



## **Integration of Climatic Variability and Change into Coastal Plans and National ICZM Strategies**

Expert meeting to combine  
DIVA and Climagine methodologies

**Meeting Report**  
(Paris, 19 November 2012)

ClimVar/2012/MEMR.1  
MAP/Priority Actions Programme  
Split, January 2013

## **Integration of Climatic Variability and Change into Coastal Plans and National ICZM Strategies**

### **Report of the expert meeting to combine DIVA and Climagine methodologies**

Paris, November 19, 2012

#### **Background information**

The project “Integration of climatic variability and change into national strategies to implement the ICZM Protocol in the Mediterranean” (ClimVar project) – a complementary project to the overall GEF/UNEP/World Bank Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem (the MedPartnership) initiative - has been designed to support the implementation of the ICZM Protocol in the Mediterranean.

The objective of the project is to create an enabling environment for the integration of climate variability and Change (CV&C) coping strategies into ICZM policies, plans and programmes of Mediterranean countries by:

- strengthening the understanding of the impacts of CV&C on the coastal zones of the Mediterranean region; and
- by establishing the needed information exchange mechanisms, capacity and regional pilot experiences.

This meeting was organised in the framework of the Component 2, activity 2.1.2. Assessment of environmental and socio-economic impacts in two critically vulnerable sites, and evaluation of response options. PAP/RAC and the Blue Plan/RAC are implementing this component jointly and combining their selected methodologies – an economic modelling tool DIVA and a participatory methodology Climagine. The way in which the two approaches can be combined was discussed at the meeting and decided amongst relevant experts and the PAP/RAC and PB/RAC representatives.

The aims of the meeting were the following:

1. to analyse possibilities for combining DIVA and Climagine in order to maximise the benefits of such a joint implementation;
2. to prepare the roadmap of the joint activities; and
3. to contribute to the defining of the most useful outputs and to adapt them for the ICZM plan.

#### **Attendance:**

##### **MedPartnership**

Virginie HART, MedPartnership Coastal and Marine Expert

##### **BP/RAC**

Antoine LAFFITE, ICZM Programme Officer  
Hugues RAVENEL, Director

##### **PAP/RAC**

Daria POVH ŠKUGOR, Programme Officer  
Željka ŠKARIČIĆ, Director

**Invited experts:**

Jochen HINKEL, Potsdam Institute for Climate Impact Research

Anil MARKANDYA, Scientific Director of the BC3 Basque Centre for Climate Change

Ivica TRUMBIĆ, PAP/RAC Consultant

Andonis VELEGRAKIS, UNEP-GRID/DEWA Consultant

**UNESCO-IHP**

Raya Marina STEPHAN, MedPartnership project

Matthew LAGOD, MedPartnership project

**UNEP-DTIE**

Helena REY, Tourism and Environment Programme Officer

Deirdre SHURLAND, Senior Consultant and Co-ordinator of the Global Partnership for Sustainable Tourism

**Major topics discussed and meeting results:**

1. Ms. Željka Škaričić, PAP/RAC Director, opened the meeting and welcomed the participants, expressing her gratitude to the host, UNE-DTIE. She presented the objectives of the meeting and invited the participants to present themselves. The Agenda of the meeting is attached as Annex I.
2. Ms. Virginie Hart, MedPartnership Coastal and Marine Expert, introduced this new project, as well as the MedPartnership project, its activities and its progress.
3. Ms. Daria Povh Škugor, PAP/RAC Programme Officer, presented the ICZM process, strategies and plans as a frame for integrating the DIVA and Climagine results. She introduced the component II of the project in which the Blue Plan and PAP/RAC are involved, as well as the two pilot cases where DIVA and Climagine will be applied. She described the process of the selection of the locations for pilots that resulted in Tunisia and in Croatia being chosen. Finally, she summarised the opportunities for mainstreaming the topics of climate variability and change (CV&C) within this project and raised hopes that Climagine could also help in assessing the costs for the social sector, which is usually rather difficult to achieve. She described some of the recent storm surges that occurred along the Croatian coast, including the related reactions of the people and of decision makers. She concluded by emphasising the value of presenting the results in a geographic form and demonstrated several maps that presented the results of the ICZM process.
4. Mr. Jochen Hinkel from the Potsdam Institute for Climate Impact Research presented the DIVA global integrated model of coastal systems that assesses biophysical and socio-economic impacts of sea-level rise and socio-economic development. He presented the history of the DIVA model since its creation in 2001 up to the current (3.3.4) version. He pointed out the following structure of the model: algorithm and data; 12 modules representing different coastal subsystems; coastline segments and about 80 biophysical and socio-economic parameters. Adaptation measures and strategies considered by DIVA were presented and major uncertainties pointed out. Finally, Mr. Hinkel stressed the role of adaptation as being by far the most significant factor in determining the magnitude of impacts. He proposed some recommendations for communication of results to policy makers and concluded his presentation by listing the future plans for DIVA.
5. During the discussion that followed these presentations, the participants asked for clarification of several issues, such as on possible measuring of the damage caused by the river flooding. It was pointed out that the model for the river flooding was a different product, not a part of this project. However, it would be desirable to investigate what has already been done for the pilot

area, and to use this as an input for our project. The question was raised on whether the model considered rainfall. Mr. Hinkel pointed out that coastal flooding was included in the model but not explicitly rainfall and wind, even if the model for storm surge existed. The importance of the local data was pointed out in order to produce answers to dimensions not covered by DIVA and to design the appropriate adaptation measures. The question was raised on the possibilities to include salinity intrusion into aquifers, and it was proposed to use the experience of the model made in the Gulf of Gabes in Tunisia, where UNESCO-IHP and the national team have been working on the topic of the transboundary aquifers. The need for defining the data resolution for the coastal flooding /inundation was stressed.

6. Mr. Antoine Lafitte, Blue Plan ICZM Programme Officer, presented Imagine, a participatory method that is to be adapted to the climate variability and change issues within the new GEF project. The adapted Imagine will be named Climagine. Mr. Lafitte presented the use of the Imagine within the Coastal Area Management Programmes (CAMPs) since 2000, emphasising its key principles. He informed the participants about the four steps of Imagine and proposed the steps for Climagine. Mr. Lafitte proposed some potential outputs of Climagine that could represent the inputs for DIVA, as well as some potential outputs of DIVA that could be used as inputs for Climagine, for every of the 4 identified steps. So, for the first step, aiming at understanding the socio-economic system, potentially interesting outputs of Climagine could be a description of the socio-economic system and the identification of the main drivers and priority issues for action, while DIVA could feed into Climagine with its early-stage outputs such as the first set of GIS maps. As regards the indicator selection, both methods could feed each other with different indicators. The third step includes the exploration through scenarios. Being a participatory method, Climagine is to develop scenarios by the stakeholders involved, while DIVA mostly uses IPCC scenarios. For the final step in defining the recommendations, the results of DIVA should present an input for Climagine. In that way, the scientific results would be processed by the stakeholders involved.
7. Ms. Škaričić informed the participants about the good experience of having Imagine in the CAMP projects, where the stakeholders always appreciated this methodology for a joint brainstorming. Building ownership through these methods has been recognised as the key issue for a successful implementation of the plan. She informed the participants that sometimes in the beginning of the Imagine process there was quite some resistance. Therefore, it was of the utmost importance to identify a good moderator, and to prepare the indicators, by defining them and their availability prior to the workshops in a country. Finally, she added that, being in the situation of the significant delay with this project, it would be more appropriate to work in a country where the process could be faster, which is in this case Croatia.
8. Mr. Ivica Trumbić, PAP/RAC Consultant, presented the ideas on the most appropriate type of CV&C information to be integrated into the coastal management plans. He began with defining the coastal plan and the ICZM plan, as well as their relation to spatial planning and offered several examples of the coastal plans. He informed the participants about the interest of the Croatian Šibenik-Knin County for this project, due to the recent flooding of the coastal towns caused by the storm surges that happened during the autumn 2012. He introduced the participants to the County Spatial Plan, as well as to its changes and amendments recently in preparation aiming to define the conditions of the use and protection. Finally, he pointed out the characteristic of the hazards creating the coastal inundation and presented the findings of one site-specific adaptation plan.
9. Mr. Andonis Velegrakis from the University of the Aegean, Department of Marine Sciences School of Environment, presented the RIVAMP combined model which was conceived as an

assessment tool that takes into account ecosystems and climate variability and change factors in the analysis of disaster risk and vulnerability. He presented the first use of the RiVAMP method in Jamaica where large erosion rates were present (up to 1 m per year). The methodology included consultations with experts and with the local communities, technical analysis, and the capacity building activities. The methodology is available as an OpenSource software and the step-by-step training manual is available. Finally, Mr. Velegrakis presented some of the results obtained, revealed some models used and clarified some of the tools used in the software.

10. In the discussion following the presentation, Mr. Hinkel expressed his interest to combine the DIVA and RiVAMP model, since the RiVAMP approach to the beach erosion was assessed to be more comprehensive.
11. Mr. Anil Markandya, Scientific Director of the BC3 Basque Centre for Climate Change, presented the experience of the MedPartnership where some considerations had been defined to be integrated into the management plan. Also, a methodological contribution has been prepared for the Integrative Methodological Framework (IMF), and for the coastal plans and strategies. Therefore, he set out the key steps in the development of the national ICZM strategy or a plan from the initiation and establishment stage, through the analysis, defining vision and objective, developing scenarios and finalising the plan or the strategy. He pointed out the importance of the first steps during which it is of the utmost importance to take into account all valid planning and policy documents, in order to avoid overlapping or inconsistency. Also, he emphasised the importance of involving the stakeholders as a key prerequisite for a successful implementation of the plans and strategies.
12. In the discussion that followed Mr. Markandya's presentation, the following conclusions have been agreed:
  - a. As regards Climagine, there are two key prerequisites for success: a good moderator and the knowledge about the indicators. It is important that a moderator speaks the national language, but he/she should also be highly competent to work with indicators. Therefore, the selection of a moderator should be performed as soon as possible and the appropriate training should be secured.
  - b. It was agreed that in the pilot case where the ICZM Plan is to be made, the best approach is to design the roadmap of all three methods in parallel (ICZM Plan, Climagine and DIVA), since the final result of all activities will be an ICZM Plan with a special focus on climate variability and change, which is to be adopted by the legal body.
  - c. As regards the combining DIVA with Climagine, it was agreed that the first step is on Climagine. The first workshop, which aims to understand the socio-economic system when rich picture is to be used, should be free to brain storm, and not be conditioned by any direction/decision DIVA may take. This conceptualisation step is on the Climagine stakeholders to design. The second step of selection of indicators is also to be done by Climagine stakeholders independent from the DIVA influences since the stakeholders will work with much larger group of indicators than the DIVA team. These two steps, using Imagine, are to be performed through two workshops, while Climagine will be merged into one workshop. The DIVA representatives will attend this workshop in order to collect as many as possible inputs for the application. In the next six months, the DIVA team will produce preliminary results. These results will be presented at the 2<sup>nd</sup> Climagine workshop, where the objective will be to define scenarios. On that occasion, a draft analysis for the ICZM Plan will also be presented, so that the scenarios to be

developed may be of the highest possible quality. The final DIVA results will be made available during the drafting of the ICZM Plan.

- d. It is important to screen all relevant existing policies and plans in order to produce the most useful output, to avoid overlapping and to enable overlaying of the climate variability and change assessment for the main areas of policies that are already there. Complications may be expected for some actions that are already in place, but our results should be informative and useful for future planning activities.
- e. The option to have 2 results out of DIVA will be investigated: namely, the core DIVA team could produce the assessment for the national level, while the team led by prof. Anil Markandya could focus on the lower level – for the purpose of the ICZM Plan. However, the decision will be reconsidered once the availability of data is identified. In any case, the two teams would work together and the methodology applied would be consistent.
- f. Regarding the data collection, PAP/RAC will collect the data needed for DIVA in Croatia, while for Tunisia, the Blue Plan will identify where the data are and collect them.

13. The following workplan has been agreed:

<i>Initiation and Establishment</i>	
Initiation	<b>December 2012</b>
Data collection	
Preparatory activities for Climagine	
Draft Inception Report	
<b>Inception Workshop</b>	<b>January 2013</b>
Preparatory activities for Climagine including data requests to local teams	
Draft Scoping Report	
<u>Climagine 1</u> (verifying Scoping Report)	<b>March 2013</b>
(+ meeting to last 2 days for project; one day on the site & 1 day in the office)	
<ul style="list-style-type: none"><li>• Additional data for local level</li><li>• List of issues stakeholders are interested in</li><li>• List of indicators</li><li>• Finalisation of the Scoping Report</li></ul>	

### *Analysis & Futures*

Draft analysis

DIVA and LLA preliminary results

Climagine 2 and First Harmonisation Meeting

**September 2013**

Final Analysis

Final Vision

### *Designing the Future*

Final DIVA and LLA

Draft Plan

Second Harmonisation Meeting – presentation of the draft results

**November 2013**

Final ICZM Plan

**December 2013**

14. For the second pilot application of the DIVA and the local assessment of the costs, the following workplan has been proposed:

Initiation Tunisia  
Data collection

**June 2013**

1st workshop Climagine

**October 2013**

2nd workshop

**March 2014**

Final result; last workshop

**May 2014**

Possibility to prepare a planning framework for this pilot application is to be discussed with the partner GWP-MED.

15. Ms. Povh expressed her gratitude to all the participants for attending the meeting. The meeting was closed at 17:00.

## Annex I

### Agenda of the meeting

9:00 – 09:10	Welcome address and opening of the expert meeting by Ms. Željka Škaričić, PAP/RAC Director
09:10 – 09:15	Welcome address by Ms. Virginie Hart, Project Management Unit representative
09:15 - 09:35	Presenting the ICZM process, plans and strategies as a frame for integrating DIVA and Climagine outputs, Ms. Daria Povh Škugor, PAP/RAC Programme Officer
09:35 – 09:55	Presenting input, process and expected outputs of the DIVA within the CV&C project, Mr. Jochen Hinkel, Potsdam Institute for Climate Impact Research
09:55– 10:15	An overview of the Imagine methodology and its results. Presenting input, process and expected outputs of the Climagine, Mr. Antoine Laffite, ICZM Programme Officer, BP/RAC
10:30 – 11:15	Discussion on combining DIVA and Climagine; topics selection, timing, maximising impact
11:15 – 11:35	Ideas on the most appropriate type of CV&C information to be integrated into coastal management plans, Mr. Ivica Trumbić, PAP/RAC Consultant
11:35 – 12:30	Discussion on shaping the outputs to the best use of the ICZM plans and strategies
14:00 – 14:20	Integration of climate variability and change into coastal plans and strategies – experience of the MedPartnership project , Mr. Anil Markandya, Scientific Director of the BC3 Basque Centre for Climate Change
14:20 – 16:00	Discussion. Finalisation of the workplan
16:00 – 16:45	Inputs and ideas for awareness raising tool, Ms. Daria Povh Škugor, PAP/RAC Programme Officer
16:45 – 17:00	Wrap-up and conclusions
17:00	Closure of the meeting