000 inhabitants, 186 km² of surface, 45 km of shoreline, 3.2 millions of medium annual tourist presence). This enabled the establishment of environmental targets and the implementation of a specific planning programme. A further goal was the introduction of personnel training to underpin the adoption of the EMAS environmental management system.

GOOD PRACTICES and results (indicators):

Two of the seven participating coastal municipalities of the Teramo district – Martinsicuro and Silvi – adopted EMAS as a result of the ETICA project (management plan enforced).

Five of the seven municipalities – Martinsicuro, Pineto, Roseto, Silvi and Tortoreto – obtained ISO 14000 certification (management plan enforced).

The EMS (Environmental Management System) of the municipalities already certified under ISO 9001 or ISO 14000 has been reviewed and simplified so to involve the entire structure (management plan enforced).

A large quantity of data was collected on the integrated management of the coastal area. As a result, all participating municipalities now possess a complete and up-to-date environmental database (natural and social science information base established).

A series of training activities on environmental issues were carried out, involving the municipalities' and partners' operators. The training's aim was to efficiently update the seven partner Municipalities personnel on environmental issues and the relevant procedures so to be able to build their Environmental Management Systems, by conveying all the relevant information and skills to achieve the EMAS Registration (stakeholders identified and engaged).

Communication and dissemination activities carried out by the project included a series of six television programmes on ETICA project activities, broadcast on the main local TV channels; and the creation of a project logo, website, brochures and other documents (public understanding of environmental and social sustainability improved).

The project was represented at a number of European trade fairs (level of scientific knowledge increased).



To inform and involve local stakeholders, each participating municipality gave a presentation on the ETICA project, open to the public (**public understanding of environmental and social sustainability improved, stakeholders identified and engaged**).

Two workshops on EMAS implementation were organised by the Abruzzo region and Teramo district (**level of scientific knowledge increased**).

The project also transferred experience to other municipalities of the Teramo coastal area and those involved in the integral management of the regional environment (**level of scientific knowledge increased**).

Transfer of ETICA experience to Greece: a targeted promotional activity has been set up by ETICA in Greece, by contacting the most responsive local Administrations, interested in receiving the experiences. The positive feedbacks, arrived mainly from the Attica Region Public Administrations and some Aegean Isles (**management plan enforced**).

A dynamic analysis of systems model was drawn up and tested in order to identify the relations between occupation and tourism development. This simulation gives public administrators and local stakeholders a better understanding of the impact of environmental policies on tourism and the job market (**scientific understanding expanded through research and monitoring, stakeholders identified and engaged**).

Environmental benefits of the project included improvements in the handling of environmental matters by the participating municipalities, including the monitoring of energy use, which led to significant energy savings (**management plan approved and implemented**).

After the positive results achieved by the ETICA project, with the three -year –Regional Plan of environmental conservation and care 2006 - 2008, the Abruzzi region has decided to support the dissemination of public and private system of eco-management, -eco-friendly products. In particular, the planned actions aim to “*increase the value of internal areas included in protected areas*” (**management plan enforced**).

SOURCES:

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=search.dspPage&n_proj_id=2762&docType=pdf

ETICA. Project layman report.

http://ec.europa.eu/environment/life/project/Projects/index.cfm?fuseaction=home.showFile&rep=file&fil=LIFE04_ENV_IT_000488_LAYMAN.pdf



Good practice 4: Umayyad – Improvement of Mediterranean territorial cohesion through setup of tourist-cultural itinerary

European Neighbourhood Policy, financing instrument (ENPI) for the 2007-2013

Duration 36 months: December 2012 - December 2015.

PROJECT DESCRIPTION:

UMAYYAD project is a part of the multilateral cross-border cooperation "Mediterranean Sea Basin Programme" which in turn is a part of the new European Neighbourhood Policy and of its financing instrument (ENPI). It includes the European Union and partner countries regions placed along the shores of the Mediterranean Sea. The project gathers a network of 14 partners in seven countries in the Mediterranean region - Spain, Portugal, Italy, Tunisia, Egypt, Lebanon and Jordan - which share common Umayyad historical heritage. The project objective is to promote the sustainable and harmonious cooperation process at the Mediterranean Basin level by dealing with the common challenges and enhancing its endogenous potential to contribute to the economic, social, environmental and cultural development of the Mediterranean region.

In Mediterranean area, tourism has often led many countries and regions to develop the industry in a competitive way rather than in a cooperative manner. For obvious climatic reasons but also due the role played by tour operators, Mediterranean tourism destinations have based their growth essentially on a "sun and sea" vision and developed strategies aimed at maximizing short term profits. In this sense, project deals with a need to adopt and introduce new consumer models translated into environmentally friendly tourism products, respecting natural and cultural resources and diversifying the seasonal nature of tourism demand.

GOOD PRACTICES and results (indicators):

- Definition of target groups: 80 regional and local policy-makers, 50 tour operators and 300 entrepreneurs (**stakeholders identified and engaged**).
- Integrated strategy implemented addressing 3 dimensions: cultural heritage, diversification of the supply of tourism services, tourist infrastructure contributing to the seasonal tourism balance (**aesthetic value enhanced or maintained, cultural value enhanced or maintained, recreation opportunities enhanced or maintained, economic status and relative wealth of coastal residents and/or resource users improved**).
- Analysis of tourism infrastructure and opportunities for off-season offers (**scientific understanding expanded through research and monitoring**).
- Cultural itinerary on Umayyad heritage launched; Specific Mediterranean common
- tourism brand designed within the itinerary of Umayyad (**management plan approved and implemented**).
- Launching of project website (**level of scientific knowledge held by public increased, public understanding of environmental and social sustainability improved**).



- In Lebanon the Umayyad Museum was established (public understanding of environmental and social sustainability improved, cultural value enhanced or maintained).
- Development of Local Action Plans containing recommendations for enhancing cultural
- Tourism - design of thematic tourism packages within the Umayyad itinerary (management plan approved and implemented).
- Training sessions dedicated to policy-makers, tour operators and entrepreneurs (level of scientific knowledge increased, economic status and relative wealth of coastal residents and/or resource users improved)
- Organization of an exhibition devoted to cultural tourism and Umayyad itinerary (public understanding of environmental and social sustainability improved).
- Seven tourist guides (for each country) were designed (management plan approved and implemented).
- Presentation of the project at the International Tourism Fair (management plan enforced, management plan approved and implemented).
- Presentations of project in national mass media in all countries (public understanding of environmental and social sustainability improved).

SOURCES:

Jordan Umayyad Route. Andalusian Public Foundation El legado andalusí 2017.

<http://umayyad.eu/sites/default/files/Jordan.pdf>.

Project homepage: <http://umayyad.eu/>



Good practice 5: AtlantOS - Optimising and Enhancing the Integrated Atlantic Ocean Observing Systems

Horizon 2020 call BG-8-2014

April 2015 – June 2019

PROJECT DESCRIPTION:

AtlantOS is a project responding to the Horizon 2020 call: “Developing in-situ Atlantic Ocean Observations for a better management and sustainable exploitation of the maritime Resources”. AtlantOS is a research and innovation project that proposes the integration of ocean observing activities across all disciplines for the Atlantic, including European and non-European partners (“The Galway Statement on Atlantic Ocean Cooperation”, May 2013). The main goal of AtlantOS is the integration of the so far loosely-coordinated set of existing ocean observing activities to a sustainable, efficient, and fit-for-purpose Integrated Atlantic Ocean Observing System (IAOOS). The IAOOS is to form the ocean in-situ observing backbone of the Copernicus Marine Monitoring system, which is the marine part of the European Earth Observation Programme. This effort will build on existing elements of the Global Ocean Observing System in the context of GEOSS, the GEO Blue Planet Initiative, the Copernicus Marine Service and EMODnet. AtlantOS will ensure that data are readily accessible and useable.

AtlantOS contributions are new information relevant to sectors such as transport, tourism, fisheries, marine biotech, resource extraction and energy with existing requirements. Hence, the AtlantOS initiative will have a long-lasting and sustainable contribution to the societal, economic and scientific benefit arising from this integrated approach.

The AtlantOS partnership comprises 57 European and 5 non-European organisations (including research institutes, universities, SMEs and industry partners) from 18 states - Belgium, Brazil, Canada, Croatia, Denmark, Faroe Islands, France, Germany, Ireland, Italy, Norway, Poland, Portugal, South Africa, Spain, the Netherlands, United Kingdom and United States of America.

The project is coordinated by GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany.

GOOD PRACTICES and results with an emphasis on broader societal impacts:

Increasing Atlantic Ocean coastal safety – development of a comprehensive world map of storm surges. Coastal flooding represents one of the major challenges of global climate change for humanity. Storm surges and oceanic waves are the major cause of extreme sea levels, causing devastating coastal impacts around the world



Development of a new paradigm for ship routing. Following this paradigm, the AtlantOS task on ship routing will help to achieve a maritime transport system that is resource-efficient, more climate and environmental friendly and safer for humans.

Developing an operational forecast system for Atlantic albacore tuna (SEAPODYM). Operational system will help to better understand changes in catch rates due to environmental variability and can assist in designing research sampling and collect of fishing statistics, and in fighting against illegal, unregulated and unreported fishing activity (populations of target species for extractive or non-extractive use restored to or maintained at desired reference points, nutritional needs of coastal residents met or improved, improved availability of locally-caught seafood for public consumption).

Harmful Algal Blooms (HAB) Bulletins. Harmful and potentially toxic phytoplankton (high and low biomass forming HAB species) negatively affects fisheries and shellfisheries. The AtlantOS pilot action on HABs, focuses on products that can help warn end-users of the imminent arrival of harmful algal blooms. The HAB alerts/bulletins give aquaculture producers an opportunity to adapt their culture and harvesting practices before a bloom arrives (nutritional needs of coastal residents met or improved, improved availability of locally-caught seafood for public consumption).

Oil-spill risk mapping. AtlantOS project generates new products that describe the impact of oil spill accidents on the whole Atlantic coastlines using operational oceanographic analyses(unnatural threats and human impacts eliminated or minimized inside and outside the marine area).

SOURCES:

AtlantOS Briefing paper 2: <https://www.atlantos-h2020.eu/download/Media/newsletters-briefing-apers/AtlantOS-Briefing-Paper-2-Digital-Version.pdf>.

AtlantOS Newsletter 2: <https://www.atlantos-h2020.eu/download/Media/newsletters-briefing-apers/AtlantOS-newsletter-2-Digital-Version-1.0.pdf>.

CIMA - Centro de Investigação Marinha e Ambiental, Universidade do Algarve Portugal.

<http://www.cima.ualg.pt/cimaualg345/index.php/pt/>.

Project website: <https://www.atlantos-h2020.eu/>.



3. Recognized Tourism Conflicts in coastal tourism destinations

Conflicts	Projects
Tourism and natural environment (biodiversity, coastline)	MED-COAST
Tourism and quality of life (waste and pollution, road traffic, urban congestion, noise)	MED-COAST, ETICA
Tourism and the sustainable production and consumption of energy	MED-COAST
Tourism and quality of sea water	ETICA
Tourism and air and water quality	MED-COAST, ETICA
Disagreements and conflicts between stakeholders from the fields of environmental conservation, living standards and economic development	ETICA
Negative local public opinion regarding congestions caused by tourism development	ETICA
Local population has limited access to the coast and agricultural land due to the development of tourism	PROSIT
Tourism and conservation of cultural landscape (agricultural terraces)	PROSIT
Economic development and conservation of cultural landscape (agricultural terraces)	PROSIT
Tourism and local agricultural knowledge and skill	PROSIT
Conflict between mariculture interests and other stakeholders around the bay (oil transshipment terminal, fishing port, tourism)	INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY
The construction of dams, harbour extension work and tourist developments are resulting in problems of coastal erosion, water pollution, eutrophication and changes in the circulation and characteristics of the water	MARIA



4. Shapetourism Indicators for Evaluation of ICZM and MSP in Coastal Tourism Destinations

1. Indicator: Effective authority for MSP established and responsible institution(s) identified

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Inputs

Goals:

- Ensuring adequate institutional, policy and legal arrangements

Objectives:

- Ensuring the coordination and coherence of administrative actors and policies
- Supporting integrated management through adequate legislation and regulations
- Assessing the environmental impacts of policies, plans, programmes and projects
- Resolving conflicts over coastal space and resources

Type of indicator: Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: area defined, institutions involved, organizational chart

Example from the North Sea plan:

THE DEVELOPMENT OF A CONSENSUS BASED INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY

Bantry Bay is situated on the southern coast of Ireland at the western end of County Cork. Bantry Bay is also home to the state's oil transshipment terminal, one of Ireland's largest fishing ports, has the country's highest density of aquaculture units and is one of its busiest tourist areas.

These diverse attractions, activities and the attendant development potential heightened the demand on the area's space and resources. There are a range of views and aspirations as to how the area should develop and a range of agencies promoting and regulating development in the area, with little or no coordination. Before the LIFE project no Coastal Zone Management legislation existed in Ireland. There was therefore a need to improve the management of the area.

Against this background, in January 1997, Cork County Council, in partnership with the Coastal Resources Centre of the National University of Ireland, Cork and the Nautical Enterprise Centre of the Cork Institute of Technology commenced participation in the European Commission LIFE programme.

The aim of the project was to develop a consensus-based Integrated Coastal Zone Management strategy for Bantry Bay. This basic objective was to be achieved through the following focused objectives: The



establishment of a stakeholder committee, identification of stakeholder goals and development and implementation of an agreed stakeholder charter.

2. Indicator: Stakeholders identified and engaged

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Process

Goals:

- Enhancing information, knowledge, awareness and participation

Objectives:

- Ensuring sustained support from engaged stakeholders
- Supporting ICOM through partnerships

Type of indicator: Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: stakeholders involved, coverage of important sectors

Examples from Mediterranean plans:

ETICA - EMAS for tourism in internal and coastal area: integrated management

The project aimed to assess the environmental situation in the seven participating municipalities of the Teramo district, Abruzzo Region, Italy. A series of training activities on environmental issues were carried out, involving the municipalities' and partners' operators. The training's aim was to efficiently update the seven partner Municipalities personnel on environmental issues and the relevant procedures so to be able to build their Environmental Management Systems, by conveying all the relevant information and skills to achieve the EMAS Registration.

3. Indicator: Science advisory committee established

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Process

Goals:

- Enhancing information, knowledge, awareness and participation

Objectives:

- Ensuring that management decisions are better informed by science



- Improving awareness on coastal issues

Type of indicator: Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: the involvement of scientific disciplines and institutions

Example from the North Sea plan:

THE DEVELOPMENT OF A CONSENSUS BASED INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY, Ireland

A publicly accessible GIS was created and made available in the Charter Office, local libraries and on the Internet. The GIS included a range of information relating to administration, topography, infrastructure, coastal structures, nautical features, the environment, planning and land cover data.

Examples from Mediterranean plans:

PEGASO: People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

The objectives of the project, which included the participation of scientific institutions, were: 1) to exploit and refine existing scientific expertise and methods relating to indicators, environmental accounting, scenario construction, participatory approaches and valuation, to create a suite of tools and techniques that can be used to make a multi-scale assessment in the coastal zone in the Mediterranean and Black Sea Basins; 2) to integrate the suite of tools into a common analytical framework that can form the technical and methodological basis of the assessment platform for ICZM that will be delivered by the project; 3) to develop training materials and opportunities related to the suite of assessment tools that can support the wider capacity development activities initiated by the project; 4) to qualify the choices and uses of tools/methods based on an integrated expertise in order to recommend the best practises responding to various applications (issues, scales).

4. Indicator: MSP goals identified and objectives specified

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Outputs

Goals:

- Enhancing information, knowledge, awareness and participation
- Ensuring adequate management processes and implementation

Objectives:

- Ensuring that management decisions are better informed by science
- Improving awareness on coastal issues
- Implementing and enforcing ICOM plans and actions



Type of indicator: Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: goals and objectives defined, areas of operation specified

Examples from Mediterranean plans:

PEGASO: People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

Example of an effectively prepared plan of project's goals:

- Project Management
- Shared ICZM governance Platform for Mediterranean and Black Sea basins
- Enabling a shared information infrastructure for Mediterranean and Black Sea basins
- Multi-scale tools, methods and models for integrated assessment
- Collaborative applications at various scales and Integrated Regional Assessment for Mediterranean and Black Sea basins
- Building and enhancing capacity through training and foster knowledge exchange
- Dissemination of results

5. Indicator: External pressures on marine and coastal areas identified and documented

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Outputs

Goals:

- A healthy and productive environment

Objectives:

- Minimize habitat destruction and alteration from human pressures

Type of indicator: Impact Indicator: measures to show that the strategy, plan or programme outputs are achieved – medium-term outcomes. Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: list of problems specified, scientific, political, economic and environmental characteristics defined, maps

Examples from Mediterranean plans:

MED-COASTS S-T - Strategies and Tools Toward Sustainable Tourism in Mediterranean Coastal Areas

The project, which ran from November 2000 to October 2003, was promoted and managed by the Province of Rimini (Italy), in close cooperation with the Municipality of Calvià (Balearic islands, Spain). Both mass-tourist



destinations with about 40 millions of tourists per year, they aimed to share similar and partially complementary approaches for reducing tourism pressure and improving the local environmental quality of the coast line.

Intensive tourism development in Rimini has given the resort, with its 2,700 hotels, the highest tourist density in Italy. Tourism strains the natural resources of the district, and causes problems linked to waste and pollution, road traffic, and urban congestion. Therefore, further planning and private operator policies need to be reconsidered, and must take into account changes in expectations of tourists, who are increasingly concerned with the environmental quality of their holiday destination and facilities.

6. Indicator: Ecologically and biologically significant areas (EBSAs) identified, documented, and mapped

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Outputs

Goals:

- A healthy and productive environment

Objectives:

- Minimize habitat destruction and alteration from human pressures

Type of indicator: Impact Indicator: measures to show that the strategy, plan or programme outputs are achieved – medium-term outcomes. Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: areas defined and mapped

Examples from Mediterranean plans:

PEGASO: People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

Implementation process in the project:

Identify (i) the key natural resources attached to the territory, (ii) the different functions associated, (iii) main territorial dynamics linked to resources management and (iv) role of stakeholder in this dynamics and resources management. The approach starting on natural resources is ending on the territory.

Step 1: implement an institutional mapping (in a participative and collaborative way) according to issues and related resources; Optional: SWOT analysis;

Step 2: gets a characterization of actors' economic weight for each activity weighing over these resources (activities based on direct or indirect uses of site shared resources)...



Step 3: ...at an ecosystemic scale, according to boundaries linked to natural resources uses (river basins, sub-river basins...), to cultural or economic logics, etc.

7. Indicator: Forecasts of future human activities documented and mapped

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Outputs

Goals:

- Enhancing information, knowledge, awareness and participation

Objectives:

- Ensuring that management decisions are better informed by science
- Improving awareness on coastal issues

Type of indicator: Impact Indicator: measures to show that the strategy, plan or programme outputs are achieved – medium-term outcomes. Performance Indicator: measures to show that activities are undertaken - short-term outcomes

Indicator parameters: size, area and types defined and mapped

Examples from Mediterranean plans:

PEGASO: People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

Projecting the conditions of future human activities includes examining factors such as the goods and services provided by the ecosystem, along with wider area's issues such as erosion, land husbandry, deforestation and pollution.

8. Indicator: Management Plan approved and implemented and enforced

Group of indicators: Governance

Subgroup of indicators: Governance indicators of Outputs

Goals:

- Mainstreaming ICOM into sustainable development; Economic instruments mainstreaming
- Enhancing the international dimension of ICOM



Objectives:

- Mainstreaming coastal and ocean management into sustainable development
- Enhancing ICOM by implementing international recommendations and guidance
- Enhancing ICOM through involvement in international cooperative initiatives
- Enabling ICOM through implementation of international agreements

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: implementation of plan in regional sustainable development, impact on economic, social and environmental fields, integration of results in comparable international practise

Examples from Mediterranean plans:

MED-COASTS S-T - Strategies and Tools Toward Sustainable Tourism in Mediterranean Coastal Areas

The project was promoted and managed by the Province of Rimini (Italy), in close cooperation with the Municipality of Calvià (Balearic Islands, Spain). Both regions are mass-tourist destinations with about 40 millions of tourists per year and are share similar approaches for reducing tourism pressure and improving the local environmental quality of the coast line. Pilot action in Rimini had launched the “Green beach” scheme to improve the environmental management of beach installations for tourists envisaging the improvement of energy/waste flow at the beach installations and the sustainable production of energy by private operators.

The project had created a network of cities and local authorities committed to sustainable tourism development. This network continues today, comprising 16 members from across the Mediterranean region (e.g. Israel, Turkey, Greece, Italy, Tunisia and Spain).

Examples from Mediterranean plans:

ETICA - EMAS for tourism in internal and coastal area: integrated management

Transfer of ETICA experience to Greece: a targeted promotional activity has been set up by ETICA in Greece, by contacting the most responsive local Administrations, interested in receiving the experiences. The positive feedbacks, arrived mainly from the Attica Region Public Administrations and some Aegean Isles.

9. Indicator: Economic status and relative wealth of coastal residents and/or resource users improved

Group of indicators: Socio-economic indicators

Subgroup of indicators: Livelihood Indicators

Goals:

- A healthy and productive economy
- Social cohesion



Objectives:

- Maximize economic development
- Increase employment
- Foster economic diversification
- Maintain equitable population dynamics

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: employment, diversity of economic sectors, young population, gender equality

Example from the North Sea plan:

THE DEVELOPMENT OF A CONSENSUS BASED INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY, Ireland

Potential for creating new jobs in tourism and recreation amenities: To involve local communities in consultation about new developments, which will help to support the local population, reduce emigration and provide a range of choices for new employment opportunities in leisure activities for local people.

10. Indicator: Local access to markets and capital improved

Group of indicators: Socio-economic indicators

Subgroup of indicators: Livelihood Indicators

Goals:

- A healthy and productive economy
- Social cohesion

Objectives:

- Maximize economic development
- Increase employment
- Foster economic diversification
- Maintain equitable population dynamics

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: consumption of locally produced goods, quality standards, changes in the local labour market

Examples from Mediterranean plans:

PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape:



The pilot project was characterised by three main elements of innovation: crop diversification, mechanisation of cultivation and organic farming. The cultivation of basil fitted into the park strategy of promoting high quality local organic products, moreover the famous pesto sauce is produced locally and therefore locally produced basil has a market.

11. Indicator: Aesthetic value enhanced or maintained

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Non-monetary Benefits to Society

Goals:

- Cultural integrity

Objectives:

- Maintain cultural integrity

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: important aesthetic areas and objects mapped both in urban and rural landscapes

Examples from Mediterranean plans (the same description is used as in the case of indicator Cultural value enhanced or maintained):

PROSIT - Planning and restoring of Cinque Terre costal traditional agricultural landscape

The agricultural landscape of Europe's Mediterranean coasts is in some places still morphologically characterised by steps, supported by dry-stone walled terraces that were constructed to prevent erosion and thereby create conditions suitable for cultivation. Due to its peculiar orography, Liguria is one of the regions in Europe that is most characterised by the presence of terraces.

In a well-known stretch of coastline called 'Cinque Terre', the terraced landscape is so spectacular and unique that in 1997 UNESCO designated it as a 'World Natural and Cultural Heritage'. In 1999 the area became a National Park. Today, the terraced landscape of the Cinque Terre is characterised by intense processes of land abandonment and disuse, caused both by the practical and economic difficulties of maintenance and by social changes occurring over the last century. The PROSIT project is an attempt to solve the problem through integrated and sustainable planning.

12. Indicator: Recreation opportunities enhanced or maintained

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Non-monetary Benefits to Society



Goals:

- A healthy and productive economy

Objectives:

- Increase employment
- Foster economic diversification

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: public recreation areas maintained or enlarged, areas and objects important for local population and visitors of the region mapped, areas where accessibility to the coast is guaranteed to be maintained or increased

Examples from Mediterranean plans:

PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape

The project team discovered a network of paths on the agricultural terraces between the plots of land. This has encouraged the development of hiking tourism and has helped divert some of the pressures away from the area's beaches.

Example from the North Sea plan:

THE DEVELOPMENT OF A CONSENSUS BASED INTEGRATED COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY, Ireland

Apart from walking and cycling the following activities and facilities are promoted for visitors to the area: many sandy beaches, several golf courses, shore fishing, sailing, boating, canoeing, kayaking, many archaeological and historical sites, island trips.

13. Indicator: Cultural value enhanced or maintained

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Non-monetary Benefits to Society

Goals:

- Cultural integrity

Objectives:

- Maintain cultural integrity

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes



Indicator parameters: linguistic diversity, traditional economic activities, traditional land and water tenure, lands and waters managed or co-managed by indigenous and local communities, movement away of indigenous and local communities

Examples from Mediterranean plans (the same description is used as in the case of indicator *Aesthetic value enhanced or maintained*):

PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape

The agricultural landscape of Europe's Mediterranean coasts is in some places still morphologically characterised by steps, supported by dry-stone walled terraces that were constructed to prevent erosion and thereby create conditions suitable for cultivation. Due to its peculiar orography, Liguria is one of the regions in Europe that is most characterised by the presence of terraces.

In a well-known stretch of coastline called 'Cinque Terre', the terraced landscape is so spectacular and unique that in 1997 UNESCO designated it as a 'World Natural and Cultural Heritage'. In 1999 the area became a National Park. Today, the terraced landscape of the Cinque Terre is characterised by intense processes of land abandonment and disuse, caused both by the practical and economic difficulties of maintenance and by social changes occurring over the last century. The PROSIT project is an attempt to solve the problem through integrated and sustainable planning.

14. Indicator: Adverse effects on traditional practices and relationships or social systems avoided or minimized

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Compatibility Between MSP and Local Culture

Goals:

- Cultural integrity
- Social cohesion

Objectives:

- Maintain cultural integrity
- Maintain equitable population dynamics

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: linguistic diversity, traditional economic activities, traditional land and water tenure, lands and waters managed or co-managed by indigenous and local communities, movement away of indigenous and local communities



Examples from plans:

Several projects and plans (COASTAL ZONE MANAGEMENT STRATEGY FOR BANTRY BAY, PROSIT, MED-COASTS, ETICA – EMAS) include indicators related to public shoreline access or access to land as very important regarding adverse effects on traditional practices and relationships or social systems, especially in large touristic and infrastructure areas.

15. Indicator: Cultural features or historical sites and monuments linked to marine or coastal resources protected

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Compatibility Between MSP and Local Culture

Goals:

- Cultural integrity

Objectives:

- Maintain cultural integrity

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: number and type of heritage resources identified and mapped, percentage of heritage resources that are protected or are vulnerable or being damaged, use of cultural heritage resources and most visited sites

Examples from Mediterranean plans:

THE PORTUGUESE MARITIME SPATIAL PLAN (PMSP)

76% of the Portuguese population lives in coastal areas, and coastal tourism, ports and leisure are one of the most important sectors among the Portuguese maritime activities, wherefore spatial management of multiple sea uses is crucial.

The establishment of a management regime should allow the protection of national heritage as well as the development of potential activities and constitute a framework of international, national, sector, public and private policies for spatial uses of the ocean.

PMSP has 8 Categories of marine resources and activities. One of them is also “Classified areas of culture and heritage”. Thematic maps for potential developments were created for conservation and heritage. Besides historical sites sub aquatic cultural heritage was included also.



16. Indicator: Respect for and/or understanding of local knowledge enhanced

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Environmental Awareness

Goals:

- Cultural integrity
- Social cohesion

Objectives:

- Maintain cultural integrity
- Maintain equitable population dynamics

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: inclusion of traditional industries in tourism, protection of agricultural land, typical local products identified

Examples from Mediterranean plans:

PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape

Training courses for dry-stone wall builders on agricultural terraces were planned and carried out. Manual on the building rules for dry-stone walls as well as maintenance of terraces was produced. It was distributed locally to schools and private individuals, on the website.

17. Indicator: Public's understanding of environmental and social 'sustainability' improved

Group of indicators: Socio-economic indicators

Subgroup of indicators: Indicators of Environmental Awareness

Goals:

- Social cohesion
- A healthy and productive environment

Objectives:

- Maintain equitable population dynamics



- Minimize habitat destruction and alteration from human pressures

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: workshops, public presentations of results, involvement of the local population in planning process, involvement of schools and local associations

Examples from Mediterranean plans:

PROSIT - Planning and restoring of Cinque Terre coastal traditional agricultural landscape

A fair degree of awareness has been reached among the local population as well as visitors to the area vis-à-vis the demographic and economic problems that the territory has to face. Following a number of information actions (leaflets, signs, articles in Park magazine La Voce del Parco, internet postings, cable tv etc), 4500 people expressed interest in the initiative. Stakeholders were involved actively in the project mainly through the forum. Schools were involved in the project through visits to the pilot projects and presentation of the project in the local schools by the project guide forum.

18. Indicator: Unnatural threats and human impacts eliminated or minimized inside and outside the marine and coastal area

Group of indicators: Ecological and biological indicators

Subgroup of indicators: Habitat Protection Indicators

Goals:

- A healthy and productive environment

Objectives:

- Minimize habitat destruction and alteration from human pressures

Type of indicator: Sustainability Indicator: measures to show that the strategy, plan or programme purpose is realised - long-term outcomes

Indicator parameters: analysis and mapping of pollution, waste, eutrophication, unorganized new paths, new construction

Examples from Mediterranean plans:

MARIA: INTEGRATED MANAGEMENT PROGRAMME FOR RIA DE AVEIRO

The project area, covering 600 km², stretches around the Aveiro Lagoon, a Ria area of key importance for nature conservation. The Lagoon has been highly developed mainly due to the need to find low-cost space, whilst the project area represents innumerable diversified interests, with a complex system of jurisdictional divisions. This has caused conflicts which are now reflected in the quality of the environment and the natural resources of the coastal lagoon/dune system. The main threats to the eco-system are the construction of



dams, harbour extension work and tourist developments which are resulting in problems of coastal erosion, water pollution and eutrophication along with changes in the circulation and characteristics of the water.

The project aimed to provide a pilot model for the concertation of distinctive interests and coordination of actions between different levels of the administration, key stake holders and the general public in coastal zone management.

Examples from Mediterranean plans:

PEGASO: People for Ecosystem-based Governance in Assessing Sustainable development of Ocean and coast

Unnatural threats and human impacts identified in the project are:

- Marine litters - Macro Wastes
- Micro pollutants (contaminants)
- Microbial pathogens organisms
- Accidental and operational oil spill
- Eutrophication
- Invasive species
- Degradation of exploited biological resources (fisheries, aquaculture)
- Loss of sea floor integrity, biodiversity and degraded marine food webs
- Degradation related to introduction of energy and alteration of hydrological conditions
- Erosion



RELEVANCE OF SELECTED INDICATORS FOR TOURISM

GROUP	SUBGROUP	INDICATOR	RELEVANCE		
			TOURISM	CULTURAL HERITAGE	COASTAL AREAS
GOVERNANCE	Governance indicators of Inputs	<i>1.Effective authority for MSP established and responsible institution(s) identified</i>	+++	***	###
	Governance indicators of Process	<i>Stakeholders identified and engaged</i>	++	**	###
		<i>Science advisory committee established</i>	+	**	##
	Governance indicators of Outputs	<i>MSP goals identified and objectives specified</i>	++	**	###
		<i>External pressures on marine and coastal areas identified and documented</i>	++	**	##
		<i>Ecologically and biologically significant areas (EBSAs) identified, documented, and mapped</i>	+	*	#
		<i>Forecasts of future human activities documented and mapped</i>	+	*	##
		<i>Management Plan approved and implemented and enforced</i>	++	**	###
SOCIO-ECONOMIC INDICATORS	Livelihood Indicators	<i>Economic status and relative wealth of coastal residents and/or resource users improved</i>	++	*	###
		<i>Local access to markets and capital improved</i>	++	*	###
	Indicators of Non-monetary Benefits to Society	<i>Aesthetic value enhanced or maintained</i>	+++	***	##
		<i>Recreation opportunities enhanced or maintained</i>	+++	**	##



		<i>Cultural value enhanced or maintained</i>	+++	***	##
	Indicators of Compatibility Between MSP and Local Culture	<i>Adverse effects on traditional practices and relationships or social systems avoided or minimized</i>	++	***	#
		<i>Cultural features or historical sites and monuments linked to marine or coastal resources protected</i>	+++	***	#
	Indicators of Environmental Awareness	<i>Respect for and/or understanding of local knowledge enhanced</i>	++	**	###
		<i>Public's understanding of environmental and social 'sustainability' improved</i>	++	**	##
ECOLOGICAL AND BIOLOGICAL INDICATORS	Habitat Protection Indicators	<i>Unnatural threats and human impacts eliminated or minimized inside and outside the marine and coastal area</i>	++	**	###

*/+/# low relevance

**/++/## medium relevance

***/+++/### high relevance

