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PRELIMINARY INFORMATION

IN FRANCE THE COMPETENCE FOR THE TRANSCRIPTION OF FLOOD DIRECTIVE IS DEVELOPED BY THE STATE NOT BY THE REGIONS

THE LOCAL AUTHORITIES WILL HAVE OBLIGATIONS TO DO TERRITORIAL CLIMATE PLANS FOR MITIGATION AND ADAPTATION BEFORE 2013;

DIAGNOSTICS ON ADAPTATION TO CLIMATE CHANGE IN COASTAL AREAS

Partner	**PROVENCE-ALPES CÔTE D'AZUR**
Region	**PROVENCE-ALPES CÔTE D'AZUR**
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Introduction

This questionnaire was developed by Regione Lazio for MAREMED Project, diagnosis phase, theme: Adaptation to Climate Change (ACC) in Coastal Areas.

It is addressed to Maremed partners and Mediterranean public administrations directly involved in coastal zone management.

MAREMED – Maritime Regions cooperation for Mediterranean, is a project started in 2010 and co-funded by the MED Programme, that involves 15 partners among Regions and local administrations from France, Italy, Spain, Greece and Cyprus together with the Conference of Peripheral Maritime Regions (CPMR)

The project is dealing with the following themes: maritime policy governance, the integrated management of coastal and maritime areas, fisheries, climate change adaptation in coastal areas, efforts to reduce pollution and data management.

Its objective is to develop tools for enhancing and coordinating regional, European and Mediterranean policies on these six thematic strategies.

In the first work phase (the present one), an overview of the policies implemented and their governance by the project partners will be carried out. In the second phase the partners will identify pilot coastal zones where they will promote transnational management initiatives and share operational tools in order to aid the decision-making process for the six thematic strategies.

This questionnaire took inspiration from two works already started during BEACHMED-e project and Coastance project (MED programme).

During the Obsemedi sub-project of Beachmed-e - whose aim was to realize a feasibility study to set up a Mediterranean Interregional Observatory for coastal zone management -, the results led to the realisation of a list of about 40 public structures operating in coastal zone management and the publication of the activities and tools necessary to deal with the problem.

> "…Floods are natural phenomena which cannot be prevented. However, some human activities (such as increasing human settlements and economic assets in floodplains and the reduction of the natural water retention by land use) and climate change contribute to an increase in the likelihood and adverse impacts of flood events…"
>
> *EU flood directive 2007/60/CE*

Coastance questionnaire, developed by Département de l'Hérault, coordinator of component 3 "Coastal Risk: Submersion and erosion" led to the comprehension of the state of the art of the activities linked to Mediterranean coastal risks and submersion management and forecasting. Eight public Administrations coming from Italy, France, Spain, Greece, Cyprus and Slovenia took part in this work.

Regione Lazio, Maremed ACC theme coordinator, is now requested to take a step ahead: to understand and encourage the development of tools and methods to counter the problem of climate change adaptation in coastal areas.

"White paper" on Adapting to climate change (http://www.medregions.com/pub/doc_travail/gt/66_en.pdf) suggest the integration of climate change issues for the implementation of the Floods Directive 2007/60/CE. "...Full implementation of this Directive by the EU Member States will help increase resilience and facilitate adaptation efforts.... (COM(2009) 147, p. 11)"

This work must consider European flood directive as the point of reference to regulates the problem of flood risk evaluation, taking into account climate change adaptation in coastal area. This directive states in a specific way the need to consider climate change effects during the evaluation flood risks future scenarios.

Eventually, we have a regulation explaining how to assess and manage flood risks in coastal areas and the European Commission fixes clear deadlines for Member States to comply with the requirements of the flood directive.

This directive, approved by most Mediterranean Member States (http://ec.europa.eu/environment/water/flood_risk/timetable.htm), is reference point chosen by Regione Lazio for the development of this questionnaire.

Main Objectives of the questionnaire

- Understanding the knowledge level of the "flood directive" effectively demonstrated by the Maremed partners, and especially understanding the real capability of Mediterranean administrations to meet the milestones proposed by the European Commission.
- Research of tools and methods currently available to address the problem of risk map elaboration, also collecting some experiences and suggestions coming from MAREMED partners for the next financial programme (2013 - 2020).

FLOOD HAZARD MAPS AND FLOOD RISK MAPS

Article 6

…8. Member States shall ensure that the flood hazard maps and flood risk maps are completed by

22 December 2013.

FLOOD RISK MANAGEMENT PLANS

Article 7

…5. Member States shall ensure that flood risk management plans are completed and published by

22 December 2015.

EU Flood risk directive 2007/60/EC (Requirements and milestones).

The milestones fixed by the flood directive are reported below:

PRELIMINARY FLOOD RISK ASSESSMENT

Article 4

…4. Member States shall complete the preliminary flood risk assessment by

22 December 2011.

The Flood Directive gives Member States some suggestions for the development of flood risk maps. In particular, some detailed information is requested for the elaboration of hazard maps and risk maps.

Some of the main requirements set by the directive are the following:

FLOOD SCENARIOS…

Flood hazard maps shall cover the geographical areas which could be flooded according to the following scenarios:

(a) floods with a low probability, or extreme event scenarios;

(b) floods with a medium probability (likely return period ≥ 100 years);

(c) floods with a high probability, where appropriate

ELEMENTS TO BE SHOWN…

For each scenario the following elements shall be shown:

(a) the flood extent;

(b) water depths or water level, as appropriate;

(c) where appropriate, the flow velocity or the relevant water flow

FLOOD SCENARIOS SHOULD BE EXPRESSED IN TERMS OF:

(a) the indicative number of inhabitants potentially affected;

(b) type of economic activity of the area potentially affected;

(c) installations as referred to in Annex I to Council Directive 96/61/EC of 24 September 1996 concerning integrated pollution prevention and control (1) which might cause accidental pollution in case of flooding and potentially affected protected areas identified in Annex IV(1)(i), (iii) and (v) to Directive 2000/60/EC;

(d) other information which the Member State considers useful such as the indication of areas where floods with a high content of transported sediments and debris floods can occur and information on other significant sources of pollution.

FLOOD RISK MANAGEMENT PLAN…shall take into account relevant aspects such as:

…costs and benefits, flood extent and flood conveyance routes and areas which have the potential to retain flood water, such as natural floodplains, the environmental objectives of Article 4 of Directive 2000/60/EC, soil and water management, spatial planning, land use, nature conservation, navigation and port infrastructure.

Flood risk management plans shall address all aspects of flood risk management focusing on prevention, protection, preparedness, including flood forecasts and early warning systems and taking into account the characteristics of the particular river basin or sub-basin.

Flood risk management plans may also include the promotion of sustainable land use practices, improvement of water retention as well as the controlled flooding of certain areas in the case of a flood event.

The questionnaire:

State of the art: inventory of the cooperation projects on adaptation to climate change

1. *Have you participated in former European programmes on adaptation to climate change in coastal areas?*

yes	
no	X

If so, could you provide the names of these projects and any links to their websites?

2. *Could you describe the main Results, Experiences and Best Practices that you identified in these projects?*

.....

State of the art: inventory of the atlases and databases regarding coastal risks: erosion, submersion, flood

3. *Have you already acquired information or been informed on floods and submersions which already occurred in the past, and which have significant adverse impact on coastal zones?*

yes	X
no	

If so, what kind of information do you have in order to describe the characteristics of the floods already occurred in the past?

The State offices have these informations

4. *Have you already defined a methodology to identify priority areas of risks (erosion, submersion, flood)?*

yes	X
no	

5. *Have you already produced risk maps on coastal areas?*

yes	X
no	

If so, could you briefly describe the overall methodology that you have adopted to produce risk maps?

The Region financed, with the state and under the coordination of our 3 coastal Provinces, atlases of risks for erosion and flood (from land and sea).

The evolution of the coastline was studied with old pictures and maps, models of local currents were calculated, maps of biocenosis were done.

A consultation with public authorities was organized for their appropriation of the level of the risk that will appear on the maps.

All data is free and available on the regional portal.

The problem is that these atlases are not taken into account by the mayors for their planification of urbanism

6. *Did your risk maps refer to the EU flood directive (2007/60/EC) requirements?*

yes	
no	X

We cannot ensure it because these atlases were done before the transcription of the Directive

7. *Have you produced atlases and/or databases regarding coastal area management?*

yes	X
no	

If so, could you provide the names of these atlases and/or databases (in case of web tools, please specify the link to the web page)?

A scientific project permitted us to have atlases of the coastal structures and the evaluation of the artificialisation induced by the ports, coastal dikes... MEDAM project. The results are online;

http://sigcol.unice.fr/website/MEDAM/site_medam/index.php

They can be taken freely on the regional portal

8. *Have you adopted a specific guideline to produce these tools?*

yes	X
no	

If so, do you think your guideline should be shared and adopted by the MAREMED partnership?

We think that we need to know how the other regions did their atlases and to built a common guideline to test it at the basin scale

9. *Could you list some general surveys concerning erosion and submersion events carried out in your Region over the past five years?*

For the necessity of some management plans, a survey was organized in the Alpes- Maritime and in the Var Province.

Cartographic and morphological data

These data does exist but elaborated by the State or by the municipalities for their needs. It's not the competency of the region to produce it, we help financially some strategic actions to be shared among all the regional stakeholders.

10. *Have you already acquired morphological data describing your coastal zone?*

X	*Shoreline acquisition?*
	Equilibrium beach section acquisition?
X	*Erosion trend?*
X	*Sand grain size?*
X	*Chemical and Physical characteristics of sediments?* ***In the ports***
	Sand Dune acquisition?
	*Other…**We are elaborating a project to produce bathymetric lidar data** ……*

11. *What kind of tools do you use for coastal monitoring?*

	Webcam
	Topobathimetric measurement
	Satellite images
X	*Lidar*
X	*Other orthophotography comparisons……*

Suggests for the results; If the needs of bathymetric lidar is put in evidence during MAREMED project, we can suggest to the DG RESEARCH to constitute a European pool of bathymetric "heads" for lidar data

12. *Have you developed common cartographies together with your neighbour region?*

Yes	X
no	

With Liguria Region and with Languedoc Roussillon region

13. *Have you collected information evaluating the subsidence phenomenon along your coast?*

yes	**X**
no	

We help the searchers who are working on the "Camargue" case, in the Rhône river Delta to evaluate this phenomenon.

Meteorological and wave climate data, climate change effects.

14. *Have you collected information on high tide level in your region?*

yes	
no	

Not the region but the national meteorology institute and other state offices. In our region, we have 3 State's buoys to survey the levels of the waves. You can find it in ; (Screen copy at the end of the quesntionnaire).

http://candhis.cetmef.developpement-durable.gouv.fr/

http://candhis.cetmef.developpement-durable.gouv.fr/publications/doc/doccandhis_fr.pdf

15. *Have you collected information evaluating sea level evolution of your Region in the medium/long term (100÷200/500 years)?*

yes	
no	**X**

Yes in some points, (Camargue) but not for all the regional coastline (not the region, the State)...

16. *Have you collected information evaluating offshore meteorological characteristics (wind speed, wind direction, atmospheric pressure, water and air temperature, …) along your coasts?*

yes	
no	**X**

If so, could you specify the period of time the data collected refers to?

	<5 years
	5÷20 years
	>20 years

Perhaps some research program in the CNRS but we are not really informed.

17. *Have you collected information evaluating offshore (about -100 m) wave characteristics (Wave height H, Wave period T and main direction) along your coasts?*

yes	X
no	

The national meteorology institute perhaps...

If so, could you specify the period of time the data collected refers to?

	<5 years
	5÷20 years
	>20 years

Unknown

18. *Have you collected information evaluating nearshore (about -20 m) wave characteristics (Wave height H, Wave period T and main direction) along your coasts?*

yes	
no	**X**

If so, could you specify the period of time the data collected refers to?

	<5 years
	5÷20 years
	>20 years

Social economic data, exposed values

19. *Have you already developed land use maps for your coastal area?*

yes	X
no	

If so, please indicate a reference below, or the website of publication.

Not specifically for the coastal area but for all our territory

20. *Have you already assigned economic values to your coastal area?*

yes	
no	**X**

If so, could you briefly describe the methodology adopted to evaluate the economic values of your coastal area?

This kind of study is just beginning in the Brittany region and we would want to do it in our region. We would want to work on it with other regions and do a pilot action in MAREMED for that.

The Plan Bleu organisation published a study on the value of marine ecosystems : http://www.planbleu.org/publications/Cahier8_marin_EN.pdf

Future scenarios

21. *Are there any key studies containing future scenarios for your area with a focus on:*

	Climate change ***In course with the State***
	Changes in population size ***Done by our national statistical institute INSEE***
	Population dynamics ***Done by our national statistical institute INSEE***
	Economic evolution ***we would want***
	Land use changes; ***we would want***
	Spatial planning ***Regional Scheme***
	Other.....

22. *Could you list some interventions in your Region concerning adaptation measures to climate change in coastal areas, realised over the past 10 years?*

A lot of means to fight the lost of surface of the beaches and to protect the human constructions are developed by the local authorities since 20 years.

The municipalities have the role to manage their coastal line and they do a lot of small actions, principally of beach nourishment, without a global vision at the hydrosedimentary scale. The region try to give some tools to the local actors like atlases of risks, share of experiences and data, technical and financial help, bathymetric lidar data.

Different experiences of geotextile's submarine dikes are done with good and bad results and it would be really interesting to share the results and experiences on these methods which are a reversible way of protection of our coasts against the waves.

23. *Could you identify problems that hinder the development of risk maps in coastal zones (budget; technical competences; technical tools; lack of data or lack of shared data...)?*

The budget is a true problem because we must coordinate numerous sources of budget to arrive to constitute these atlases and it's not a recurrent process.

It seems necessary to implement trainings of public managers to the use of the GIS and the data management.

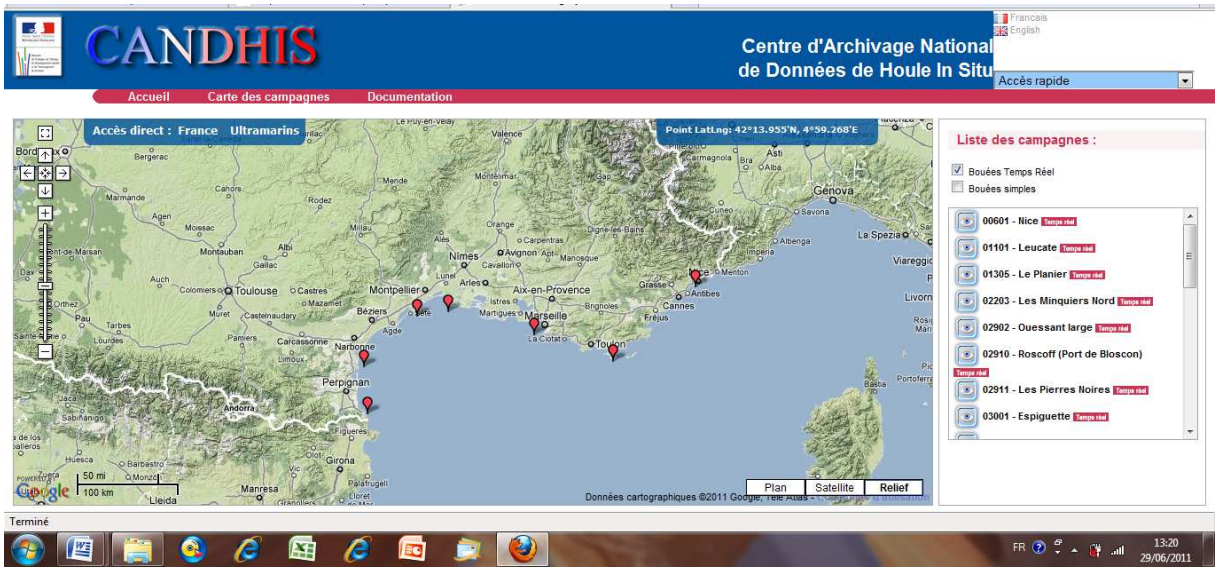
For technical competences on the thematic of erosion and technical tools it seems ok, but it's true that we need common guidelines for the creation of data and for doing the atlases.

24 What would you suggest to the European Regional Development Fund (ERDF) for the next financial program (2013-2020)?

We would suggest

- ***that the regional ERDF envelops can be used to create data and atlases shared among the Mediterranean regions, especially between neighbor regions***
- ***that the methods used to protect the coastal zone, if they respect the orientations of the white book on adaptation to climate change must be financed by ERDF funds.***

Print screen for Candhis website



Example of measures for Nice

Liste des dernières mesures Temps Réel de la campagne 00601 - Nice

Date et heure (T.U.)	H1/3 (mètres)	Hmax (mètres)	Th1/3 (secondes)	Dir au pic (degrés)	Etalement au pic (degrés)	Température mer (degrés C)
29/06/2011 11:00	0.2	0.4	4.1	193	36	24.2
29/06/2011 10:30	0.2	0.4	4.2	186	39	24.2
29/06/2011 10:00	0.2	0.5	4.0	150	59	24.0
29/06/2011 09:30	0.3	0.5	4.1	181	44	23.9
29/06/2011 09:00	0.2	0.6	3.8	192	29	23.8
29/06/2011 08:30	0.2	0.5	3.9	196	37	23.8
29/06/2011 08:00	0.3	0.5	3.7	196	28	23.8
29/06/2011 07:30	0.3	0.6	3.5	195	30	23.8
29/06/2011 07:00	0.3	0.5	3.4	195	31	23.8
29/06/2011 06:30	0.3	0.6	3.4	200	36	23.8
29/06/2011 06:00	0.3	0.6	3.6	192	32	23.8
29/06/2011 05:30	0.3	0.5	3.7	198	32	23.9
29/06/2011 05:00	0.4	0.7	3.6	200	33	24.0
29/06/2011 04:30	0.4	0.7	3.6	199	32	24.0
29/06/2011 04:00	0.4	0.8	3.6	199	37	24.1
29/06/2011 03:30	0.4	0.8	3.7	202	31	24.2
29/06/2011 03:00	0.4	0.8	3.7	205	23	24.2
29/06/2011 02:30	0.4	0.8	4.0	205	27	24.5
29/06/2011 02:00	0.4	0.8	4.0	203	21	24.5
29/06/2011 01:30	0.4	0.7	4.2	199	30	24.6
29/06/2011 01:00	0.5	1.2	4.4	206	23	24.6
29/06/2011 00:30	0.4	0.7	4.5	207	21	24.5
29/06/2011 00:00	0.4	0.7	4.6	209	23	24.5
28/06/2011 23:30	0.4	0.8	4.7	207	21	24.6