

COASTGAP Audit Report

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Environment and Housing Policies



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Department of Hérault



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coastgap.facecoast.eu

PAP/RAC is one of Regional Activity Centres of the Mediterranean Action Plan – UNEP. Its mandate includes, among others, assistance to the Mediterranean countries in the adoption and implementation of the ICZM Protocol to the Barcelona Convention.

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Contents

1 - INTRODUCTION	1
2 - PROJECT DESCRIPTION	1
3 - CAPITALISATION PROCESS WITHIN THE PROJECT IN GENERAL.....	2
4 - OVERVIEW BY INDIVIDUAL BEST PRACTICES.....	5
Best Practice 1: Guidelines for the environmental impacts of coastal protection works and plans.....	5
Best Practice 2: SICELL Littoral Cells management system	6
Best Practice 3: Bologna Charter 2012	9
Best Practice 4: Article 8 – Setback	10
Best Practice 5: Regional Strategic Plan	25
Best Practice 6: PEGASO Spatial Data Infrastructure and Geoportal for ICZM.....	26
Best Practice 7: Risk Model COFLERMAP – Coastal Flood Erosion Map	28
Best Practice 8: Integrated Quality Model for the development of sustainable routes	29
Best Practice 9: Coastal Observatory	30
Best Practice 10: DIVA model	31
Best Practice 11: Coastal Video Monitoring Network	32
Best Practice 12: DSS to determine the best defence planning	33
5 - CONCLUSION	34
References	36

1 - INTRODUCTION

The Mediterranean coastal zones are among the most threatened by climate change effects, also considering their environmental and infrastructural value and concomitant strains like erosion, salt water intrusion, littoralisation, etc... A lot of projects have been implemented over the years attempting, more or less successfully, to cope with those issues. Unfortunately, those efforts have rarely been coordinated between them and their findings and results remain isolated. In order to save time, money and efforts, a wise approach would be to make a link among them, identify those that have had the best results and promote the good and integrated ones. In this way those projects would have a good follow-up, which is often lacking, and a critical mass of good practices would be achieved for changing the ways of thinking and acting.

The COASTGAP project has been designed to capitalise on good practices in the Mediterranean to the benefit of the whole region. The aim of this capitalization is to gather and capitalize on the contributions from the projects dealing with the same matter in the frame of the adaptation policy to climate change and sustainable development. The target is to promote and achieve an exchanging space, taking into account the ICZM approach and the Mediterranean (and extra-Mediterranean) experiences. In such a way, the main issue is open towards other interdisciplinary and multi-sectoral projects as "link units" through which exchange will be possible with other interlaced issues as far as they are concerned. This principle allows other clusters focused on different main issues to enjoy the participation of some of the projects if the topics concern them, improving their framework with integrated solutions. This platform also gives more visibility to the individual programmes:

- by supporting the creation of effective synergies among projects,
- by combining projects results/best practices, producing joint packages of thematic proposals,
- by strengthening awareness of new stakeholders of what has been done,
- by giving insights into the future programming.

2 - PROJECT DESCRIPTION

The COASTGAP project is a result of more than 10 years of experience, among many Mediterranean coastal administrations and institutions, which established the cluster FACECOAST in 2011. COASTGAP aims to capitalize 12 best practices from 9 projects of the cluster (from MED and other programmes), to produce governance and adaptation policies aimed at reducing risks along the coastal zones and foster their sustainable development. In order to provide an operational and coherent strategy for the 2014-2020 financial period, supported by multi-level agreements among coastal administrations, COASTGAP aims to design, characterize and prepare to launch the Joint Action Plan (JAP) on Adaptations to Climate Changes in the Mediterranean Basin. The aim of this JAP is to concretize priority initiatives in the Mediterranean coastal zones to face climate change effects and coastal zone risk at the Mediterranean basin scale. The Joint Action Plan will feed the future Macro-Project for coastal zone risk management at the Mediterranean basin scale, "BEACHMED-3", which follows the strategy included in the "Bologna Charter 2012" (policy recommendations).

The COASTGAP JAP concerns the specification of the main envisaged actions/projects of the Macro-project "BEACHMED-3" and the methods to deploy them, sharing it among a wide Mediterranean partnership.

The Project is implemented by the following partners:

1. Lazio Region – Directorate of Infrastructure, the Environment and Housing Policies, Italy
2. Emilia-Romagna Region – Directorate General of Environment and Soil and Coastal Protection, Protected Coastal Area, Italy

3. Department of Hérault, France
4. Region of Eastern Macedonia and Thrace (REMTH), Greece
5. Decentralized Administration of Crete
6. Tuscany Region, Italy
7. Liguria Region, Italy
8. Ministry of Communications & Works of Cyprus – Department of Public Works, Cyprus
9. “Pablo de Olavide” University of Seville (UPO), Spain
10. Port Institute of Studies and Cooperation of the Valencian Community (FEPORTS), Spain
11. Autonomous University of Barcelona, Spain
12. Centre for Studies and Expertise on Risk, Environment, Mobility and Management (CEREMA), France
13. Christian-Albrechts University of Kiel, Germany
14. Public Institution RERASD for Coordination & Development of the Split-Dalmatia County, Croatia
15. Dubrovnik-Neretva County, Regional Development Agency (DUNEA), Croatia

The Project was launched on July 1, 2013 and is expected to be terminated by December 31, 2014. The total budget of the Project is 1,360,000.00 €. It was divided into four Work Packages:

WP1 - Project management

WP2 - Communication & Mainstreaming

WP3 - Capitalisation & Networking

WP4 - Joint Action Plan on MED Adaptation to Climate Change

The working methods included:

- Census and analysis of the bodies that carry out coastal monitoring activities (through dissemination of questionnaires);
- Dissemination of the beach evolution monitoring protocols between the partners and the project network;
- Investigation on the information needed by the bodies in charge of coastal protection and its supply;
- Providing proposals for the network of observatories in terms of organisation and operation (possible activities to perform, estimation of potential costs to be paid by stakeholders interested in supporting monitoring activities, etc.).

As the UNEP/MAP component specialised in ICZM and in charge of institutional coordination of ICZM Protocol implementation, PAP/RAC was contracted to act as External Quality Advisor. Its task is to assess the process of capitalization of good practices and the products of that process. The present report covers the work done and outputs delivered by the project partners.

3 - CAPITALISATION PROCESS WITHIN THE PROJECT IN GENERAL

Given its main objective, it might be said that the COASTGAP project is well focused and represents an important step towards sustainability along the Mediterranean coasts. Due to the importance of the coast for the Mediterranean countries, the number of projects focused on the coastal challenges in Mediterranean is considerable.

A majority of the countries around the Mediterranean Sea largely focus their economy on the natural resources. The Mediterranean type of tourism is in this position in the first place, as the Mediterranean offer is still largely based on sun, sea and sand. Tourism is an industry that largely depends on the number of sunny days (or better to say, the weather conditions), sea quality, and sand availability and quality. Therefore, it is not a wonder that so many projects are created with the aim of securing a sound base for tourism, or a sound base for the economy. Their impact, on the other hand,

is a different story. Therefore, the idea of capitalisation of different projects' experiences is by itself excellent.

One of the tasks of this report is to assess the quality of the process. For that, the main source of information has been the web site of the project. The assessment has been performed in October 2014. At this stage the following outputs for each of the Best Practices (BPs) were available:

<p>BP1: EIA Guidelines Capitalisation (5)</p> <ul style="list-style-type: none"> ▪ EIA Guidelines Capitalisation ▪ EIA Keypoint Table ▪ Technical Report 3.1A BP1 (a) ▪ Technical Report 3.1A BP1 (b) ▪ Technical (Feedback) Report 3.1B BP1 	<p>BP7: COFLERMAP Capitalisation (6)</p> <ul style="list-style-type: none"> ▪ COFLERMAP Technical Report ▪ COFLERMAP Capitalisation ▪ COFLERMAP Keypoint Table ▪ Technical Report 3.1A BP7 (a) ▪ Technical Report 3.1A BP7 (b) ▪ Technical Report 3.1B BP7
<p>BP2: SICELL Capitalisation (6)</p> <ul style="list-style-type: none"> ▪ SICELL Implementation Capitalisation ▪ SICELL Keypoint Table ▪ SICELL Capitalisation ▪ Technical Report 3.1A BP2 ▪ Minutes meeting 7 May 2014 ▪ Technical (Feedback) Report 3.1B BP2 	<p>BP8: IQM Model Capitalisation (5)</p> <ul style="list-style-type: none"> ▪ SHIFT Transferable IQM Model ▪ Outputs and results to be capitalised_BP8_IQMSHIFT ▪ Keypoint_table_BP8_IQM_SHIFTGUIDELINES ▪ Technical Report 3.1A BP8 ▪ Technical (Feedback) Report 3.1B BP8
<p>BP3: Bologna Charter Capitalisation (5)</p> <ul style="list-style-type: none"> ▪ BOLOGNA CHARTER 2012 ▪ BOLOGNA CHARTER Capitalisation ▪ BOLOGNA CHARTER keypoint table ▪ bologna charter coordination board profile ▪ Technical Report 3.1A BP3 	<p>BP9: Coastal Observatory (5)</p> <ul style="list-style-type: none"> ▪ Coastal Observatory Capitalisation ▪ Coastal Observatory Keypoint Table ▪ Technical Report 3.1A BP9 ▪ Technical Report 3.1B BP9 ▪ Minutes - Technical meeting Liguria/Toscana 29 July 2014
<p>BP4: ART.8 Methodology Capitalisation (6)</p> <ul style="list-style-type: none"> ▪ ART.8 Capitalisation ▪ ART.8 Explanatory Setback ▪ SICELL Keypoint Table ▪ ART.8 Shape-Framework and Methodology ▪ Technical Report 3.1A BP4 ▪ Technical Report 3.1B BP4 	<p>BP10: DIVA Model Capitalisation (4)</p> <ul style="list-style-type: none"> ▪ DIVA BP to capitalize ▪ Keypoint Table DIVA ▪ Technical Report 3.1A BP10 ▪ Technical Report 3.1B BP10
<p>BP5: Macro-project Capitalisation (2)</p> <ul style="list-style-type: none"> ▪ COASTGAP capitalisation Regional Strategic Plan ▪ Technical Report 3.1A BP5 	<p>BP11: Webcam Network Capitalisation (4)</p> <ul style="list-style-type: none"> ▪ COASTGAP capitalisation resmar network ▪ Keypoint Table BP11_webcam_network ▪ Technical Report 3.1A BP11 ▪ Technical Report 3.1B BP11
<p>BP6: SDI and GEOPORTAL Capitalisation (8)</p> <ul style="list-style-type: none"> ▪ COASTGAP-Capitalisation 3.1A - SDI Geoportal ICZM ▪ Annex I-Keypoint table SDI and Geoportal for ICZM ▪ Annex II-Need for data sharing ▪ Annex III-Brochure Pegaso SDI ▪ Annex IV-SDI Mapviewer Polimedia link ▪ Annex V-Enabling shared info infrastructure for Med BlackSea ▪ Technical (Feedback) Report 3.1B BP6 ▪ Technical Report 3.1A BP6 	<p>BP12: DSS for Defence Planning Capitalisation (4)</p> <ul style="list-style-type: none"> ▪ Keypoint BP12 DSS ▪ COASTGAP Outputs and results to be capitalised (THESEUS)_12 ▪ Technical Report 3.1A BP12 ▪ Technical Report 3.1B BP12

TECHNICAL MEETINGS BETWEEN PARTNERS (4)

- Agenda Technical meeting Bologna - 19-20 NOV 2013
- Agenda Technical meeting LAZIO-REMTH
- Agenda IMC WG IMP (Bologna - 20 February 2014)
- Attendance sheet LAZIO-REMTH meeting 070214

The process foreseen to capitalise on the practices could be considered as well structured, particularly with regard to the agreed outputs. Namely, the idea of three Technical Reports, beginning with the presentation of the Best Practice (BP) by the Proposing Partners, followed by the Feedback Report containing Adaptation measures proposed by the Adopting Partners (APs) for the Best Practice capitalisation, and finally Technical Acts produced by the Adopting Partners, represents well the dual character of the process, and puts both sides into an active position, increasing the chances for success. However, at the moment of assessment, that is 2 months prior to the closure of the project, for several Best Practices it is not clear whether the capitalisation will actually happen. Namely, no Best Practice has the Technical Acts or Administrative Acts published.

From the general insight into the available documents the initiation of the process is not clear. Namely, related to this issue, three questions may be raised:

- a) whether all of the selected practices were really the “Best”;
- b) were all Best Practices well described, so that the Adopting Partner could have a clear information on what could be the benefits for it;
- c) was the interest and political will of the Adopting Partner confirmed in some manner?

As an example of the relatively successful initiation, the application of the DIVA method in the UNEP/GEF ClimVar project may be proposed. Namely, after selecting the DIVA method, an official letter was sent to all the focal points of the 10 countries in the project, asking for expression of interest in applying the DIVA, and requiring an official letter, signed by a Minister, or another authorised person on the availability of the data needed for the DIVA application. This letter demonstrated to be the key factor for success later on during the data collection.

During the project implementation three Steering Committee meetings were organised, and a Final Conference is foreseen. These major events were organised in the regular time frame, aiming at securing timely progress of the project. Being conceived as a rather short project with the duration of a year and a half, four major events are supposed to be sufficient to ensure coordination and to provide for milestones necessary for its timely completion. Besides these major events, a series of technical meetings were organised. These meetings were actually of key importance for the success of the transfer of experiences. However, in most cases, the reports of those meetings are not publicly available, so it is hard to estimate their efficiency. At the COASTGAP web site, 12 such events are noted. Considering that there are 12 Best Practices to capitalise on, these 12 events are not such a high number. Finally, although this is not a perfect indicator, the expenditure reports testified that the progress was slower than expected.

The achievement of the aim defined as “production of governance and adaptation policies aimed at reducing risk along coastal zones and foster their sustainable development” will be much more difficult to assess. Major tools to reach these objectives are actually the strategic best practices – Joint Action Plan and the Bologna Charter. These practices will be separately assessed in this report. However, what can be noted is that the aim in the field of governance and policies should involve more levels of government, primarily the representatives of the national governments.

The challenge of reducing risks along the coastal zones, as well as fostering sustainable development along the Mediterranean coasts are definitively immense. Facing the challenges that climate

variability and change bring asks for an integrated, holistic approach, more than ever before. Rather significant investments that will be needed in many coastal zones will not be available everywhere. Priorities should be established, so the criteria for the establishment of priority zones are among the biggest and most urgent needs. One of the factors which will be of a major importance is population projections. The number of people dealing with the challenge will be an important factor for all - local, regional, national or more global levels.

In meeting these challenges a global approach will be of a great importance. Following the global level, the national level is to play an important role when choosing priorities, as well as for securing funds. Building vertical integration should be one of the objectives for any project dealing with challenges of this size. Having in mind that major policies, as well as legal settings, are still defined at the national level, the regional networks created without involving national governments (as it is the case in COASTGAP) provide to some extent fragile setting.

From the above, two key recommendations for the Strategic BP, the Joint Action Plan, can be proposed:

- the national level should be involved,
- criteria for the establishment of priority zones for adaptation are among the biggest and most urgent needs.

In addition to that, the following recommendation may be made with regard to the project's process:

Since the Technical Acts required to be appropriate for official internal adoption of the customised Best Practices are not available at the moment of this assessment, it is not possible to indicate to what extent these practices will be capitalised. For that purpose, an additional evaluation of the project outputs and outcomes should be foreseen. It is also recommended to investigate more on the reasons why certain practices were not capitalised.

Finally, it is important to note that in some cases, capitalisation goes even further from the initial idea, since sometimes it represents a motive for initiation of actions that later on developed into something more specific, which was recognised as a priority need in the region of the Adopting Partner. In some cases, these follow-ups, or additional activities may provide significant contribution towards sustainable coastal development in the Adopting Partner region. In these cases, capitalisation actually represented an impetus for additional activities.

4 - OVERVIEW BY INDIVIDUAL BEST PRACTICES

In this chapter a short overview on the capitalisation process is given for each BP of the project while the BP₄ dealing with one of the crucial aspects of ICZM and the adaptation to climate change i.e. the establishment of the 100 m setback is elaborated more in detail.

Best Practice 1: Guidelines for the environmental impacts of coastal protection works and plans

The Guidelines for the environmental impacts (EIA and SEA) of coastal protection works and plans are innovative guidelines produced in the framework of COASTANCE project by ISPRA with the aim of facilitating the environmental impact assessments in the coastal areas. The Guidelines offer a methodology for categorizing coastal defence works, classification criteria for habitats and protected species, and possible effects of coastal works on the coastal-marine environment, based on present habitat category (and related species).

The capitalization process of this best practice envisaged:

- dissemination of the Guidelines by the Lazio Region as Promoting Partner (PP) to 8 Adopting Partners, namely: the Emilia-Romagna Region, the Department of Hérault, the Region of East Macedonia - Thrace, the Region of Crete, the Ministry of Communications and Works of Cyprus, FEPORTS, Autonomous University of Barcelona, the Regional Development Agency RERA of the Split-Dalmatia County, and the Ministry for Environment of Israel as Adopting Partners (AP)¹;
- inputs from APs on the possibilities for utilization of the Guidelines;
- description of the Guidelines' customization to the APs' territory;
- formal adoption of the Guidelines.

Of all the APs only the Emilia-Romagna Region, the Hérault Department and the Region of East Macedonia – Thrace provided their inputs on possibilities for utilization of Guidelines. They assessed their administrative and technical abilities for applying them. Overall, it can be said that APs consider applying the Guidelines possible. However, Emilia-Romagna pointed out the need for some pilot testing. Inputs from other APs are not available at the moment.

In addition, information on other steps undertaken in the capitalization process is not yet available. However, information gathered in some of the dissemination meetings (i.e. seminar organised by RERA) enables us to conclude that the Guidelines are considered useful and it can be expected that they will have a wide range of uses, adapting it to specific national circumstances. Still, prior to final conclusion, insight into full 3.1/B, 3.1/C and 2.4/A would be needed.

Best Practice 2: SICELL Littoral Cells management system

The Littoral Cell Management System (SICELL) is a database designed to support coastal management along stretches of coastline. It provides an overview of the actions put in place to secure the protection and good status of the coastline through continual upgrading. The SICELL system has been developed in the framework of the COASTANCE project by the Emilia-Romagna Region. The SICELL is a useful support tool to regional coastal management and provides a data base for the drafting of sediment management plans and interventions designed to fight erosion. The COASTANCE project and the SICELL system have now become an integral part of a more than thirty-year-long regional coastal protection experience.

This capitalisation initiative is promoted by the Emilia-Romagna Region that has prepared the SICELL Implementation guide in September 2013, which makes the basis for capitalisation. The main objectives were to share the tool within the partnership and with stakeholders, integration of the tool with coastal management processes and activities, dissemination of the methodology to the partners involved, analysis of coastal data availability to evaluate SICELL feasibility, and adoption of customised SICELL and programming of its implementation, by each adopting partner (AP).



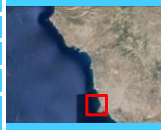
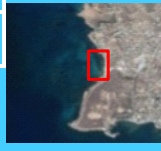










Two reports, namely 3.1/A and 3.1/B were prepared by UPO-Seville. The report 3.1/A, prepared during the first step of the capitalisation process, had the role of presenting the best practices (BPs) and propose the capitalisation process to COASTGAP partners. In those reports a brief description of the practices, as well as a Capitalization Roadmap with the main activities and expected outputs, was provided. The report 3.1/B that followed summarised the inputs provided by the APs. Those had the objective to analyse the applicability of the BPs in the participating regions, to analyse the technical and/or formal gaps between the original BPs and the specific needs of the partners, data availability, as well as other issues related to customisation of the tool.

¹ Note – the list of APs in chapter 2.1 3.1/A deliverable includes question marks for some of the partners; the final confirmed list needs to be provided

The SICELL tool is well linked to the BP 6 on Spatial Data Infrastructure and Geoportal for ICZM. The APs for the SICELL were the Lazio Region, the Region of Eastern Macedonia – Thrace (REMTH), the Tuscany Region, the Cypriot Ministry of Communications and Public Works/Public Works Department, the CEREMA and the Hérault Department.

The APs have prepared reports on the feasibility for the adoption of SICELL in their coastal management systems. The analysis included the presentation of the current coastal management systems, the administrative issues, technical capacities, data availability and other practical issues. The major findings are presented below.

- Lazio Region: The ICZM Monitoring Centre is in charge of data collection and information provision for the entire coastline of the region. For example, they have produced the Atlas of coastal dynamics (erosion trends). SICELL could assist in the harmonisation of data presentation and collection between the regions. No major technical or administrative obstacles to implement SICELL were reported, except that a customisation phase would be needed. The procedure and a roadmap for the capitalisation procedure are well presented.
- The Region of East Macedonia – Thrace (REMTH): There are experiences with COASTANCE and some other EU projects dealing with similar topics. However, the nature of the coast is different from the one presented in Lazio, with less erosion and less pressures from various activities on land. Less data are available but there are technical capacities to implement SICELL, with some additional training, in the region.
- Tuscany Region: No administrative or technical obstacles were reported to prevent the adoption of SICELL in their coastal management system. Some work has been done within some previously implemented projects, mainly focused on sedimentary budget at a larger scale than those in SICELL which is based on smaller spatial units. Therefore, availability of some more specific data would have to be enhanced in order to fully capitalise on this system.
- The Cypriot Ministry of Communications and Public Works/Public Works Department: Similar experience exists in Cyprus. Data are collected and the coast is regularly monitored in order to evaluate the erosion trend on the entire coast. The PWD of the Ministry has adapted SICELL monographs so that: (a) they show the cell location by zooming in from the island map to the exact location; and (b) they are bilingual. Two separate documents were prepared, one explaining the use of the SICELL monographs and another on how to create monographs from a spreadsheet computer document. SICELL has been applied to a coastal stretch of some 20kms in length, North of the city of Paphos. The following monograph is an example of the adapted monograph for one of the coastal cells in the above area. This monograph is bilingual, in English and Greek. This bilingual method is based on the EU practice in road signs, identity cards, etc. It has the advantage that the same document may be presented to all stakeholders without the need of duplicating documents.

				S4	ΠΑΦΟΣ-ΒΟΡΕΙΑ ΡΑΡΗΟΣ-NORTH	Δ1	
	ΟΝΟΜΑ Name		ΔΗΜΟΤΙΚΗ ΠΛΑΖ Municipal beach			Δ1.1.2   	
	ΤΥΠΟΛΟΓΙΑ Typology		ΤΜΗΜΑ ΜΕ ΠΑΡΑΛΙΑ Cell with beach				
	ΟΡΙΑ Boundary		ΔΗΜΟΤΙΚΗ ΠΛΑΖ Municipal beach				
	ΣΥΝΤΕΤΑΓΜ.	A / S	East	32° 24.336'	North		34° 45.796'
	Coordinates	T / F	East	32° 24.377'	North		34° 46.035'
	ΜΗΚΟΣ / Length (m)		480				
	ΔΗΜΟΣ/ΚΟΙΝΟΤΗΤΑ Municipality/ies		ΠΑΦΟΣ Paphos				
	ΕΠΑΡΧΙΑ Province		ΠΑΦΟΣ Paphos				
		A	S	P	E	2006 2013	
ΣΚΛΗΡΑ ΕΡΓΑ ΠΡΟΣΤΑΣΙΑΣ Hard defense works	ΤΥΠΟΛΟΓΙΑ ΣΚΛΗΡΩΝ ΕΡΓΩΝ ΠΡΟΣΤΑΣΙΑΣ Hard defense works typology						
	 1 ΕΞΑΛΛΟΣ ΠΡΟΒΟΛΟΣ ΑΠΟ ΣΚΥΡΟΔΕΜΑ 1 emerged groin made of concrete						
	ΕΚΤΕΛΕΣΘΕΝΤΑ ΕΡΓΑ ΣΤΗΝ ΠΕΡΙΟΔΟ ΑΝΑΦΟΡΑΣ Hard defense works realised in the period of reference						
	ΣΥΝΤΗΡΗΘΕΝΤΑ ΕΡΓΑ ΣΤΗΝ ΠΕΡΙΟΔΟ ΑΝΑΦΟΡΑΣ Hard defense works maintenance in the period of reference						
ΕΜΠΛΟΥΤΙΣΜΟΣ Nourishments	ΕΜΠΛΟΥΤΙΣΜΟΣ ΚΑΤΑ ΤΗΝ ΠΕΡΙΟΔΟ ΑΝΑΦΟΡΑΣ (m3) Nourishments in the period of reference (m3)						
	ΤΥΠΟΛΟΓΙΑ ΠΡΟΕΛΕΥΣΗΣ Sources typology						
ΙΖΗΜΑΤΟΛΗΨΙΑ Withdrawal	ΠΟΣΟΤΗΤΑ ΙΖΗΜΑΤΟΛΗΨΙΑΣ Sand withdrawal (m3)						
	ΤΜΗΜΑ/ΤΑ ΠΡΟΟΡΙΣΜΟΥ ΙΖΗΜΑΤΟΣ Cell/s of destination of sand						
ΆΛΛΕΣ ΠΛΗΡΟΦΟΡΙΕΣ Other information	ΟΓΚΟΙ ΕΝΑΠΟΘΕΣΗΣ /ΔΙΑΒΡΩΣΗΣ ΚΑΤΑ ΤΗΝ ΠΕΡ. ΑΝ. (m3) Accumulated/eroded V in the period of reference (m3)						
	ΜΕΤΑΒΟΛΗ ΤΟΥ ΟΓΚΟΥ ΤΩΝ ΙΖΗΜΑΤΩΝ (m3/m) Sediment volume variation (m3/m)						
	ΕΞΕΛΙΞΗ ΑΚΤΟΓΡΑΜΜΗΣ Shoreline trend						
							
ΔΥΝΑΜΙΚΗ ΚΑΙ ΜΟΡΦΟΛΟΓΙΑ Dynamics and morphology							
 dt N-S  ts cm/y  ase 75 m  pse 3 %  ass 250 715 m to -4m to -7m  ps 5 %							
 sb  ru							
ΔΙΑΧΕΙΡΙΣΗ Management							
ΠΕΡΙΟΡΙΣΜΟΙ Constraints							
ΤΜΗΜΑ ΚΑΤΑΛΛ. ΓΙΑ ΙΖΗΜΑΤΟΛΗΨΙΑ Cell suitable for sediment withdrawal							
ΤΜΗΜΑ ΚΑΤΑΛΛ. ΓΙΑ ΕΜΠΛΟΥΤΙΣΜΟ Cell suitable as recharge zone							
ΤΜΗΜΑ ΠΟΥ ΧΡΕΙΑΖΕΤΑΙ ΕΠΕΜΒΑΣΗ Cell that needs intervention							
ΣΗΜ. Note							

- CEREMA: There are various institutions dealing with coastal management systems in this French region, from national to local levels, including some institutions involved in different studies and projects. They would use SICELL at a very local scale for the management of the beaches. Some administrative adaptation would be required to put the method in practice.

Technical capacities of CEREMA are sufficient to prepare the recommendations for the use of SICELL.

- Hérault Department: There should not be any major problems to adapt the SICELL to the management system of the Department. Lots of data are available as well as the human resources. Some administrative adaptation would be required to gain familiarity with the method. A pilot area was selected to study on how to implement the SICELL, including available data and their sources.

Although there were no reports available on the practical implementation of SICELL on the ground, except for Cyprus, it seems that there are no major obstacles to capitalise on the tool by the APs. Some adjustment (administrative, technical) would be required to best fit the needs of each administration and level of management.

It should be pointed out that monitoring of and reporting on the state and evolution of the coastal areas, in particular the coastline and the beaches, is an important requirement of the ICZM Protocol. Therefore, the SICELL method could significantly contribute to the preparation of such reports on harmonised data and principles. Moreover, the current initiatives of the EU Marine Strategy Framework Directive (MSFD) and the Mediterranean Action Plan (MAP) on the ecosystem approach (EcAp) to management of coastal and marine environment could well benefit from such approaches. For example, SICELL could assist with the monitoring of some of the indicators that make part of the EcAp. The “Length of coastline subject to physical disturbance due to the influence of man-made structures”, which is one of the common coastal indicators, could benefit greatly from the methodology proposed.

Best Practice 3: Bologna Charter 2012

The Bologna Charter 2012 promotes a Macro-Project initiative for the next programming period of European Structural Funds (2014-2020), designed for a coherent Mediterranean macro-thematic and multi-sectoral strategy, open also to the coastal Administrations of the South and East of the Mediterranean. The Charter, signed in Brussels on 23 March 2013 and adopted by the Emilia-Romagna Region as a Promoter of this Best Practice within the COASTGAP project, proposes a strategy and a concrete actions framework for the protection against and adaptation to climate change (CC) in the Mediterranean coastal area; contributes to the implementation of the EU coastal zone and maritime policies (ICZM, MSP, IMS, CC Adaptation, Flood Directive, WFD); consolidates and further develops maritime Regions co-operation in the Mediterranean (including South and East regions); and strengthens the role of coastal Administrations within the formulation of EU policies for the Mediterranean space.

The expected results of this BP are the involvement and consolidation of the coastal Regions co-operation in the Mediterranean area, and the achievement of a Joint Action Plan to feed the Macro-project outlined in the point 2 of the Charter.

The backbone of the BP₃ is a MAREMED project with P₂RER as a Proposing Partner and the declared Interested Partners including: P₁ Lazio Region; P₃ Department of Hérault; P₄ REMTH; P₅ Crete; P₆ Tuscany Region; P₇ Liguria Region; P₈ Cyprus; P₉ CETMEF; P₁₃ RERA Split-Dalmatia County; P₁₄ DUNEA, Dubrovnik-Neretva County; Province of Crotone (External Partner); CRPM (External Partner); and the Ministry of Environment, Israel.

As a first step in the capitalisation of the BP₃, a “key points” table has been designed to compile information on the administrative, technical, scientific and practical issues needed to analyse the transferability of this BP, highlighting the required adaptation measures for the suitable capitalisation. As outlined in the Bologna Charter 2012 Capitalisation Roadmap, the following seven

types of Activities are carried out throughout the project implementation: A1) Opening and managing the BolognaCharter.eu web site A2) Official transmission of the Charter to COASTGAP Partners and External Partners not already involved; A3) Carrying out the path for the Charter adoption, deliberation and signature by a political representative of the relevant Administration; A4) Securing that the Charter is mentioned - or its themes are included - in specific Administration documents; A5) Communication and promotion of the Charter by the government structures competent for coastal issues; A6) Communication / transmission of the Bologna Charter to EU Parliamentarians, Commissioners and DGs responsible, competent related issues; and A7) Establishment of a Working Group for the formulation of the Joint Action Plan 2014-2020.

In conclusion, three Technical Reports were produced as a result of the process of capitalisation of this BS: 1) Technical Report 3.1/A - Presentation of the BP by the Proposing Partner; 2) Feedback Report 3.1/B - Adaptation measures proposed by the Adopting Partners for the best BP capitalisation; and 3) Technical Acts 3.1/C - Technical Acts produced by the Adopting Partners, appropriate for the official internal adoption of the customised BP.

PAP/RAC appreciates the endeavours of the Project partners to promote the ICZM Protocol as a reference framework of the Bologna Charter. The promotion is considered as particularly valuable of sustainable use of coastal territories and fostering the integrated approach to planning processes (Article 8 of the Protocol). Also, commendable is the networking as a means of communication and dissemination of the Bologna Charter to other Administrations, and government bodies of various levels in the Mediterranean area through: the website functioning; transmission of the Charter to the Project and external partners through exchange of transmission letters; deliberation and signature of the Charter; the inclusion / mentioning of the Charter in the Administration official documents; promotion of the Charter by the Governance structures; and through the establishment of a Barcelona Charter Working Group for the formulation of the Joint Action Plan 2014-2020. Finally, as suggested by the Project Co-ordination Board, the circle of discussion and collaboration should be extended beyond the single COASTGAP project.

Best Practice 4: Article 8 – Setback

Introduction

The establishment of the coastal setback is a flagship requirement of the ICZM Protocol for the Mediterranean, as spelt out in the Article 8. It represents a genuine challenge which greatly depends on the morphological configuration and topography of the coastline, as well as on the physical processes affecting it, such as coastal erosion, extreme waves or sea-level rise due to the climate change. But it also depends on the existing relevant national regulations, in particular the definitions related to 'public interest' or the interpretation of other adaptation clauses from the Protocol itself. The objectives and principles of the ICZM Protocol must always be borne in mind. Accordingly, the identification and implementation of the coastal setback should be based on an integrated methodology that uses scientific knowledge of physical processes, information on ecological and landscape values, and, first of all, on the analysis of the policy requirements and the established legal system of the country. The major objectives of coastal setbacks are to preserve the coastal natural habitats, landscapes, natural resources and ecosystems. In particular, the role of the setback is to:

- prevent construction on the land or sea interface and ensuring the protection of coastal species and ecosystems (dunes, wetlands, sea-grass meadows and coastal forests);
- protect coastal landscapes, preserve wetlands and estuaries so to maintain their ecological and social functions, reduce the coastal erosion due to coastal artificialisation, facilitate the public access to an area larger than the public maritime domain and to maintain the recreational services by preventing excessive coastal artificialisation;

- when establishing the setback zone also the areas directly and negatively affected by climate change and natural risk should be taken into account. Therefore, an important objective of the setback is also to protect human lives, property, settlements, etc. from the consequences of climate change such as the sea level rise, the risks of extreme events and chronic coastal processes (PAP/RAC, 2012).

In broader sense, the objectives of the establishment of the setback zone are also to contribute to sustainable use of coastal areas. These are the following:

- (a) identifying and delimiting, outside protected areas, open areas in which urban development and other activities are restricted or, where necessary, prohibited;*
- (b) limiting the linear extension of urban development and the creation of new transport infrastructure along the coast;*
- (c) ensuring that environmental concerns are integrated into the rules for the management and use of the public maritime domain;*
- (d) providing for freedom of access by the public to the sea and along the shore; and*
- (e) restricting or, where necessary, prohibiting the movement and parking of land vehicles, as well as the movement and anchoring of marine vessels, in fragile natural areas on land or at sea, including beaches and dunes (Article 8-3) (PAP/RAC, 2008).*

It is also important to stress that, in its Article 8, the Protocol is flexible enough to allow adaptation to national and local circumstances. It would be unrealistic to insist on the building ban inside the 100 m coastal strip in all cases, and in this respect, for example it does not require any systematic expropriation of the constructions that already exist. On the other hand, the Protocol does not specify the cases of non-application of the coastal setback zone in the already built-up areas. In that sense, the successful implementation of the Article 8 requires a considerable level of flexibility confirmed by adding the “adaptation clauses” 8-2b(1) and 8-2b(2), respectively, where Parties:

...may adapt (the implementation of the setback zone provision), in a manner consistent with the objectives and principles of this Protocol...:

- 1) for projects of public interest;*
- 2) in areas having particular geographical or other local constraints, especially related to population density or social needs, where individual housing, urbanisation or development are provided for by national legal instruments. (PAP/RAC, 2008)*

Among the consequences of the establishment of the coastal setback are, therefore, limitations to the property rights within the setback zone as no construction is allowed and the land owners lose development rights. There are a couple of existing financial and /or fiscal instruments to compensate for such losses, as mentioned by Markandya (PAP/RAC 2012). One example is the land taxation. It may be possible to tax increased land values when development rights are accorded for coastal areas and use the revenues for the protection of other areas, including transfers to these areas to make up for restricting development. A similar approach is the one that uses the tax instrument and is known in Italy, i.e. “perequazione urbanistica”. The idea behind this instrument is to share the benefits and costs of changes in land-use status across communities and individuals. So, if one community or person is given the rights to develop land from agricultural or recreational use to use for dwellings, and another community is restricted not to develop land in this way, the two communities may share the benefits from the increased development (PAP/RAC, 2012).

Identification of the coastal setback

The process of establishment of the setback has its technical and administrative parts. The latter includes the analysis of the policy and legal context in the country with relation to this new

instrument, including adaptation possibilities, as well as the stakeholders participation throughout the process, which is an essential component for the successful implementation.

The technical part should consider:

- type of the coast (in general rocky or sedimentary),
- physical processes specific for the coast including modelling of climate change effects,
- current state of the coastal area (built up or still natural/semi-natural; qualities of the landscapes and habitats, conservation status (protected, non-protected) etc., and
- ecological processes (such as dependence of marine and terrestrial ecosystems, linkages between habitats, fragmentation and alike) (PAP/RAC, 2012).

Both components of the process are important, first to define the baseline, and the width/extent of the setback zone itself. According to the Protocol, the baseline should be “the highest winter waterline”. Its definition can already be defined by a specific country decree (as, for example, in Slovenia). In many cases it should be defined. There are very different situations related to the baseline definition in rocky (PAP/RAC 2012; Figure 8) or sedimentary coastal areas. If it seems easier to define the baseline in the rocky coastal areas, the sedimentary type of the coast is much more complex and demanding due to the erosion processes which make the baseline dynamic in time. Therefore, this requires some modelling of the erosion processes in the future, which should also include the effects of climate change (sea-level rise and extreme events, for example). The dynamic baseline determines also the dynamic setback itself that should be revisited and revised according to the erosion/climate change processes. The property rights regulations are therefore also ‘dynamic’ which is administratively/politically sensitive and demanding.

The example of the establishment of coastal setback in the Emilia-Romagna region of Italy, provided by the SHAPE project for the capitalisation within COASTGAP project, deals with many aspects of the above presented process. In particular, the focus is given to the definition of the baseline with regard to the sedimentary nature of the coast and erosion processes. Steps for the adoption in the planning regulation, namely the spatial planning instruments, are also provided (RER, 2012).

To further inform the COASTGAP adopting partners working on Article 8, three additional examples are provided in this report, namely:

- An example of the definition of the baseline in the case where no official baseline exists is presented by the Puglia region/Italy (SHAPE project). Visual analysis along the coast and mathematical modelling are the main characteristics of this approach.
- Another example from the coastal area of Montenegro shows how both natural features and urbanisation processes were taken into account for defining and implementing the coastal setback (CAMP Montenegro project).
- The Slovenian example (SHAPE project) is the case where the baseline was determined by a decree. The case is interesting for the steps undertaken to define the setback zone, i.e. analysis of the territory, conservation status of habitats and ecosystems, and the proposal for the formal adoption of the proposed setback.

It is not meant to establish the setback zone in towns and cities where the main land use is mainly urban or strongly urbanised, in industrial areas or where land uses are linked to traditional maritime activities. However, in some urban areas close to the sea there are non-built, green areas such as parks, recreational areas and alike which still have a potential to be defined as a setback. The system of spatial planning and building regulation, through various spatial planning instruments or building permits, can be a rather straightforward possibility to institutionalise the implementation of the setback. Another option in protected areas is to give the authority for building control within the setback to the institution responsible for the management of such a protected area where a ban on construction usually exists already.

Example 1: The coastal area of the Puglia region, Italy

The Regional Agency for the Protection of the Environment (ARPA) of the Puglia region (Italy) was a partner in the SHAPE project where the setback zone was one of the major initiatives. The pilot area extended from the Torre Guaceto to the neighbouring coastal area of Brindisi. In total, the area was 46 km long, divided into 23 stretches.

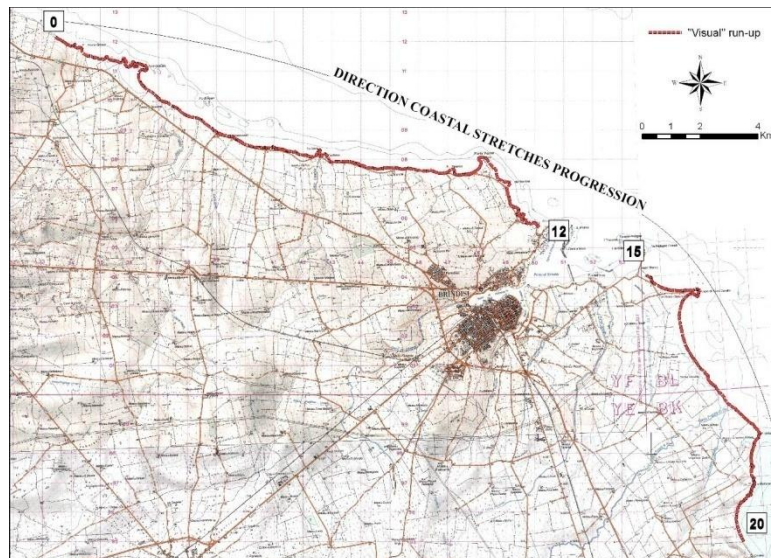


Figure 1: The pilot area (ARPA Puglia, 2013)

As there had been no official baseline defined, they used a rather innovative approach to define the baseline. It consisted of an empirical, i.e. visual analysis, and mathematical modelling. The proposed methodology for drawing the set-back zone baseline, intended as a rule “the highest winter waterline”, is based on the integration of results from four different methods/approaches applied in the pilot area of Torre Guaceto-Brindisi. Two of the methods are characterised by the modelling approach (run-up and extreme flooding estimation by mathematical models), including the sea-level rise as a consequence of climate changes. The other, by the empiric evaluation of the effect of strong storm surges on the coastal zone. This visual analysis on the ground consisted of detecting vegetation aspects, i.e. the pioneer vegetation line, as well as by marking the line to which the waves brought debris and other material on the beaches (ARPA Puglia, 2013).



Figure 2: Shoreline types (ARPA Puglia, 2013)



Figure 3: Visual check-up (ARPA Puglia, 2013)



Figure 4: Overlay of all four lines (ARPA Puglia 2013)



Figure 5: Pioneer vegetation (ARPA Puglia 2013)

By using the GIS they overlaid all four lines and defined the baseline as the outer extent to which one of the lines went furthest into the land. After, the 100 m setback zone was defined.

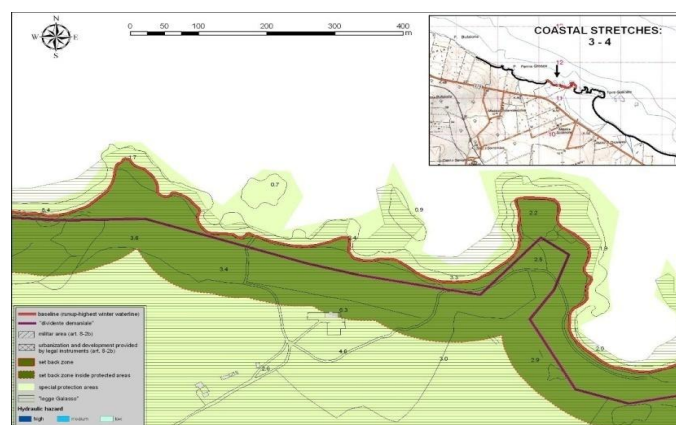


Figure 6: Baseline and setback zone for the coastal stretch 3-4 (ARPA Puglia, 2013)

Example 2: The coastal area of Montenegro

The application of the coastal setback in Montenegro was one of the most important activities within the CAMP Montenegro, jointly implemented by the Ministry of Sustainable Development and Tourism and PAP/RAC (as leading partners, all text from PAP/RAC 2013). The central component of the activity was developing a specific, practical methodology for its application, based on man-made and natural coastal features of the narrow coastal zone of Montenegro (approximately 1 km wide). Based on these criteria, different conditions for the application of setback were proposed (including proposals on the setback adaptations).

The man-made or anthropogenic group of criteria used includes:

- statutory land-use designation, as to land buildability (land intended for settlement development; buildable lands outside settlements, mostly for tourism development; non developable lands)
- current state of anthropogenisation of the coastal land (built-up areas; partly developed lands, including illegally developed areas; coastal lands in their natural state).

Source data for land-use designation were land-use maps from coastal municipal spatial plans, while for the level of coastal anthropogenisation a map with delineated built-up areas was prepared (based on the official 2011 aerial photography) (Fig. 7). When both anthropogenic criteria, represented by said maps, are combined and overlaid using GIS it resulted in 9 types of situations, coded from 1.1 (land designated as buildable for settlement development, fully developed) to 3.3 (non developable land in its natural state) (table 1; rows on the left side).

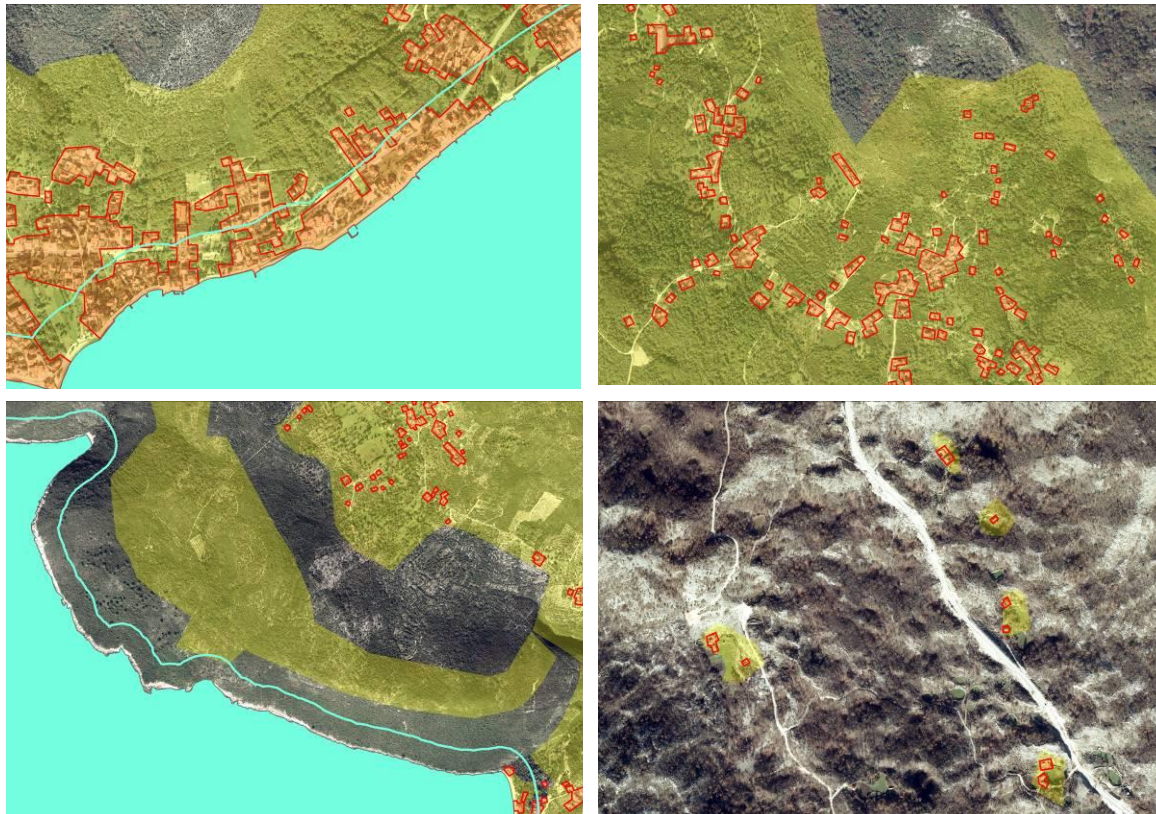


Figure 7. Examples of buildable lands (yellow) based on official municipal plans and already built areas (red)

These anthropogenic criteria were used to identify areas:

- that are already fully or partly developed and where the setback is no longer applicable,
- where land development process has reached the stage when reversing the process is legally no longer possible or realistic, i.e. where the land development process got to the level of concrete investment projects or state contracts (acquired development rights).

The second broad group of criteria covers the main natural features of the narrow coastal zone, focusing on vulnerability which originates either from the coastal environment features (biodiversity, scenic landscape, fertile land, woodland, underground waters), or hazards coastal environment is exposed to (sea-level rise, erosion, seismic risk, flood areas). Four main degrees of vulnerability (lower to highest; table 1, columns on the right) were developed using initial vulnerability assessment created by means of GIS overlay operations (spatial aggregation) of individual thematic spatial layers.

Once both natural and anthropogenic criteria had been elaborated as described above, they were put in a matrix-type of diagram with rows presenting 9 combinations of anthropogenic criteria and 4 columns where natural criteria are represented in 4 classes of aggregated vulnerability (Table 1).

The next step was to make proposal on the setback application (including adaptations) options, in other words to fill out the matrix. In this way, the matrix form contributes to the clear presentation as well as an easier interpretation, evaluation and dissemination of setback adaptation options.

A number of options have been analysed in a participatory way, mostly using coastal GIS database which proved to be the best way to verify setback adaptation options in real situations. Finally, a total of 10 types of setback adaptation situations were identified and assigned to different combinations of anthropogenic and natural features, as can be seen in the matrix diagram bellow.

Table 1: Setback application options

anthropogenic criteria	land use	state of land	planning document	natural criteria			
				R1 lower vulnerability	R2 moderate vulnerability	R3 high vulnerability	R4 highest vulnerability
	1. buildable land for settlement development	1. fully built-up land		1 built-up area – setback is not applicable 60.147m, 25,0%			
		2. partly built-up land	DSL ²	2 setback adaptation possible due to acquired development rights 2.595m, 1,1%			
			LSL	2 setback adaptation possible due to acquired development rights, 0		2 setback adaptation possible due to acquired development rights, 0	
			DUP/UP	2 setback adaptation possible due to acquired development rights, 7.986m, 3,3%		2 setback adaptation possible due to acquired development rights, 4.694m, 2,0%	
			other plans	3 setback adaptation possible through application of urban planning criteria, 2.799m, 1,2%		4 setback adaptation possible through application of urban planning criteria and additional measures, 0	
		3. undeveloped land	DSL	2 setback adaptation possible due to acquired development rights, 1.410m, 0,6%			
			LSL	2 setback adaptation possible due to acquired development rights, 93m, 0,0%		2 setback adaptation possible due to acquired development rights, 385m, 0,2%	
			DUP/UP	2 setback adaptation possible due to acquired development rights, 4.720m, 2,0%		2 setback adaptation possible due to acquired development rights, 307m, 0,1%	
			other plans	3 setback adaptation possible through application of urban planning criteria, 3.072m, 1,3%		9 no adaptation possible, 0	
	2. buildable land detached from settlements (mostly for tourism and second homes development)	1. fully built-up land		1 built-up area – setback is not applicable, 8.204m, 3,4%			
		2. partly built-up land	DSL	2 setback adaptation possible due to acquired development rights, 13.744m, 5,7%			
			LSL	2 setback adaptation possible due to acquired development rights, 0		2 setback adaptation possible due to acquired development rights, 0	
DUP/UP			2 setback adaptation possible due to acquired development rights, 525m, 0,2%		2 setback adaptation possible due to acquired development rights, 0		
other plans			3 setback adaptation possible through application of urban planning criteria, 1.924m, 0,8%		6 setback adaptation possible for projects of public interest with additional measures, 718m, 0,3%		

² DSL – state master plan, LSL – local master plan, DUP – detailed urban plan, UP – urban project

		3. undeveloped land	DSL	2 setback adaptation possible due to acquired development rights, 12.745m, 5,3%	
			LSL	2 setback adaptation possible due to acquired development rights, 0	2 setback adaptation possible due to acquired development rights, 0
			DUP/UP	2 setback adaptation possible due to acquired development rights, 4.800m, 2,0%	2 setback adaptation possible due to acquired development rights, 6,196m, 2,7%
			other plans	5 setback adaptation possible for projects of public interest, 3.211m, 1,3%	9 no adaptation possible, 10.050m, 4,2%
3. remaining non developable lands	1. fully built-up land	-	1 built-up area – setback is not applicable (priorities formalization and rehabilitation), 1.378m, 0,6%		1 built-up area – setback is not applicable (priorities formalization and rehabilitation with additional measures), 289m, 0,1%
	2. partly built-up land	-	7 setback adaptation possible through formalization and rehabilitation plans, 3.977m, 1,7%		8 setback adaptation possible through formalization and rehabilitation plans with additional measures, 1.536m, 0,6%
	3. undeveloped land	-	5 setback adaptation possible for projects of public interest, 20.596m, 8,6%		9 no adaptation possible, 54.193m, 22,6%

The table 2 below provides information on the share of each setback type in the whole coastline. Setback type #10 represents areas where analysis of natural features identified conditions for setback extension (above 100 meters, mostly due to the presence of sensitive ecosystems and risk of sea-level rise).

Table 2: Share of different setback types

setback type #	length of coastline	%	setback description and possibility of adaptation
1	70.018	29,2	built-up coastal area – setback is not applicable
2	51.862	21,6	setback adaptation possible due to acquired development rights
3	7.795	3,2	setback adaptation possible through application of urban planning criteria
4	0	0,0	setback adaptation possible through application of urban planning criteria and additional measures
5	23.807	9,9	setback adaptation possible for projects of public interest
6	718	0,3	setback adaptation possible for projects of public interest with additional measures
7	3.977	1,7	setback adaptation possible through formalization (legalization) and rehabilitation plans
8	1.536	0,6	setback adaptation possible through formalization and rehabilitation plans with additional measures
9	64.244	26,8	no adaptation possible
10	16.200	6,7	areas with conditions for setback extension
total	240.157	100,0	

Based on the proposed methodology, the Coastal Area Spatial Plan for Montenegro (that is currently under preparation, as the most important legal document for utilisation of the coastal zone of Montenegro) integrated these findings as an official legal obligation for the implementation of the setback, as required by the ICZM Protocol. An example of setback application in the spatial plan is given in figure 8.



Figure 8: Part of the Montenegrin coast with different setback options (red – adaptation not possible; dark red – conditions for setback extension; green – possible adaptation with application of urban planning criteria; green dots – possible adaptation due to acquired development rights; violet dots – possible adaptation through legalisation; white line – built-up coast, setback not applicable)

In defining the methodology for setback application in Montenegro, some conclusions and recommendations could be drawn, including the following:

- The approach applied used the best available information on coastal systems. It developed a methodology which is standardised and replicable enough to enable its further testing and refinement, in particular if better or more precise data are available.
- The setback zone is too narrow for wider landscape and territorial assessments. For example, the proposed no adaptation areas, in order for their meaning to be fully recognised and valued, should be integrated within broader open-space systems (to be dealt with in the Coastal Area Spatial Plan).
- While setback is an important element of sustainable coastal planning, what seems to be more important and possibly worrying at the moment, is the total amount of coastal development as planned in the coastal statutory land-use plans. With 46% of land within the 1km coastal strip planned for development, Montenegro is far ahead of more densely populated coastal areas of countries such as Italy, France or Spain.
- The coastal setback is not, as it is often presented, an obstacle for larger-scale commercial tourism development (such as mixed-use resorts), as they need natural green buffer (with limited light structures) between the beach area and accommodation buildings.

Example 3: The whole coastal area of Slovenia

The whole coastal area (46.6 km) was included in the pilot project in Slovenia, including three coastal municipalities (Koper, Izola and Piran). The baseline used was the one provided by a governmental decree (Pravilnik 2004). It is fixed at the line of the highest tide at 1.73 m above the baseline height of the national coordinate system.

The project team first analysed the land use and typology of all coastal units and prepared the starting setback that was a 100 m belt measured from the baseline. By taking into account the criteria, such as naturalness, landscape qualities, nature protection status and, first of all, the urban/non-urban character of the area, two alternative setbacks were proposed as a result of the project. A typical situation on how the starting setback line (in red) was adjusted according to the criteria can be seen in the figures 9a and 9b below. For example, if the area had been built up and without any green areas close to the sea, the area was excluded from the setback. In other cases, for example where there were characteristic habitats and ecosystems already protected, they were entirely included in the setback zone (for example the Landscape park of Sečovlje salt pans, the Landscape park of Strunjan and Nature reserve of Škocjanski zatok). These areas represent the biggest part in surface of the proposed setback. Another peculiarity of the Slovenian proposal for the setback is that it also includes a 200 m belt on the sea side of the coastal zone. Beaches and promenades along the coast, landscapes with dispersed buildings, agricultural lands and alike were also integrated into the setback zone (see Fig. 10 below) (RRC Koper, 2014).

The proposals were made in a very participatory manner, involving all major stakeholders, and in particular the national level (two ministries responsible for the establishment of the setback zone, namely the ministry responsible for spatial planning and the ministry for environment) and representatives of all three coastal municipalities. The proposals were presented to the general public, and at present the proposal is with the governmental administration which should prepare the legal basis for the integration of the setback requirement into the national legal system and enable its implementation.

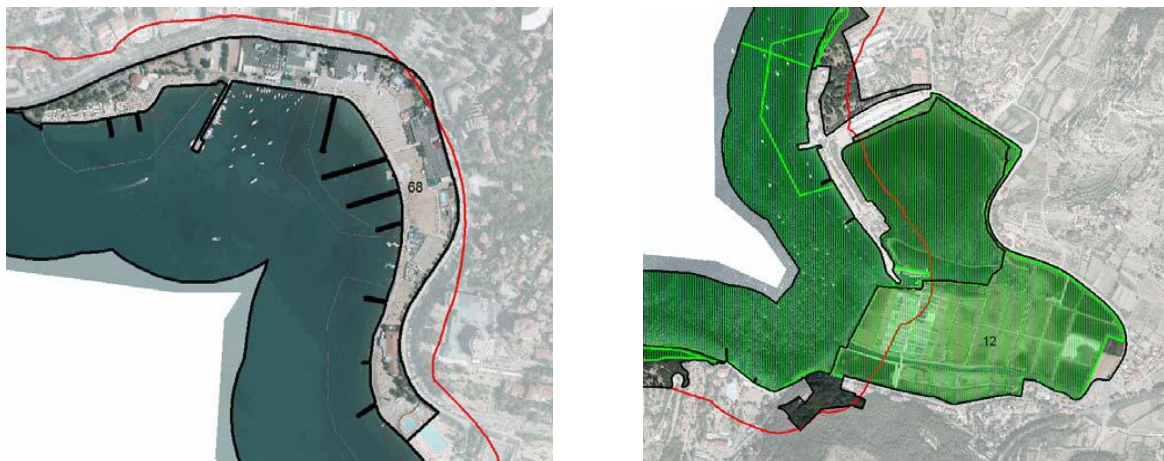


Figure 9a: Typical situations for defining the setback in Slovenia. The red line represents an 'automatic' 100 m line, whereas the non-shaded areas are the proposed setback zone (RRC Koper, 2014).



Figure 9b: Typical situations for defining the setback in Slovenia. The red line represents an 'automatic' 100 m line, whereas the non-shaded areas are the proposed setback zone (RRC Koper, 2014).



Figure 10: Typical landscape units included in the setback zone (RRC Koper, 2014).

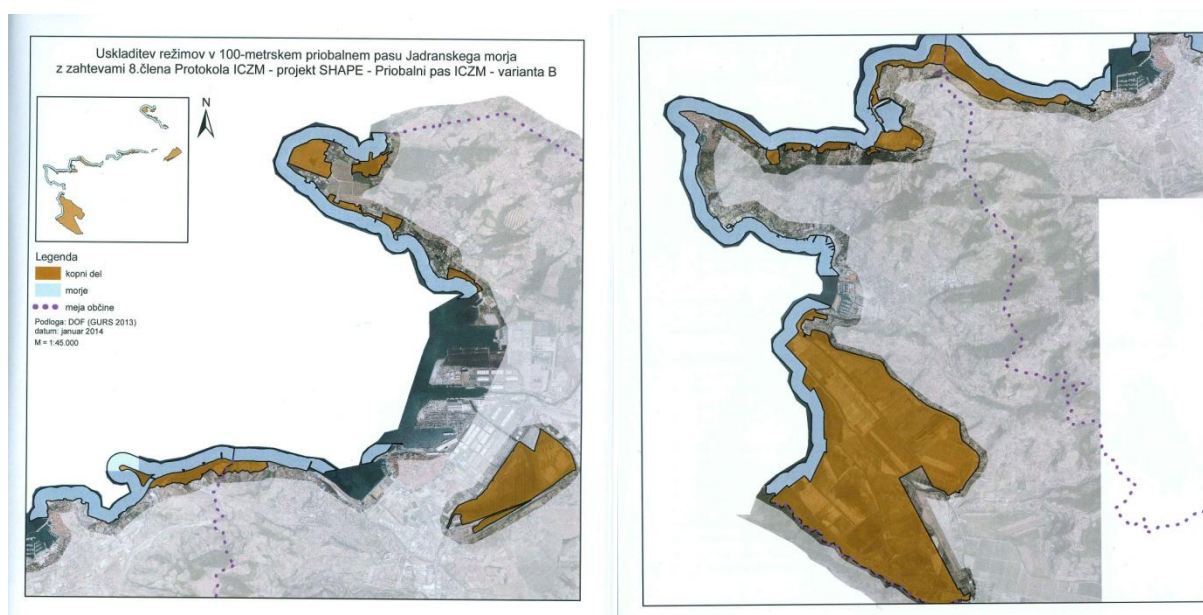


Figure 11: Alternative B for the setback zone in Slovenia (non-shaded areas) (RRC Koper, 2014).

Indeed, the project has analysed the existing legislation most similar to the objectives of the Article 8 of the ICZM Protocol and proposed three most suitable legal options for transposition of the proposed setback in the legal system. These could be by the amendments to the Law on Water which could integrate such a provision; by a specific law on setback or a special decree; and the third option by a spatial planning act on the basis of the existing legislation on spatial planning (RRC Koper, 2014).

Overview of the outputs provided by the COASTGAP Adopting Partners (APs)

The Region of Emilia Romagna was the Promoting Partner (PP) for the capitalisation of the best practice 4: "Methodology for ICZM Protocol Article 8 setback zone implementation" under the COASTGAP project. The following were the Adopting Partners (AP): the Region of Lazio, the Region of Liguria and the Hérault Department. The PP has produced a 'guiding' report "Deliverable 3.1/A" where the objectives of the activity are presented as well as the Best Practices attached that were used by the APs in the implementation phase of the project. The activities and the overall

capitalisation road map are presented. The main role of the APs was to prepare activities as elaborated under A2 and A3. As the main documents attached in order to assist capitalisation are the report prepared by PAP/RAC "*Establishment of coastal setback: An explanatory report on Article 8-2 of ICZM Protocol. Issues to be considered*" and the report prepared by the Emilia-Romagna Region "*Testing some provisions of the ICZM Protocol through local/regional demonstration projects. Evaluation of current land uses and planning provisions on the Emilia–Romagna coastal area within a setback zone (Art. 8 ICZM Protocol), and individuation of possible measures to be introduced for the application of ICZM Protocol provisions. Framework and methodology*". Both reports were prepared within the SHAPE (IPA Adriatic) project.

The instructions provided include also the Key Points Table as a sort of a checking for the implementation of the Article 8 by the APs. It is structured in three main parts, namely the administrative issues, technical/scientific, and practical issues. This analysis provided the APs with the main requirements for the implementation of the setback and verified feasibility to actually implement this best practice (BP). In the step that followed, the APs have provided this information which was summarised in the Deliverable 3.1/B: Interested Partner's Reports.

The major focus of the Lazio and Liguria regions was on the description of the baseline definition. Due to different types of coastal areas (sedimentary and rocky), different approaches with regard to the baseline were proposed. In the case of Liguria even very steep or vertical coasts were proposed for the pilot application that due to their geomorphology require specific attention. Another aspect was also the existing legal requirements with regard to the baseline or similar regulations, as well as the spatial planning systems or EU Directives (such as the Flood Directive) which are mostly dealing with these issues. It is clear from the information provided by these two regions that the baseline is the crucial starting line for the definition of the 100 m zone where construction is not allowed. One of the major problems underlined is also the erosion phenomenon that makes the baseline definition difficult due to its constant change. This was also one of the main problems that the Hérault Department presented. In this case the structure of information did not follow the instructions but provided an overall presentation of the issues in the pilot area. This is mainly the problem of erosion, protection from it, restoration of dunes and options for displacement of some activities (campsites, cabins) from the area under erosion risk. However, this pilot case gave a broader insight into the socio-economic situation of the area, stakeholders involvement and the environmental issues caused by the erosion risk. It seems that the setback zone was not the prime consideration but rather the erosion itself.

As far as administrative and technical issues, the Lazio and Liguria regions showed good confidence in the resources and skills available to implement the setback zone. For the Hérault Department, these elements are not so explicitly provided, but the information is integrated within the overall text presenting the project. The setback zone, in this case, is seen as an additional argument to solve the property issues due to erosion, and the consequent displacement of some activities.

The following chapter presents the assessment of the results of the implementation of the BP₄ itself by the three APs. All three reports are provided as Technical Act 3.1/C reports. The two Italian regions provided the report in Italian (which made the assessment a bit difficult).

Lazio Region

In the report on the implementation of the setback, the AP first introduces the legal framework that regulates development in coastal areas and the planning instruments in particular. This is followed by the description of the main characteristics of the coastal area and the major problems which are erosion and inundation areas. Both elements are crucial for the definition of the baseline. The pilot project is based on the follow up of the MAREMED project, where risk from inundation was one of the criteria to define the baseline. The baseline is defined as the line behind which no risk from erosion or inundation can happen, called as NEL. However, this line is stable in built-up areas where, due to

construction, the erosion process can no longer proceed. However, in the natural and semi-natural areas erosion can still happen in a long term. In sedimentary coasts the dynamism due to erosion makes the setback zone an unstable area and, as NEL moves, the adaptation of the setback is required in time.

The application of the setback was tested in Montalto di Castro (1 km stretch of the coast), characterised by a combination of urbanised and natural areas. Three criteria were used to compare the state of the coast with the Article 8 requirements, namely high (green), medium (yellow) and non compatible with the Article 8 requirements. Also, for each area different regimes are proposed as far as development in the planning documents is concerned. For each territorial unit/cell (using the SICELL model) of the area a level of compatibility with the Article 8 was defined, as well. On the basis of the baseline, an area of 100 m was defined as the setback zone according to the Article 8. On the basis of this experience the setback zone will be defined for the whole coastal area of Lazio.

Due to the dynamic NEL the model for the management of coastal areas was studied, as well. It took into account climate change effects such as the sea-level rise in the long term perspective that would result in the need for the adjustment of the baseline and the setback zone further inland. Financial benefits, expressed in Euro that could be calculated from the construction ban in the setback zone according to the Article 8 were also dealt with in this pilot area.

Comment

The pilot project gives a good insight into the complexity of the definition of the setback zone. In particular due to the instability of the coast because of erosion processes that require adjustments of the baseline and consequently the setback in time. A good overview of the existing (legal, planning) requirements is provided and the analysis of the existing regimes in the area as a starting point is presented.

Where a bit more effort would be expected is the definition of the 100 m setback itself once the baseline has been defined and the area analysed. It is not obvious from the report that the already urbanised areas were excluded from the setback zone or, for example, where there are still green areas in the already urbanised areas, such as parks, waterfronts, recreation areas and alike that could still be included in the setback. Or in the areas which are still in their natural or semi-natural state, where some areas are proclaimed as protected or some habitats and ecosystems exist which would give an opportunity to go beyond the very pure 100 m belt and therefore, extend the setback zone inland. Moreover, it would be supported even by the technical evidence of erosion processes that those sedimentary coastal areas are prone to erosion and would require to move the setback further inland in a long run. Such examples are provided in all three cases above (Montenegro, Puglia and Slovenia). The adaptation clauses of the Article 8 can be used in the definition phase of the setback and not only later when new development proposals for construction are presented. In other words, the setback zone in some areas already built up, or with some infrastructure could be narrower than 100 m, and where the already built/constructed such areas could be excluded from the setback. The 100 m criterion is not to be understood just as an automatic line from the NEL.

The report was provided in Italian so some misunderstanding could have happened when interpreting the methodology and results of this pilot project.

Liguria Region

The Liguria region as AP has used a very similar method as did the Lazio region above. Here, the erosion phenomenon is not the main issue since the coast is rather stable and rocky, and therefore geo-morphologically different from the Lazio case. A good analysis of the legal background, namely the planning system including the instruments and the way how the coastal zone is managed, is

provided. This gives a good insight into the institutional framework where this new instrument (Article 8) has to be applied. The definition of the baseline was made on the basis of the Emilia-Romagna Region experience, but the result is very much different from the one for Ligurian coastal area which is characterised by sedimentary coast and erosion.

A useful method of approximation of inundation data from the planning documents and from the Flooding Directive of the EU was applied. The climate change effects, such as sea-level rise and flooding, were taken into account when defining the baseline. For its definition the return time of 50 years of extreme (meteorological and marine) events on the coast was taken into account. Another two criteria were taken into account, namely the public domain and the Flooding Directive (50 years return time) when defining the baseline. These lines were taken as the baseline for the definition of the setback zones. In some areas some other criteria and existing instruments were taken into account, as well. The case shows that the baseline definition is crucial for the definition of the setback zone. Later on, departing from the baseline, a 100 m belt was defined that mainly covers agricultural, natural and urbanised areas (44 %).

Overlays with planning documents were done to analyse the relation of the setback with land uses in spatial plans, so as to show compatibility of the areas defined by the setback and those defined by the planning instruments (PTCP and PTR in preparation). A classification of three levels of compatibility was done (maximum, medium and low compatibility). Synthesis tables were prepared to show compatibility for territorial units. It was concluded that with the PTR there was a high level of compatibility with the setback zone. Those areas that were not compatible include mainly agricultural areas. Corrective elements, i.e. criteria are envisaged for the development within the setback, including consultation with the administration and developers so as to avoid incompatibility with the Article 8. In this way the adaptation requirements will be taken into account. The final result of the AP will be the definition of the setback for the whole Ligurian coastal area based on the experience of this pilot area. It would be crucial to involve all relevant stakeholders in the process of the definition of the setback from the very early stages. This could help build the understanding of this new measure and give more possibilities for the future effectiveness of the new development regime, i.e. ban of construction.

Comment

Similarly to the case project from the Lazio region, the Ligurian project is well structured and provides a highly analytical method for the definition of the baseline (legal framework, physical characteristics, planning documents). What is perhaps a weak point is the definition of the setback zone itself. The landward line is not just an automatic one. The criteria from the Article 8 should be applied to make this line adjustable to the situation on the ground. It is not obvious from the maps that the already built-up areas are excluded from the setback. Or, for example, as already mentioned above, some natural areas, such as habitats or protected areas, could provide an opportunity to extend the setback a bit further from the 100 m line.

However, the compatibility test with the existing spatial plans is a good tool to verify possible future conflicts within the setback. In this respect we could mention a possibility to adjust the spatial plans to the Article 8 requirements, especially in the revision process. It is also important to mention that spatial plans themselves do not give the 'final' rights to developers or owners to develop, i.e. build in the area. This is done by the building permit. So, for whatever construction the building permits have not yet been issued, the adaptation to the Article 8 clauses can still be made. Consultation with stakeholders, municipalities, land owners, etc. is not mentioned. However, it should be stressed that such consultations are a very important element of the definition of the setback.

The report was provided in Italian so some misunderstanding could have happened when interpreting the methodology and results of this pilot project.

The main objective of the project presented by the Hérault Department was the restoration of the natural functions of the beaches and to allow natural erosion to take place in the area. These include the removal of riprap (hard) beach protection and dune reconstruction. This operation requires also the removal and replacement of some activities in these areas, such as campsites and cabins. The setback zone definition was related to solving those problems in the first place. In turn, this approach also shows that the setback zone serves the protection of the property and that in the future there should be no construction within the setback, as the coastal erosion and sea-level rise will cause damage in the area. It is, therefore, a sort of 'alarming' zone for the development that could otherwise be damaged due to those processes. However, the existing activities need to be displaced or abandoned primarily because of the erosion problems, not the setback definition itself. If all those existing structures (campsites, cabins) are regarded 'construction' than, in any case, they cannot fall within the setback zone regime. It should be mentioned that the Article 8 is not retroactive, which means that the existing constructions will not be removed because of this instrument, and also that the setback is not defined in the areas already constructed. From the description of the existing uses (campsites, cabins) it is not clear if the whole areas where these activities are located are built up. Most probably, cabins and a majority of the campsites are still mainly not built-up. If there are some roads or paths within the area which is mainly in a natural state than such areas can simply be included in the setback. Some major buildings can be the reason to exclude such plots from the setback.

The baseline definition takes coastal erosion into account as well as the analysis of the existing regulation, such as the public maritime domain, the existing Coastline Law which defines 100 m (300 m according to the interpretation of the Hérault administration), or by visual observations (not regarded official). This analytical part provides a good overview of various criteria to be taken into account when defining the baseline. Moreover, the methodology for the definition of the baseline takes also into consideration the level of risk of coastal erosion (high, moderate, low), other coastal risks and sea-level rise as a consequence of climate change. Therefore, the baseline is very well documented.

The setback zone definition was prepared following two approaches, the erosion processes (hydro-sedimentary approach) and the urban coastal law (regulatory approach). The concerns of the financial implications of compensations following the owners' expropriation proceedings were an important factor discussed in the pilot project. GIS analysis of different options (levels of risk) were calculated with regard to campsites, cabins and options for transfer to other locations, including estimates of cost of such operations.

Comment

The impression is that the major issue that was dealt with in this case was actually the restoration of natural functions of the beaches and dunes, which, as a consequence, requires displacement of some activities from the area. Although a good analysis of the baseline is provided, the landward limit of the setback zone would need further consideration.

The project shows difficulties and strong linkages of the definition of the setback zone with the owners' rights and stakeholders, which is an interesting issue. Therefore, negotiations and early involvement of all the parties (legal entities campsite representatives, cabin owners, etc) and actors in the process of the setback definition is crucial. This should be done from the early stages of the definition of the setback which seems not to have been the case in this pilot area so far. However, the Governance procedure elaborated gives a comprehensive picture of 'who' should be involved and with 'what' tasks in the process of implementing the requirements of the Article 8.

The report, at a certain point, discusses also the level of obligation towards the Protocol, and in particular the Article 8 which is, according to the report, a “moral obligation” of the parties. With regard to the meaning and legal obligation of the Article 8 it should be underlined that the Protocol says “Shall establish....” , which is a clear legal obligation of the parties and not just a “moral obligation” as stated in the recommendation proposal at the end of the report by the Hérault Department. It is important to point out this issue so as not to mislead future users of the report.

Conclusions

All three APs provide an interesting diversity of cases, such as the diversity of coastal areas (sedimentary and rocky) and the approaches used. These are three examples of good approach, as far as the definition of the baseline, including the analysis of existing institutional to physical conditions, as well as providing compatibility analysis of the proposed setback zone with the existing regulation, such as spatial plans. However, where an additional effort could be done is the definition of the landward line of the setback zone, but it is obvious that a project of such limited resources and timeframe could not do it. Some other possibilities could be searched in order to comply with some Article 8 provisions and, for example, to extend the setback beyond the 100 m line in cases where some specific habitats exist or in the cases where some areas are classified as protected. Also, it was not always obvious that the already urbanised areas had been excluded from the setback zone. Or, for example, in the urbanised areas some green areas on the sea side could still make part of the setback.

A clear distinction has to be made between what ‘construction’ is and what is not. The legal interpretation is most likely different from one country to another, but it has to be respected.

Involvement of stakeholders was well elaborated in the Hérault case, while this part was not documented in the Liguria and Lazio cases. Early involvement of stakeholders is crucial for the effective implementation of the setback regime.

It can be concluded that all these examples will make a good basis for the collection of good practices and be shared with other Mediterranean partners. The only element for which more effort should be made is the landward limit of the setback zone where additional criteria to allow more flexibility from the automatic 100 m line could be elaborated (biodiversity, conservation status).

Best Practice 5: Regional Strategic Plan

Mediterranean coastal and marine zones being exposed to many risks and threats, they are in the focus of attention of many actors (including donors) that promote a variety of initiatives and bring resources. This multitude of initiatives, very often isolated and/or repeating what had already been or is being done, makes them inefficient, creates confusion and saturation of stakeholders, leading to the waste of efforts and resources. Therefore, creating a “joint front” would be a much better option than the fragmentation of resources, both financial and human.

In that respect, the Joint Action Plan (JAP) proposed by the COASTGAP project is a good step forward. The idea comes from the MEDGOVERNANCE project and its Regional Strategic Intention regarding a macro-project for a coordinated, multi-sectoral and wide action for coastal sustainable defence against climate change effects and natural and anthropogenic threats. It was promoted by the Lazio Region towards a large coalition of 11 Adopting Partners.

The workplan for the Best Practices is clearly presented in the first deliverable (D3.1/A: Promoter Partners’ Report) and goes from an analysis of the existing proposals of strategic plans on coastal management, through the agreement on a JAP, its design and feasibility analysis, to the final design and possible approval. The objectives and frame of contents set for the JAP are clear and precise,

some being sectoral while the others are more integrated. Very useful and informative is the graph presenting the interaction between the JAP activities and the COASTGAP BPs.

The deliverables 3.1/B (Analysis) and 3.1/C (Letters of Intent) of this BP not being available on the web site at the moment of this audit, it is not possible to comment on them. However, having looked at the JAP itself and the e-mail exchanges among the project partners, the following can be concluded:

- The JAP took into consideration a collection of “Major Coastal Projects” made with the aim to provide a framework (mapping) of major coastal interventions needed in the Mediterranean region;
- The JAP is structured in 3 strategic themes, which cover important fields of action to promote sustainability in coastal zones (1 – knowledge, monitoring and data management; 2 – sustainable use of resources for the blue growth; and 3 – research and innovation);
- The number of coordinating partners and those to be involved in the initiatives listed in the JAP is rather limited. The question is whether the others were not interested, or they just did not communicate their wish to take part in these initiatives. If not interested, it may be worth re-considering the joint actions proposed. If latter is the case, an additional effort in this sense could be made.

The approach followed in this BP is very useful as it contributes to the clustering of the fields of action that can be proposed for the European and any other funding in the next period (until 2020). It would be useful to make an additional effort to try and identify the areas (territories) in which the proposed actions are to be implemented as a priority.

This way of clustering could be recommended as a model for the South and East of the Mediterranean. Also, the COASTGAP partners could consider attracting and including other Mediterranean partners in their initiatives. In this, PAP/RAC can play a catalysing role. On the other hand, PAP/RAC will take into consideration the JAP priorities while preparing its own project proposals.

Best Practice 6: PEGASO Spatial Data Infrastructure and Geoportal for ICZM

The importance of good-quality data to support the formulation of policies, the decision-making process, as well as the everyday management actions is well-known. The FP7 PEGASO project has built a Spatial Data Infrastructure (SDI) which complies with the Open Geospatial Consortium (OGC) standards and the INSPIRE Directive. It contributes to interactive information sharing, ensuring that spatial data are well organised and standardised. It includes a network of “geonodes” created by project partners, which can be extended to the entire Mediterranean and Black Sea regions.

The leader of the PEGASO Work Package (WP3) on SDI was the University “Pablo de Olavide” (UPO) from Seville that is also the promoter of this Best Practice within the COASTGAP project, namely towards three project partner regions: Emilia-Romagna, Lazio and Liguria.

It is to be noted that the PEGASO SDI was a very important and successful element of the project, which had also capitalised on previous practices i.e. from project partners involved in a network for data harmonisation (INSPIRE, GEO-GEOSS, ICAN, EDMONET, EIONET, etc.). The enrichment of the infrastructure by the COASTGAP partners can therefore be seen as another loop in the chain that will hopefully continue to exist through other similar initiatives to serve the needs of the ICZM Protocol and relevant EU Directives, in particular MSFD and MSP.

A well-structured questionnaire submitted to the Adopting Partners to understand their potential for linking to the PEGASO SDI and creating new “geonodes” was largely inspired by the survey used in

PEGASO. It was focused on: legal frame of application, levels of technical capacity, available data infrastructures and potential data sources. The results for each AP can be summarised as follows:

- Emilia-Romagna Region – there is a wealth of data regarding the coast, which are collected in the Sea and Coast Information System managed by the Geological, Seismic and Soil Survey Service. In addition, the Region has developed a coastal defence and management information tool based on the subdivision of land into coastal cells (link to BP2 of COASTGAP). An evaluation test is needed to better understand the compatibility of the two systems and which data can be suitable for ICZM implementation.
- Lazio Region – the existing ICZM Monitoring Centre has all technical skills and staff needed to be in charge of the capitalisation. A low level of customisation measures in foreseen to take part in PEGASO SDI. The ICZM database of the Region is a good starting point for feeding the SDI, and activities by the COASTGAP BP9 on Coastal Observatories could be pivotal for its maintenance.
- Liguria Region – a lot of georeferenced maps and data have been produced and managed at the level of the Region, and are easily accessible through the web services. Within a previous MED project, MAREMED, the Region had an experience similar to the PEGASO SDI. The Territorial Planning Department responsible for the capitalisation on PEGASO SDI has all technical skills and staff needed, and most of the data comply with the INSPIRE Directive. However, an additional testing is needed of the compatibility of the catalogues and web viewer tools, while the PEGASO Atlas could become a model.

Based on this initial survey and the joint work that followed among the project partners involved in this BP, all three regions have shared their Data Catalogues (interoperable web services), thus populating the PEGASO SDI (catalogue and viewer) with cartography concerning coastal zones that can be fully accessible through the PEGASO Geoportal (Fig. 12).

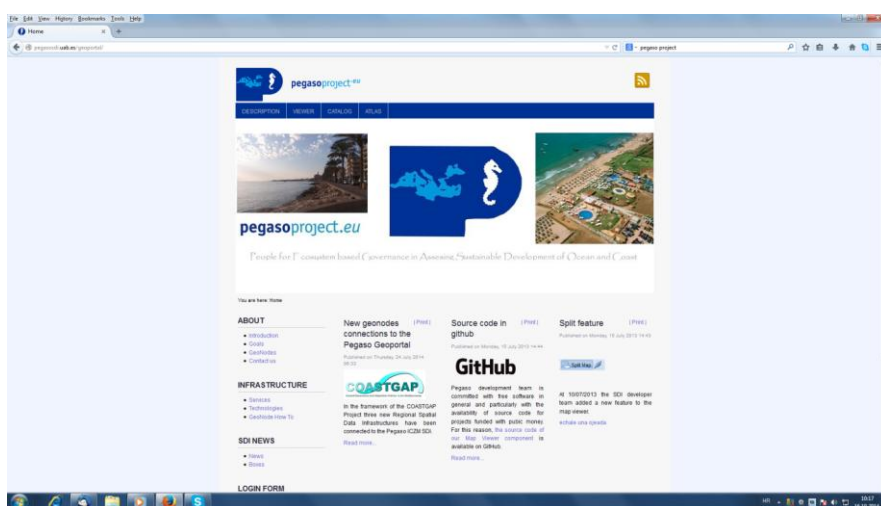


Figure 12: COASTGAP announced on PEGASO Geoportal

PAP/RAC, as the implementer of the ICZM Protocol for the Mediterranean, as well as a partner in the PEGASO project is particularly happy with the results of this capitalisation exercise, which can be recommended as a good approach even for future ICZM and MSP projects in the Mediterranean. Interoperable data infrastructures are extremely useful when it comes to the implementation of region-wide initiatives and projects that are the core business of UNEP/MAP and its components, and there is a history of facing the problem of data gaps, their difficult comparison in various parts of the Region, impossibility to measure progress with same parameters, etc.

Last but not the least, a UNEP/GEF project on Climate Change & Variability, in which two UNEP/MAP components are involved (PAP/RAC and Plan Bleu/RAC), is in the process of creating its own data infrastructure with the idea to link it to the PEGASO SDI. This will be an additional source of data and information about the main COASTGAP theme.

Best Practice 7: Risk Model COFLERMAP – Coastal Flood Erosion Map

The Promoting Partner for the Best Practice „COFLERMAP“ is the Lazio Region, and the partners interested for its adoption are the Region of East Macedonia – Thrace (REMTH), Crete and the Tuscany Region.

COFLERMAP is a model for the coastal hazard/risk mapping representation according to the EU Flood Directive. The concept of the model was developed during the MED MAREMED Project (2010-2013) by the Lazio Region and has been shared for dissemination and discussion during the MED COASTANCE project technical meetings by 15 Mediterranean coastal public Administrations. The model concerns risk mapping, i.e. the methodologies to cross basic territorial data (hazard, exposed values, morphology) among them, in order to achieve a geographic and quantitative distribution of risk, compliant with the Flood Directive requests. The reliability of the model was tested in 5 more international projects. It is interesting to note that the conceptual framework for the model was developed on the basis of the Varnes UNESCO formula, where Risk is defined by the product of Hazard and Damage and represents only the expected economic damages in terms of €/year/area.

It is also interesting to note that the COFLERMAP was tested on the Montalto coast of 1.4 km, a rather narrow stretch of the coast. In REMTH the coastal zone under assessment has a length of 450 km, while Crete disposes of approximately 1,148 km of the coastline. The COASTGAP project foresees the technical documents that are to be prepared by Lazio consisting in presenting the method, while the adopting partners, REMTH and Crete, are supposed to assess the need for and the benefits of the application of the COFLERMAP. Upon the elaboration of the feasibility study and the administrative approval of these documents, the search for further sources of funding will be launched. As for the COASTGAP this is where the activity plan stops. The process of capitalisation, however, foresees technical adaptation of the method, including less data and larger-scale maps, as well as a possible implementation of the first phase only in urbanised coastal zones. However, it all depends on the future funding sources.

At the time of this assessment, the only available technical reports on the web site (3.1. A and 3.1.B) do not provide sufficient information to understand whether the capitalisation will be materialised, or if it will only remain at the level of the feasibility study. However, at this stage, both regions concluded that they needed an application with less detail that would give results for a larger territory so as to promote a regional plan for future adaptation works.

As for the Tuscany Region, the COFLERMAP is to be applied on the test-site, Marina di Massa, currently subject to restoration works. From the report it is not clear whether the test-site is an urbanised coast, or what part of the site is urbanised.

Section 5 of the 3.1.B report introduces a new adopting partner, interested in the adoption of the COFLERMAP. The Port Institute for Studies and Cooperation of the Valencia Region, Spain, expressed interest in testing the tool in one or two pilot sites of the Valencian coast in order to check the possibility of adopting it for wider purposes on the basis of the obtained results.

It is interesting to compare this concept with the core concepts of the IPCC Working Group 2 for the AR5. In order to strengthen the existing methodologies, as well as the scientific and political strengths for challenges of the climate changes and its consequences, it would be recommended to work on the convergence of terminology, approaches and methods.

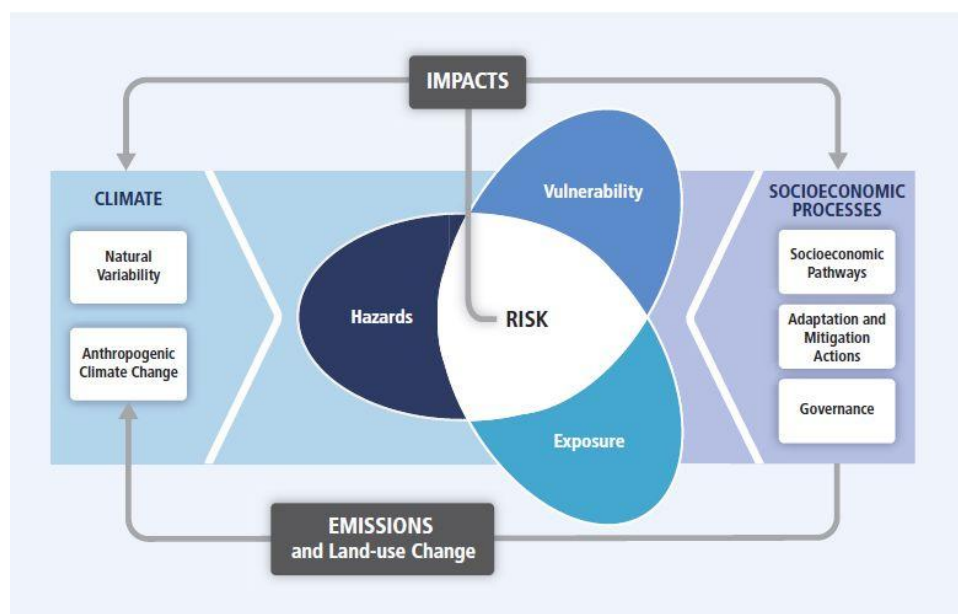


Figure 13: Illustration of the core concepts of the IPCC WGII AR5. Risk of climate-related impacts results from the interaction of climate-related hazards (including hazardous events and trends) with the vulnerability and exposure of human and natural systems. Changes in both the climate system and socio-economic processes including adaptation and mitigation are drivers of hazards, exposure and vulnerability.

Finally, recommendation for every risk assessment methodology is to be very precise with the indispensable data request, additional data request and the size and nature of the coast for which the methodology is the most suitable.

Best Practice 8: Integrated Quality Model for the development of sustainable routes

The Integrated Quality Management Model (IQM) is envisaged as a transferable governance model for the promotion and territorial marketing of sustainable tourism in fragile coastal and island areas of the Mediterranean. The specific objectives of the model are to provide a system for the extension of the tourism season developing and enhancing new types of tourism other than the “sun and beach” model, by exploiting the natural and cultural assets of each territory. It should also address the lack of quality in the fragmented tourism supply through experimenting an IQM approach with key stakeholders. Furthermore, it tends to assess key critical areas in environmental terms for the sector (waste, marine pollution, coastal erosion, etc.) within an ICZM vision.

One of the aims of the COASTGAP project was to capitalize on the results of the SHIFT project (i.e. IQM for the development of sustainable routes), setting up a link between the Region of East Macedonia - Thrace (REMTH) as a Promoting Partner (PP) and the Regions of Lazio, Emilia-Romagna and Liguria as Adopting Partners (AP). Even though the envisaged activities within the process were not too ambitious (mainly related to the dissemination of model-related information through organisation of seminars and visits) based on insight into the available outputs (Promoting Partner’s Report (3.1/A) only) and through communication with some of the adopting partners, it became evident that capitalisation had not been done and it is not expected to be done during the project duration. The PP completed all the necessary procedures for the adoption of the BP, and the APs tried to involve the relevant outside partners (e.g. tourism offices), but no significant feedback was obtained (among other reasons for lack of time and/or interest). The adoption of a model to allow a more sustainable coastal tourism (like IQM), is clearly another kind of approach to attain the same goal of the protection of the coastal zone. However, in this case, the capitalization activities didn’t involve directly the people engaged in the COASTGAP partnership but other structures of the participating Administrations, which made the capitalisation more difficult. Given that the available

time for the Project completion was very short, there was no time to push and insist on this kind of indirect capitalization activity.

Best Practice 9: Coastal Observatory

The ResMar sub-project B, a network of cross-border centres for the study of coastal dynamics, is based on the creation of a cross-border centre for the study of coastal dynamics, consisting of a network of stakeholders that discuss and develop shared methodologies for collecting and analysing data, to be used in the future in coastal monitoring. The objective within the COASTGAP project is to share the Monitoring Protocol with partners and stakeholders.

This BP is expected to allow the users to retrieve global/local trends in coastal evolution, and associate them to different scale (spatial/temporal) causes (adaptive coastal management). A number of public and research institutions / countries adopting the Protocol, exchanging and processing their data, will be assessed.

The Promoting Partner of the BP9 is the P6 Region of Tuscany. Declared Interested Partners are: P1 Lazio Region; P2 Emilia-Romagna Region; P7 Liguria Region; and P12 CETMEF.

The activities to be carried out include: 1) Dissemination of the beach evolution monitoring protocols between the partnership and the project network; and 2) Discussion on possible merging of different WebGIS and technical demonstration of the added value at the regional level of this integration.

As a first step in the capitalisation of the BP9, a “key points” table has been prepared and disseminated to relevant Administrations and government bodies of various levels in order to obtain the feedback from Adopting Partners on: a) administrative, b) technical/scientific; and c) practical issues.

As outlined in the Coastal Observatory Capitalisation Roadmap, four types of Activities are carried out throughout the Project implementation: A1) Dissemination of the methodology to the Partners Involved; A2) Analysis of coastal data availability finalised to evaluate WebGIS customised versions feasibility; A3) Customisation of WebGIS based on data availability and peculiar coastal assets; and A4) Adoption of customised WebGIS and programming its implementation, by each partner.

The Province of Livorno and the Province of Olbia-Tempio each developed a Web-based Geographic Information System (WebGIS) – platforms fed with data collected in the field. Through the two branches of the Cross-Border Centre, CreStDiL and OCEANS, they have developed a system in order to allow data sharing and displaying of information to external users. A comparison between the Coastal WebGIS proposed by Tuscany and Lazio was done. The proposal is to elaborate a common list of themes to be developed and maintained in order to promote the network of observatories.

Three Technical Reports were produced as results of the process of capitalisation of the BPs: 1) Technical Report 3.1/A - Presentation of the BP by the Proposing Partner; 2) Feedback Report 3.1/B - Adaptation measures proposed by the Adopting Partners for the best BP capitalisation; and 3) Technical Acts 3.1/C - Technical Acts produced by the Adopting Partners, appropriate for the official internal adoption of the customised BP.

It is worth mentioning that the Cross-border centre for the study of coastal dynamics, with its two offices, one located in Sardinia and one in Tuscany, has developed a valuable data-sharing system with two WebGIS platforms fed with data collected in the field. It is expected that users will be allowed to retrieve global/local trends in coastal evolution and associate them to different scale (spatial/temporal) causes.

Also, PAP/RAC appreciates the endeavours of the Project partners to promote the ICZM Protocol as a reference framework of the Coastal Observatory. The promotion is considered particularly valuable of the Article 16 on Monitoring and Observation Mechanisms and Networks, inviting the Parties "to use and strengthen existing appropriate mechanisms for monitoring and observation, or create new ones if necessary". According to the Protocol, they "shall also prepare and regularly update national inventories of coastal zones which should cover, to the extent possible, information on resources and activities, as well as on institutions, legislation and planning that may influence coastal zones".

Best Practice 10: DIVA model

The Promoting Partner for the Best Practice „DIVA model“ is Christian-Albrechts University of Kiel, Germany, and the partners interested for its adoption are the Lazio and Emilia-Romagna Regions.

Downscaling and application of the "DIVA model" by the region that developed and applied COFLERMAP may be assessed as one of the key contributions of the COASTGAP project. Namely, DIVA is a global integrated model of coastal systems that assesses biophysical and socio-economic impacts of sea-level rise and socio-economic development (Hinkel and Klein, 2009). The model operates on a linear representation of the world's coastline, which comprises 12,148 linear segments and associates about 100 physical, ecological and socio-economic parameters with each of these segments (Vafeidis *et al.*, 2008). At present one of the advantages DIVA has compared to other similar methods is that a big part of the world coasts have been assessed using this methodology. Therefore, it is possible to compare different world regions and to develop data on priority of certain areas for adaptation. Being a global method, it is clear that the approach is rather different in level of detail compared, for example, to the COFLERMAP which was applied in the area of 1.4 km of the Montalto area in the Lazio region. For that reason it is of utmost importance to build vertical relationships between global, national, regional and local methods for risk assessment. Also, it is important to understand what a certain region's needs are – the size of the territory to be assessed, the nature of the information needed, the level of detail of the information expected, and the eventual purpose of the information.

If the situation with the climate develops as the IPCC foresees now, there will be many world regions severely endangered by the sea-level rise and other consequences of the climate variability and change. Not all that is in need will be possible to protect. Highly populated poor areas will be the challenge for the Planet. If not helped by the developed countries, climate migration from the poor countries may represent the key factor of instability of the future world. Finally, from an ethical point of view, poor countries that will suffer the most are the least responsible for the situation with the climate. Therefore, it is important to understand that decisions on adaptation should be brought from the very high level. From the state of the world today it is hard to consider the Planet as a level for decision making. But an external threat of that kind would be best addressed from such a level. Unions as European, American etc. will probably be in the position to select the areas for investments according to the best cost/benefit or cost/effectiveness ratio. However, in the political situation of the 21st century, the Mediterranean as a region is becoming more and more divided. Taking into account the European wealth compared to the southern and most of the eastern shores of the Mediterranean on the one hand, and population projections in the north compared to the south on the other, it is very clear that no sustainable future can be ensured for Europe unless the destiny of the entire Mediterranean is taken into account. As it used to be in the history, Mediterranean will not at least be less – "*mediterraneus*" – middle of the land in the future.

Therefore, capitalisation of DIVA in the Lazio Region largely exceeds the significance of capitalising Best Practices in another area. Its comparison with the COFLERMAP methodology provides the ground to improve both of them and to build relationships between the global and local assessment, first created to enable a global insight into the impacts of sea-level rise and climate change, and to provide grounds for long-term policies, while the second was created to fulfil the requests of the EU

Flood Directive and to enable coastal administrations to evaluate the economic annual risk and to choose optimal solutions for the coastal defence.

A parallel could be established with the Vulnerability Mapping for coastal aquifers. There are many methodologies for Vulnerability Assessment. However, not all of them work equally well for all the settings. Coastal situations are very different, and the local methodology should be adapted to the local specificities. Therefore, the authors of these kinds of methods should put an extra effort in providing indications for which purpose, and for what settings the method is most suitable, as well as to provide clear indication on the data needed, providing the clear difference between indispensable data and additional data.

As for the capitalisation of DIVA in the Region, at the time of this evaluation, the only available technical reports on the web site (3.1. A and 3.1.B) do not provide information on the results of the application, or on the administrative response. Despite the fact that the process was well planned, there are still considerable delays. Therefore, it is not possible to assess the quality of the results, or the potentials for the implementation of the findings. However, obtaining similar results in the Lazio region using both methods, DIVA and COFLERMAP, would be an important confirmation of the quality for both authors. The results are expected with the great interest of all involved.

Best Practice 11: Coastal Video Monitoring Network

The priority of the BP11 is the protection of the environment and promotion of sustainable territorial development. The objective is the prevention of and fight against natural risks. In order to realise this objective it is necessary, among others, to increase and enforce the monitoring of management systems of coastal erosion. This practice is capitalised in the frame of the COASTGAP project through the sub-project, i.e. BP11 Webcam Network for Coastal Erosion Monitoring, as a concrete product.

The aim of the BP11 is to share the coastal video monitoring network platform with the partners and stakeholders in the COASTGAP project. The expected result is to allow the users to create a coastal video monitoring network based on commercial webcams in order to study local beach trends and correlate them to different (spatial/temporal) causes. P7 Liguria Region is the Promoting Partner in the BP11, while P1 Lazio Region and P7 Tuscany Region are Interested Partners.

Two types of activities are implemented: 1. Dissemination of the beach video monitoring system structure and its usage among the partners and the project network; and 2. Discussion on possible system improvements. The Activities, Outputs and Partners Involved, as well as a project meetings schedule, are given in the "Coastal Video Monitoring Network" Capitalisation Roadmap, as follows: A1) Methodology dissemination to Involved Partners; A2) Customisation of Video Monitoring Network according to webcam availability; and A3) Adoption of customised Network and implementation planning for each partner.

As a first step in the capitalisation of the BP11, a "key points" table has been designed to compile information on the administrative, technical, scientific and practical issues needed to analyse the transferability of this BP, highlighting the required adaptation measures for the suitable capitalisation of the BP. Project partner collaboration and assistance was assured through direct contacts, e-mail exchange, videoconferences and specific workshops/meetings scheduled with the Involved Partners, as well as through project meetings. In conclusion, three Technical Reports were produced, as results of the process of capitalisation of the BP: 1) Technical Report 3.1/A - Presentation of the BP by the Proposing Partner; 2) Feedback Report 3.1/B - Adaptation measures proposed by the Adopting Partners for the best BP capitalisation; and 3) Technical Acts 3.1/C - Technical Acts produced by the Adopting Partners, appropriate for the official internal adoption of the customised BP.

The introduction of an experimental video monitoring network in the ResMar project is an innovative and very useful tool for analysing near-shore processes over a wide temporal range in a continuative and automatic way. The website (<http://beachcam.res-mar.eu>) created to host the acquired data and make them available to end users is an excellent way of communication and dissemination of data obtained to partners and stakeholders in the COASTGAP / ResMar project. In addition, the network allows the users to create a coastal video monitoring network based on commercial webcams in order to study local beach trends and correlate them to different (spatial/temporal) causes.

The website in general is seen as the project's most important communication channel with the external world. Therefore, it should be clear and accessible not only for the project partners but also for those not familiar with the project (here, we refer to COASTGAP and ResMar websites). Perhaps providing summaries outlining the key points of each document / activity would increase the understanding of the project and its activities across a broader range of non-specialised stakeholders? The website should be regularly updated and improved, be more user-friendly, complete and useful not only for accessing reference documents, learning about partners involved and alike, but also for learning about the project's latest activities so that people can keep on top of what was being done. Last but not least, information should be presented in a more appealing way.

PAP/RAC, as the implementer of the ICZM Protocol for the Mediterranean, welcomes the BP11 and its priority to protect the environment, as well as its objective to prevent and fight the natural risks – in this case, increasing and enforcing the coastal erosion monitoring, as a direct promotion and application of the Protocol and its Article 23 on Coastal Erosion. Further, PAP/RAC appreciates the creation of the Coastal Video Monitoring Network as an instrument for ICZM, in particular with the view to the promotion of the ICZM Protocol's Article 16 on Monitoring and Observation Mechanisms and Networks. Worth mentioning is also the establishment of the ICZM Monitoring Centre (Lazio Region) providing for research on ICZM, and assisting in monitoring and managing the coastal environment in particular by using the video morphologies extraction techniques.

Best Practice 12: DSS to determine the best defence planning

The Decision Support System (DSS) to determine the best defence planning is composed of algorithms that propagate hydraulic parameters from offshore to the inner coast. It follows a source-pathway-receptor-consequences scheme. It is fed upstream by climate and environmental scenarios which represent wind, sea level, storm surge and waves in the offshore sea. Those parameters are propagated to the coast which is made of beaches or dikes. Combining the hydraulic parameters (duration of the flood, velocities of water, level of flood) with GIS layers of social, economical and ecological characteristics of the coast, the software evaluates the impact of a storm on the coastal region.

The capitalisation initiative was promoted by CEREMA, based on an EU FP7 project, "Theseus", that involved 31 partners. One of the main outputs of the project is also a decision support system as software which gathers all the developments that were made in Theseus in a consistent way, and offers a possibility to quickly and roughly evaluate the benefits of a mitigation option or a combination of options. The DSS only holds very simplified models and its results cannot be trusted for accurate delineation of risk maps on which a spatial planning policy would be based. The APs were the Lazio region, the Hérault Department and the Reports.

Two reports, namely 3.1/A and 3.1/B, were prepared by UPO - Seville. The Report 3.1/A briefly introduces the best practice, as well as a capitalisation roadmap with the main activities and expected outputs provided by the PP. The following report, 3.1/B summarises the inputs provided by the APs. Those had the objective to analyse the applicability of the BPs in the participating regions, to analyse the technical and/or formal gaps between the original BPs and the specific needs of the partners, data availability, as well as other issues related to customisation of the tool.

According to the road map all three partners (Lazio, Hérault and Feports) were supposed to assess and decide the level of BP adoption according to their own technical and administrative possibilities and to prepare technical acts 3.1/C on BP, each describing the customized practice and how to apply it in the concerned territory.

In the available report 3.1/B on the COPASTGAP web site only the Lazio region completed the first part of the task. It can be summarised as follows.

The Lazio region has developed the COFLERMap model for the evaluation of risk maps of the coastal areas during the Coastance and Maremed projects. It has been tested and can be used in other regions. There are no administrative or technical/scientific obstacles to capitalise on the DSS system of COASTGAP either. Other capitalisation needs were elaborated, too, such as data availability and practical issues. However, there were technical/access problems to the DSS system due to copyright restrictions that prevented the AP from concrete capitalisation of the DSS. We assume the same was with the other two APs, as their reports are not included in the 3.1/B report nor are the 3.1/C reports of all three APs available.

To conclude, three APs have showed the interest to participate in the capitalisation of the DSS to determine the best defence planning. However, it seems that due to obstacles related to web accessibility of this system the activity could not be fully accomplished.

5 - CONCLUSION

The COSATGAP is an innovative approach in using the outputs of already completed projects aiming at capitalising on their findings, tools, approaches, methodologies, i.e. experience. In this way the tools and other products of those projects remain alive and active after the end of the relative projects, which is rarely the case. The COSTGAP has developed a large network of partners who exchanged knowledge, experience and products among themselves, and the partners investigated if some of that experience could be applicable and/or give good results in their respective areas. These attempts showed varying degree of success; some were fully successful and applicable, while others presented difficulties when transfer to another region was attempted.

The process foreseen to capitalise on the practices could be considered as well structured, particularly with regard to the agreed outputs. Namely, the idea of three Technical Reports, beginning with the presentation of the Best Practice by the Proposing Partners, followed by the Feedback Report containing Adaptation measures proposed by the Adopting Partners for the Best Practice capitalisation, and finally Technical Acts produced by the Adopting Partners, represents well the dual character of the process, and puts both sides into an active position, increasing the chances for success. However, at the moment of evaluation for several Best Practices it was not clear whether the capitalisation would actually happen. Namely, no Best Practice provided the Technical Acts or Administrative Acts published.

The achievement of the aim defined as “production of governance and adaptation policies aimed at reducing risk along coastal zones and foster their sustainable development” will be much more difficult to assess. Major tools to reach these objectives are actually the strategic best practices – Joint Action Plan and the Bologna Charter. It can be noted is that the aim in the field of governance and policies should involve more levels of government, primarily the representatives of the national governments.

The challenges of reducing risks along the coastal zones, as well as fostering sustainable development along the Mediterranean coasts are definitively immense. Facing the challenges that climate

variability and change bring asks for an integrated, holistic approach, more than ever before. Considerable investments that will be needed in many coastal zones will not be available everywhere. Priorities should be established, so the criteria for the establishment of priority zones are among the biggest and most urgent needs. One of the factors which will be of a major importance is population projections. The number of people dealing with the challenge will be an important factor for all - local, regional, national or more global levels. In meeting these challenges a global approach will be of a great importance. Following the global level, the national level is to play an important role when choosing priorities, as well as for securing funds. Building vertical integration should be one of the objectives for any project dealing with challenges of this size. Finally, having in mind that major policies, as well as legal settings, are still defined at the national level, the regional networks created without involving national governments provide to some extent fragile setting.

From the above, two key recommendations for the Strategic BP, the Joint Action Plan, can be proposed:

- the national level should be involved,
- criteria for the establishment of priority zones for adaptation are among the biggest and most urgent needs.

In addition to that, the following recommendation may be made with regard to the project's process:

- Since the Technical Acts required to be appropriate for official internal adoption of the customised Best Practices are not available at the moment of this evaluation, it is not possible to indicate to what extent these practices will be capitalised. For that purpose, an additional evaluation of the project outputs and outcomes should be foreseen. It is also recommended to investigate more on the reasons why certain practices were not capitalised.

Finally, it is important to note that in some cases, capitalisation goes even further from the initial idea, since sometimes it represents a motive for initiation of actions that later on developed into something more specific, which was recognised as a priority need in the region of the Adopting Partner. In some cases, these follow-ups, or additional activities may provide significant contribution towards sustainable coastal development in the Adopting Partner region. In these cases, capitalisation actually represented an impetus for additional activities.

However, the capitalisation of certain Best Practices can be more difficult if the personnel in charge of the specific matter dealt by the Best Practice itself are not directly involved in the partnership but requires outside persons or organisations. The available time for the Project completion being rather short, sometimes there was no time to insist on this kind of indirect capitalisation activity

Given that PAP/RAC is in charge of ICZM Protocol implementation in the Mediterranean, we have paid more attention to the issues linked to it, and especially its flagship article, the Article 8, and we provided some additional examples as well. We found very positive the definition of the baseline, for which various methodologies were used. However, more attention should be paid in the future to the definition of the setback zone which should not be automatically defined as a strip 100 m wide from the baseline. The Article 8 provides room for flexibility in defining the setback, and those criteria should be taken into careful consideration.

Generally speaking, the approach offered by the COPASTGAP is highly recommendable and should be promoted for the future. Because, even if not everything can be transferred, there are always practices or elements of practices that can be used saving, thus, effort, time and resources.

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