Collaborative Project

CLIM-RUN

Climate Local Information in the Mediterranean region Responding to User Needs

WP 10
Deliverable 10.10
General Assemblies Report

Project No. 265192– CLIM-RUN

Start date of project: 1st March 2011 Duration: 36 months

Organization name of lead contractor for this deliverable: ENEA

Due Date of Deliverable: February 28 2014 Actual Submission Date: February, 28 2014

Authors: Paolo Ruti, Orietta Casali (ENEA)

SUMMARY

1. INTRODUCTION

During the CLIM-RUN project four Governing Board Assemblies (General Assemblies) were held. During these events most of the Advisory Scientific Committee meetings have been also organized.
The organization and the cost of the Assemblies were supported by ENEA (Coordinator). However the support of other partners have been also important. UNESCO-ICTP hosted the Kick-off meeting in Trieste (March 2011), IC3 hosted the second Governing Board Assembly in Barcelona in March 2012, ENEA hosted the third General Assembly in its headquarters in Rome in July 2013, and CMCC hosted the final Assembly in Venice in February 2014.

The four Governing Board Assemblies have been convened by the Coordinator in due time and the partner participation was high and the legal number have been always achieved (see participant lists).

The work have been carried out with a very collaborative spirit, the Coordinator has been supported by the Working Package leaders in the scientific activities with high technical skill.

During the General Assemblies, in addition to the scientific activity ENEA has duly reported about administrative and financial situation of the project, with an intermediate role between CLIM-RUN Consortium and the scientific and financial EU Officials. The communication plan and the gender plan have been discussed and shared with the partners.

All the ppt presentations and the minutes of the Governing Board Assemblies have been made available to the partners through the CLIM-RUN web site.

2. CLIMRUN Kick Off Meeting Minute, Trieste, 10-11 March, 2011

The kick off meeting of the CLIMRUN-EU project was held in Trieste (Italy) at the ICTP on 10-11 of March 2011 . Agenda and Participants are detailed in the Appendix of this document. The attendees of the meeting were the members of the SMEs and RTDs.

The main aim of the meeting was to review the structure of the project (deliverables, milestones) and to set up the stakeholder's meetings which are the core of the project and they should be accomplished in the next few months.

During the first morning the Consortium Agreement and the administrative issues (PM Ruti), the web tool for project management (E Lombardi) have been presented. Moreover, the WP leaders (WP1 to WP8) have shortly reviewed the work plan and deliverables. During the afternoon two parallel sessions have been organized: 1 protocol (WP1) and case studies (WP4 to WP8); 2 modeling and observational tools (WP2 and WP3). Case-studies parallel sessions have been organized during the second day (morning). The synthesis of the parallel sessions have been discussed during the plenary and specific actions to support the stakeholder workshops have been set up.

Here a synthesis of the main issues related to the case studies organization and to the definition of a common protocol:

1) Role of climate information: climate forecasts & scenarios create opportunities for society to adapt, moreover detailed information on present climate (observational data and reanalysis) can be valuable for many application (i.e., characterization of wind statistics for wind-farm plants). Despite improvement in climate science, climate information are neither routinely useful, nor used in decision-making process and planning

2) Progressive & increasing integration of climate information. A series of climate information need to be developed based on stakeholder's requirements: Elaborated data (tailored index); elaborated products (diagram, static & interactive maps, probabilistic products); documentation & tools (illustrative adaptation measures, decision support tools).

3) The definition of a protocol which will synthesize the case-studies experience and which will provide guidelines for future climate services is a key issue for CLIMRUN. Specific actions should be undertaken to develop this protocol: (i) collecting information on stakeholders individuals & groups that are relevant for

CLIM-RUN project; (ii) categorizing these information; (iii) explaining possible interactions between important groups. WP1 and WP4 should interact to gather the right information and to elaborate the protocol in an iterative way.

4) A workshop database has been organized in order to gather useful data: Location, Date (May to September for most), Contact person, Climate expert, Language(s) of documents/discussions, Number of participants, Briefing/background material needed, Specific focus, Structure & facilitation approaches.

5) The supporting material for stakeholder's workshops has been identified. Powerpoint presentations for workshops: i) CLIMRUN aims and objectives; ii) Introduction to climate services; iii) State-of-art in modelling (prediction/projection); iv) Overview of cross-sectoral impacts of climate variability and change in the Mediterranean. Slides should be translated in the local language. Needs for templates. Definition of a perception/"needs" questionnaire in order to gather relevant information (Identification of parameters directly related to the key sectors, Sectorial indicators, spatial and temporal resolution, temporal horizon, statistical needs (mean, variance, tails) or chronology, precision/uncertainty, availability of local data sets, data policy). A basic CLIMRUN public website

6) Here a table describing the stakeholder's workshops.

Sectors	Specific Sectors	Location	Month	Climate Experts	Stakeholder Ex
Energy	Renewable	Morocco	May	ENEA	PIK
	Wind CSP	Spain	May	IC3	
	Solar	Cyprus	TBD	EEWRC+ENEA	EEWRC
Tourism	Mountain Summer	Savoie	September	CNRM+ENE	TEC
	Sea	Tunisia	November	CNRM	Grevachot+TEC
	Sea	Cyprus	TBD	EEWRC	TEC+EEWR
Fires		Athens	September	NOA	NOA
Integrated		Venice	September	ICTP	CMCC
	Energy-Toursim	Croatia	September	DHMZ	

Concerning the modeling and observational tools, some key points have been discussed:

a) List of available modeling tools and new perspective in climate modeling centers.

b) How to stratify climate information in order to maximise the interaction with stakeholders.

c) Possible interaction with EU projects: 1 ECLISE will produce very high resolution downscaling for their case-studies which can be used in CLIMRUN; 2 observational data will be of paramount importance for downscaling and for tailoring products for stakeholder's needs. However, re-analysis products can be valuable as well. EURO4M can be a relevant source for CLIMRUN; 3other important EU projects can be contacted for sharing information and data (i.e, My-OCEAN,).

d) Climate Expert Team has been defined as members of WP2 and WP3. They will support the stakeholder's meetings as climate experts, they will prepare the material for introducing climate information. The development of an online blog for stakeholders to be limited to CLIMRUN stakeholders and for 1-2 months after the meetings has been proposed.

e) CIRCE simulations should be stored in a common data-base to be available to CLIMRUN. MedCLIVAR or CLIMRUN can be the host. Try to find the best way to save the CIRCE RCM runs (CMCC). ENEA: start to think about the CLIM-RUN hard database for climate runs (Med-CORDEX and so on)

f) Prepare a list of the information required by WP2 as outputs of the stakeholder meetings (list started by Paolo during the meeting). To be sent to WP1 and WP4 + others

g) Prepare the lists of expertise by sectors including the skills in terms of spatial and temporal scales, climate tools, spoken languages, former projects, possibly available climate variables, but also a list of non-covered issues (to be coordinated by S.Somot)

h) Start to prepare the Milestone M3 and the Deliverable M6 that is to say. Start the list of possible new modelling tools in WP2 (CNRM)

i) Prepare a generic document for synthesise/meta-data concerning already existing projects providing available climate data (to be started by IC3)

l) Set-up a Regional Climate System Model design group to prepare recommendation for running hindcast and scenarios runs over the Med using experience acquired in CIRCE and the HyMeX/CORDEX/CLIM-RUn needs.

A review of WP9 has been presented during the last day. Dissemination activities and training workshops have been discussed. Two interesting international activities to be linked to are:

http://www.vsp.ucar.edu/pace/index.html

http://www.climate-kic.org/

It has been decided to create a WPNN emailing list within the climrun management tool: wpNN@climrun.eu

The administrative issues should be sent to Giovanni Addamo (giovanni.addamo@enea.it), while comments and amendments to the Consortium Agreement should be sent to Orietta Casali (orietta.casali@enea.it). All e-mails should be cc to the coordinator.

2.1. CLIMRUN Kick off meeting Agenda

Venue: ICTP Trieste – Adriatico Guest-house

10th Thursday

9-10.30 Introduction administrative issues and Web tools for project management

Description of the Consortium Agreement,

Discussion about Governing Board Assembly and Executive Committee. Web Tool

11.00-13.00 Protocol definition and case studies (WP1, WP4, WP5, WP6, WP7, WP8)

Each WP leader will shortly present the WP structure and objectives (10-15 min) For the case studies Wps, a short review of: existing stakeholder contacts, key data needs and other inputs from the rest of ClimRun specific questions to be discussed/resolved during the meeting

Afternoon

14.30-16.30 Modeling tools and Observational tools (WP2-WP3)

Each WP leader will shortly present the WP structure and objectives (10-15 min)

16.45-18.30 Parallel sessions

Protocol definition and case studies (WP1, WP4, WP5, WP6, WP7, WP8)

which common protocol to be used review of first year deliverables Modeling tools (WP2) review of first year deliverables

Observational tools (WP3)

review of first year deliverables

19 Exec committee

11th Friday

Morning:

9.00-10.30 Parallel Sessions or Common discussion depending on first day results

Modeling and Observational tools: synthesis Protocol definition and case studies Modeling and Observational tools

11.00-13.00 Synthesis of parallel discussion

Short report of the parallel sessions

Open discussion

Web portal for stakeholder involvement.

Afternoon

14.30-15.30 Dissemination and Training,

15.30-16.0 Management and Administrative issues

2.2 Participants

1. Barrios (JRC, Spain)
2. Battaglini (PIK, Germany)
3. Brankovic (DHRZ, Croatia)
4. Calmanti (ENEA, Italy)
5. Casali (ENEA, Italy)
6. Casanueva (UC, Spain)
7. Cauchy (TEC, France)
8. Davis (IC3, Spain)
9. Dell'Aquila (ENEA, Italy)
10. Doblas-Reyes (IC3, Spain)
11. Dubois, Clotide (CNRM, France)
12. Dubois, Ghislain (TEC, France)
13. Frias (UC, Spain)
14. Giannakopoulos (NOA, Greece)
15 Giannini (CMCC, Italy)
16. Goodess (UEA, UK)
17. Gualdi (CMCC, Italy)
18. Hlaoui (Grevachot, Tunisia)
19. Lange (EEWRC, Cyprus)
20. Lombardi (ENEA, Italy)
21. Marcomini (CMCC, Italy)
22. Rousset (Plan Bleu, France)
23. RUTI (ENEA, Italy)
25. Sannino (ENEA, Italy)
26. Schmidt (PIK, Germany)
27. Somot (CNRM, France)
28 Torresan (CMCC; Italy)
29. GIORGI (ICTP, Italy)

Picture 1: the participants to the Kick off meeting – Trieste, March 10-11, 2011

3. Second Governing Board Meeting, March 20-22, 2012 Barcelona, Spain

Introduction

The 2nd Governing Board Assembly of CLIM-RUN Project was held in Barcelona on March 20-22, 2012. The meeting was organized by ENEA with the collaboration with the local partner, IC3. The activity was oganised according to the enclosed agenda. The meeting was attended by at least one representative for each partner, excluding the representative of University of Meryland . See enclosed participants list.

3.1 Administrative issues

The coordinator has introduced the administrative issues in view of the first reporting meeting, which is due within October 31, 2012.
Before the first reporting period, partners were invited to submit to the coordinator an analytical report of the costs incurred in the period and a forecast of the costs for the next period in a predetermined electronic worksheet which has been made available by the Coordinator at: https://docs.google.com , sign as email "info@climrun.eu" password "nostroclimrun", "analitycal report of past and future costs".

Clarification and information on the spread sheet have been provided by the coordinator to the partners during the discussion.

3.2 Description of the first year activity and next steps

The coordinator has presented a general overview of the first year of activity and of the deliverables and milestones already delivered and those that are supposed to be delivered in the next months.
The main achievements and the activities carried out have been presented by each working Groups Leader as reported hereunder.

3.3 Dissemination and training activities

The dissemination activities during the second year of CLIMRUN mainly lie in two points:

3.3.1 Summer workshop on climate services hosted by ICTP in Trieste: 15-19/10/2012

The summer workshop on climate services will be organised by Filippo Giorgi of ICTP and will be held in Trieste, 15-19/10/2012. It will focus on the development of, and training for, a new research expertise that would lie at the interface between climate science and stakeholder application within the Climate Services framework. The workshop will run in three parts, the first covering fundamental climate and

predictability issues and the last covering the specific stake-holder oriented application issues. The central section will focus on a variety of 'cross-over' themes essential for the delivery of climate services. The expected lecturers are Clare Goodess, Silvia Torresan, Ghislain Dubois, Samuel Somot, Robert Pasicko, Christos Giannakopoulos, Maria Dolores Frias, Clotilde Dubois.

3.3.2 The Climate Services session at EGU 2012, held in Vienna: 22-27/04/2012

In the EGU 2012 General Assembly (22-27 April 2012) a new session 'Climate Services - Underpinning Science' has been proposed (CL5.13). The main objective of this session is to gather all the experiences at the European (starting from ECLISE and CLIMRUN EU FP7 projects) and International level to further develop the underpinning science needed to provide tailored climate information to potential users (private companies, international organization etc …). The convener is Alessandro Dell'Aquila (ENEA), Co-conveners R. Van Oss (KNMI) and PM Ruti (ENEA). In terms of capability in attracting abstracts the session has already experienced a considerable success: 34 accepted contributions (above the mean of Climate EGU general session), including an introductory talk by WMO illustrating the implementation plan of Global Framework for Climate Services (GFCS). To better put the emphasis on the new session and on the most recent coordinated efforts about climate services, the EGU Townhall meeting 'Climate Services - Think Forward' has been also organised in collaboration with WMO.

3.3.3 Newsletter

A periodic electronic newsletter on the project life will be prepared on the basis of the proposal of the coordinator. At this aim an Editorial Board has been created: Paolo Ruti (ENEA) Clara Goodess (UA), Maria Dolores Fria (UNICAN) and Peter Schmitt (PIK).
ENEA will give its support for coordinating the creation of the newsletter, its publication and diffusion via web.

3.3.4 CLIMRUN Project Web site

The official web site of the project will be further improved and a public session for deliverables which are meant for public diffusion, will be created. ENEA will continue to give its support for the public and private part of ClimRun web site.

3.4 List of next steps

An analytical description of the different steps is reported in the Summary of working packages. Here is reported only a list of them, with the indication of the relationship among WPs

- Develop a Climate User Interface Prototype (WP1)
- Prepare modelling tools and observational data (WP2, WP3)
- Continue the stakeholder's involvement (WP1, WP4, WP5-WP8)

- Evaluate economic impact (WP4)
- Select user needs (WP4, WP5-WP8)
- Develop a Climate Services training (WP9)

3.5 Summary of the Working Packages

3.5.1 Climate Service Analysis an support

Parnters: ENEA, CMCC, PLAN BELU, TEC, EEWRC, UEA

Summary prepared by: Natalie Rousset, PLAN BLEU

Task 1.1 During the first year of work, WP1 important progress on CLIM-RUN Protocol Development has been made. In this way, we have defined a Participatory Technology Development Approach (PTD) as the general approach for the development of the CLIM-RUN Protocol. Then, on the basis of stakeholder and institutional background, we have defined the three steps to be followed by Case Studies to identify, select an engage stakeholders in the CLIM-RUN process:

(i) Several methods and tools have been proposed to identify and classify stakeholders by organization types. On this basis, a typology based on a continuum of stakeholders from the macro to the micro level has been developed;

(ii) In order to prioritize and identified stakeholders that have to be engaged actively in the participatory bottom-up process of CLIM-RUN, those who will be consulted, and those who will be kept informed of actions or events (i.e, primary, secondary and external stakeholders), several criteria based on the importance and the influence of each stakeholders have been defined;

(iii) Finally, the way to perform the stakeholder analysis have been described. It include a socioeconomic and a climate change analysis (vulnerability to climate change, attitude towards climate change, …), but also an investigation of interrelations between stakeholders via the development of actor linkage matrix, conflict/complementarity matrix, and system diagram approach. Some work has also been engaged by WP1 to define the iterative process and communication strategy about the relevance of climate information. In this way some common materials for the First Workshop have been developed in collaboration with other WPs and methods to engage and maintain the process of interaction with the stakeholders have been proposed. Next steps to be performed in the next year regarding this task concern mainly (i) the development of methods and tools for the process of interaction that have to occur between the two workshops in order to maintain and increase the involvement and participation of stakeholders; (ii) to analyze the ways in which the Protocol has been used by the Case Studies WPs and its usefulness in order to propose improvements and refinements of it and also some recommendations.

Task 1.2 concerns the development of the CLIM-RUN web-portal. As a preliminary work, a deep analysis of the constraints and needs concerning the ways to communicate climate information has been realized. It aimed mainly to analyze methods and issues for communicating uncertain climate information and visualization tools of climate information. A review and a benchmark of existing web-portals have also been initiated in order to guide our future efforts. On this basis, two main scenarios for the CLIM-RUN web-portal have been identified. In order to deliver a web-portal prototype in the next year, the Information Transfer Team (ITT) would be soon operational and would permit us to engage an effective collaborative work between WP1, WPs Case Studies Leader, and WP2 and 3 to transfer the climate data an products developed and the methods and tools needed to deliver these information. Moreover, an important next step would be to define precisely the contents and the design of the web-portal based on the 4 main sections envisaged:

(i) Climate change in the Mediterranean (General background on climate change, sectoral impacts and vulnerability, …),

(ii) Products (case studies results, index, interactive tools, probabilistic products, indicators developed following stakeholders needs, …), Data (raw project data, guidelines, …), Education resources and e-community (results from training activities and summer school, information on how to use climate information, contact information, discussion forum, …).

Task 1.3 is about the usefulness of climate information developed by the CLIM-RUN project team according to the main objective and approach of the project that is to involve stakeholders deeply and throughout the project in order to respond to user needs. In this way, two main tasks have to be performed this year by WP1. Firstly we have to develop a protocol based on criteria to guide the selection process of climate data and products to be developed by climate modelers' teams regarding user needs defined during the first stakeholder workshop. Secondly, we will analyze the usefulness of the data and products produced and the constraints encountered during this process.

3.5.2 WP2: New climate modeling and analysis tools (leader: Samuel Somot, Météo-France/CNRM)

Partners: CNRM, CMCC, IC3, ENEA, ICTP, USMD
Summary prepared by Samuel Somot (METEO FRANCE/CNRM)
In the first year, WP2 activities have focused on the following tasks:

Task 2.1: Analysis of climate information from already existing projects: the list of existing projects interesting for the CLIM-RUN project has been made and we identified a WP2 contact point for each project in order to facilitate the skill transfer when needed. The ENSEMBLES RCM outputs have been used to produce probabilistic view of regional climate change over the CLIM-RUN case study (towards D2.4). Barcelona temperature precipitation 2D pdf of climate change have been shown by M. Déqué during the workshop.

The CMIP5 and COMBINE decadal forecast have been used by IC3 and CMCC to start analysing the skill of those forecasts over the Mediterranean area (towards D2.7). CECILIA project has been discarded

from the initial list as the RCM domains does not properly cover any CLIM-RUN case study. CIRCE RCM outputs is an open issue as no database is available from this project and that we are not sure to be able to access the data from CIRCE-RL2 partners not in CLIM-RUN. CORDEX (3 domains may interest CLIM-RUN: Med-CORDEX, Afro-CORDEX, Euro-CORDEX) simulations are not ready yet but we are following their availability. The CORDEX database has been open during the past year at DMI (http://cordex.dmi.dk/) as well as the dedicated Med-CORDEX database at ENEA (http://www.medcordex.eu) .

Task 2.2: Development of new tools: the list of the possible new modelling tools have been made by the involved partners (ICTP, ENEA, CNRM). The development phase started already for the following topics (towards D2.3): sub-grid physics, very high resolution RCM, coupled Regional Climate System Models, sea level representation, aerosol explicit simulation, cloud cover improvement and extreme simulation improvement. Some results were presented by ENEA and CNRM during the workshop. Lake modelling has been investigated as well as modelling of the snow cover.

Task 2.3: Delivery of new climate information: We identified the list of skills of the WP2 climate expert (temporal scale, climate tools, spoken language, past project participation). We also participate to the set-up of the CET-SET list for each case study. At least one Climate Expert from WP2 or WP2 has been identified for each CLM-RUN case study. It will help for various steps of the project: (1) to translate the stakeholder demands with the help of the Stakeholder Expert (2) to orient a given demand towards the right WP23 partner following the list of skills and (3) to follow the product preparation, its delivery and the stakeholder feedbacks. Many members of WP2 have worked on the step (1) during the first year trying to translate the stakeholder needs in informative sheets usable by WP23. A list of the stakeholder meeting outputs needed by WP2 have been defined by C. Dubois (CNRM) and transmitted to all the CLIM-RUN partners in charge of the organization of those meetings. It worked well and allows most of the time to get the right inputs (spatial scale, temporal scale, temporal horizon, climate variables, sectorial indicators, …) from the translation step and it will help for the WP2 work organization. Some preliminary CLIMRUN climate information have been produced during the first year: presentation (in local languages) of climate, climate change and climate tools to help the stakeholder meeting organizer; preliminary climate information for the Tourism/Savoie and Energy/Barcelona case study have been produced. A part of year 1 activity of the WP2 leader was also dedicated to enhance the WP1-WP2-WP3-WP4 communication in order to reach an agreement on the practical implementation of the bottom-up approach in CLIM-RUN.

The following documents and resources have been produced:

- MS8 (Month 3): Climate Expert Team (final version)
- List of WP2 expert skills (available on the WP2 wiki page)
- List of the stakeholder meeting outputs needed by WP2 (available on the WP2 wiki page)
- D2.1 (Month 6): List of new modelling tools (final version)
- MS4 (Month 6): List of past projects in order to prepare D2.4 (first draft)
- MS5 (Month 12): List of on-going project in order to prepare D2.5 (first draft)

During the project meeting the status and upcoming activities in WP2 were discussed in several occasions:

1. a presentation during the plenary session (synthesis of the first year WP2 activity by S. Somot), 20th March
2. the WP5678 parallel session where WP2 offers were discussed (see the Agenda).
3. the WP2 parallel session where WP2 results from year 1 were presented and discussed
4. the final session where a WP2 synthetic view on the possible future climate products and information was presented and discussed

The main conclusions of the discussion are:

1. It has been decided to merge MS4 and MS5. IC3 and CMCC will work on the final version
2. The list of criteria in order to choose if a climate information demand is a CLIM-RUN priority or not has been defined
3. The workshop allows to identify a starting list of climate variables useful for CLIMRUN in addition to classical ones: sea level, wave, MSLP, extreme precipitation, humidity, downward direct and diffuse shortwave radiation, wind over the sea
4. DHMZ is able to provide very high resolution wind for Croatia: 2km, available for CLIMRUN WP2 activities: 1991-2000
5. Some of the stakeholder need sheets are already in a good shape allowing WP2 to work on the production and delivery of new products. Other WP has to reformulate it.
6. It has been decided that a CLIM-RUN climate product will not only be a figure or numbers but a package (1 or 2-page document) including : methodology, results, uncertainty, expertise and limits of the products (see TEC concept expressed during the workshop)
7. A member of WP2 will give a lecture to the October Summer School in Trieste
8. A geographical definition of each case study has to be defined by WP5678, lon, lat, alt, as a point or a box

The main tasks to be performed by WP2 in the next months are:

1. S. Somot: upload the finalised version MS8, MS4, MS5 and D2.1 at the right place on the web
2. MS4-MS5: A. Bellucci, A. Mariotti, V. Guemas, P. Doblas-Reyes will work on finalizing them (adding SESAME and EURO4M) and then on the preparation of D2.5
3. A. Bellucci will start organizing/drafting the D2.4
4. S. Somot: we have to fine a representative of WP2 in the ITT: Information Transfert Team
5. M. Déqué: produce the pdf of climate change over each CLIM-RUN case study for the period 2021-2050 wrt 1961-1990 (and possibly 1991-2020, 2071-2100) and for the CLIMRUN variables
6. S. Somot: to contact the ECLISE modeling WP.
7. S. Somot + C. Dubois + all : identify the list of the first WP2 climate information to be delivered in year 2. Work has to be splitted between partners in agreement with the CETSET for each case study.

8 S. Somot + F. Giorgi + A. Dell'Aquila: list of priority for new tools to be developed
9. F. Giorgi will define a 12km MedCORDEX domain for RegCM4 following CNRM definition including a 2km sub-grid physics for the following runs: 1989-2008 ERAInterim runs, HadGEM 1950-2100 scenario (or 1980-2070) for RCP8.5
10. NRM (S. Somot) and ENEA(A. Dell'Aquila) will start uploading MedCORDEX run on the MedCORDEX database
11. F. Giorgi and Graziano will verify if they receive the WP2 emails
12. F. Giorgi will provide inputs for off-line lake simulations for Savoie
13. F. Giorgi/P. Nabat will provide short-wave radiation from a 10-year simulation including interactive aerosols
14. all: WP2 has to produce a first draft of a first climate product for each case study in the following 2-3 months. Here are the probable first products and the team in charge (still to be discussed):
    a. SST scenario for Tourism (Tunisia, Croatia, Chyprus): ENEA, CNRM
    b. Wind speed validation (spatial, temporal) for Greece, Croatia, Energy: (help by DHMZ for Croatia)
    c. MSLP scenario and extreme precipitation for North Adriatic: ENEA, CMCC
    d. SCAMPEI results for Savoie case study: CNRM
    e. Shortwave scenario for energy (Morocco, Barcelona): ICTP, CNRM
    f. First tests on decadal forecast for energy (Morocco, Barcelona) case study (wind,SW): IC3
    g. First tests on decadal forecast for Tourism case study (SST, Tunisia, Croatia): CMCC
    h. Wind scenario over land and sea (ENEA)
    i. Agree on a clear definition of the Tourism and Forest fire indices.duced and the constraints encountered during this process.

3.5.3 WP3: Observational support and downscaling methods

Partners: EEWRC, UC, UEA, ENEA, ICTP, IC3, NOA
Summary prepared by: Manfred Lange (EEWRC)

During the project meeting the status and upcoming activities in WP3 were discussed on a number of occasions. The current status is summarized in the attached Power Point presentation.

A separate discussion on WP3 on March 21 can be summarized as follows:

1. While first drafts of D3.1 and D3.2 have been submitted, there is still some work to be done on these deliverables. In particular:

    a. we need to identify additional data sources that can be utilized to derive data for the verification of (statistical) downscaling-models. To that end, we need to verify, if the data bases identified so far, are also adequate to provide such data;
    b. we also need to verify/check, if the identified data sets provide data of sufficient temporal coverage for the verification of statistical downscaling models;

c. furthermore, it is necessary to specify appropriate data sets for the individual case studies considered in CLIM-RUN (including: T, Precipitation, Wind, radiation, etc.). Clare proposed to use the CIRCE meta-data-template (attached) to address this issue.

2. The next major issue addressed relates to data policies in CLIM-RUN, i.e., the possible exchange of data between project partners, but also with institutions and colleagues external to the project. To that end, it was decided that Richard Cornes (UEA) will work on a first draft that is to be based on the WMO model for data exchange.
3. It was also concluded that we need to advance the issue of a data repository for CLIM-RUN, which will contain data or meta-data of parameters identified as needed for individual case studies. To that end, we need to clarify what technical/software infrastructure will have to be provided. Emanuele kindly agreed to assist us in implementing such a repository at the Cyprus Institute.
4. Another issue discussed concerns the specification of specific indices, e.g., "tropical nights", "dry spells", etc. and their respective threshold values. This will be pursued through a questionnaire to be sent to all project partners with the aim to agree on common indices and their definitions.
5. On a related note, we also discussed the provision of "products" to certain stakeholder groups/sectors. Of particular relevance are the "tourism comfort index" (RCIU) and the "Wild-Fire Index" (WFI), which Christos Giannakopoulos has already looked into in some detail. It has been decided that Christos, Ghislain and Manfred start working on a common approach to derive TCIs for the CLIM-RUN-tourism- case studies.

3.5.4 WP4: Climate Service Pilot Case Studies

Partners: UEA, TEC, CMCC, IC3, NOA, JRC
Summary prepared by: Clare Goodess, UEA

Work in the first year has focused on these two tasks:

- Task 4.1: CET and SET task teams
- Task 4.2: Case study implementation.

The following documents and resources have been produced:

- MS17 (+ MS 8 & 9): Climate & stakeholder expert teams (December 2011)
- MS18: Initial stage setting workshops organized (April 2012)
- D4.1: Workshops 1 planning and resources document (V1 July/V1.3 December 2011)
- D4.2: First workshops synthesis report (draft V1 13 March 2012)
- Perception Questionnaire (July 2011)
- WP4 wiki

WP4 defined the 'key CLIM-RUN stages'. 'Stage setting' i.e., the first stakeholder workshops, is now complete, as is 'Mapping the issues' (e.g., the perception and data needs questionnaires). The project is now moving into the 'Iterative consultation and collaboration' key stage.

D4.2 provides a synthesis of the first workshops and addresses the following issues:

- Use and utility of D4.1 material
- Use of the perception questionnaire
  - lots of different versions
  - flexibility vs consistency
  - too technical/difficult to complete for some stakeholders
  - has not provided all details CET would have liked
- Engaging stakeholders
  - systematic selection and mapping
  - differences and difficulties in engagement
- Continuing the stakeholder engagement
- Translating user needs

The D4.2 summary and concluding remarks provide opportunity to reflect on what has been achieved to date in CLIM-RUN and to identify a number of issues, actions and problems:

- Generally workshops effective and appropriate
- Constraints of project timetable
- Producing the protocol etc 'as we go'
- Not all project infrastructure/tools in place
- How to make best use of material produced for workshops?
- Production of 'briefing notes'
- How to demonstrate value of climate services?
- Clear differences in stakeholder engagement/motivation/expertise
- These need to be reflected in the 'translation' process
- Need to be careful about constraining stakeholders
- Differences in 'useful', 'usable' and actually being used

From the WP4 perspective, the following recommendations were made to the Barcelona meeting:

- Work should continue on translating and implementing user needs
- A range of methods and approaches (including provision of examples, newsletters, briefing notes and other web-based material) should be used to facilitate stakeholder engagement
- Particular attention should be given to improving participation in areas where stakeholder engagement is currently weak.

WP4 should continue to be involved in these three activities – particularly focusing on facilitating continuing and improved stakeholder engagement. One further conclusion that emerged from the various discussions in Barcelona is the need for improved communication and contact between WPs. This is something that WP4 can also help to facilitate over the coming months. Finally, it would be

helpful to begin to think about and define the aims and objectives of the second round of stakeholder workshops, currently planned for February 2013.

3.5.5 WP5: Tourism case studies

Partners: TEC, GREVACHOT, EEWRC, CMCC
Summary prepared by: Ghislain Dubois, TEC

This WP focuses on the analysis of the climate information required for tourism management and adaptation in a context of climate variability and change in the northern, southern and eastern Mediterranean (Savoie – France,Tunisia, Cyprus and Croatia – who recently joined the WP5). This is explored through case studies for each of these geographical and human contexts.
Month 1-12 activities
The tourism case study protocol defined as part of CLIM-RUN's work packages aims at encouraging maximal actor's involvement in the project right from the launch phase.
To identify and engage stakeholders early in the process, and to gather user requirements for climate data it was decided for Tunisia and France to consult Tourism SH before holding the WS. The WP relied on the expertise of a tourism specialist in each country to:

- Identify tourism's stakeholders
- Develop a traditional institutional analysis(key figures / institutional data / tourism and climate governance)
- Adapt the survey protocol to the case study (comprehensive approach etc.)
- Conduct face to face interviews
- Restitute the results during the WS

For Croatia and Cyprus, the consultation follows the WS and is currently in progress.
The aim of workshops was to invite stakeholders to express their needs and expectations as far as climate data and information were concerned. It was also to add to the initial points and variables identified as relevant for the rest of the project. (It was also to extend the initial points and variables, which are identified as relevant for the rest of the project.) In addition, it was hoped that the workshops would enable the research teams to determine to what extent each person would be involved and the best methods that would be used.
In total, 5 workshops have been completed by the group. They were organized and run by CLIM-RUN WP5 members and took place in each of the case study countries. Details of the WS organization (specific objectives, number of participants, approach, etc.) are available on the following link in Milestone 20 of WP5.

Forecasted activities Month 12-24
The second year of the project aims at answering users' needs thanks to climate laboratory work (WP2 and WP3), and therefore WP5 will interact not only with local stakeholders, but also with climatologists taking part to CLIM RUN

- Regular WP5 Skype meetings (every 2 months)
- Interaction with WP2 and WP3 to translate users' needs and implement products (data requests, indicators, commentary…)

- Finalization of initial consultation process (Cyprus, Croatia)
- Continuous interaction with stakeholder during the product development phase
- Completion of the 2nd series of WS for each case study : Feb 2013

3.5.6 WP6: Wild fires case studies

Partners: NOA, UC
Summary prepared by: Christos Giannakopoulos, NOA

WP6 analyzes the climate information required in areas where forest fires represent a major hazard, evaluates the future fire risk in the Mediterranean and in specific target regions (mainly in Greece) for the coming 10 to 50 years and illustrates the important role of climate information in the identification of the vulnerable regions and in the management of existing and new forests.

Work in the first year has focused on the following tasks:

Task 6.1: Organisation of periodic meetings and surveys
Task 6.2: Collection of local information on wild fires natural hazards

More specifically, work in the first year included:

- the workshop on the Effects of Climate Change on forest fires and forest Ecosystems organized by the National Observatory of Athens on September, 28 2011 that attempted to bring together academics and representatives from the public and private sector are involved in the fields of forest fires and ecosystems in order to better understand stakeholders' needs and data requirements.
- a fire database obtained from the Forest Special Secretariat of the Ministry of Environment, Energy & Climate Change, containing forest fire data for a 15-year period, for the entire Greek territory (including the number of fire events per day and the total area burnt with detailed information on different land use types, the response of the fire service to each fire event and its duration).
- the evaluation of the fire weather index with the use of the fire database to confirm the index capability of predicting fire occurrence over Greece.
- the simulation with the atmospheric model COSMO-ART of the extreme wild fire event in Greece during 2007. The study provided the effect of these fire events on atmospheric chemistry estimated by analyzing the predictions not only for the mainly affected primary and secondary species (carbon, ozone).

The following documents and resources have been produced:

- Workshop questionnaire dully completed by the stakeholders preent in the workshop

- 2 posters (also found in the public CLIMRUN website) resulting from the participation to the EARSEL 2011 Conference and the AGU General Assembly 2011 with the results of the evaluation of present and future fire risk in Greece.
- Completion of Milestones M26 (workshop organisation) and M28 (Survey)
- Completion of Deliverable 6.1 (1st workshop report: context and objectives, confrontation of data supply and demand, simulation results, feedback and discussion)

Actions defined during the meeting for the next 12 months:

- Use of the portal of University of Cantabria for downscaling meteorological parameters from ERA40-Interim reanalysis database for high spatial resolution FWI calculations. Comparison between downscaled reanalysis and model FWI results.
- Sensitivity studies of the FWI index to
  - the meteorological parameters from observations and model simulations,
  - the spatial resolution of gridded datasets
- Continuation of the COSMO-ART application
  - Downscaling fire emissions: retrieve and process high resolution burned area data
  - Future projection of the impact of fires on air quality: comparative scenario with inputs from future meteorological model outputs

- Online short-term fire risk forecast in collaboration with the weather forecasting group of NOA. This real time information will be accessible to the stakeholders.
- Participation in conferences and meetings to disseminate the research results and to inform possible stakeholders on climate services products (e.g. EGU2012, COMECAP2012, EMS2012).

3.5.7 WP7: Energy Case Studies

Partners: IC3, EEWRC, PIK, CNMCCC, PLAN BLEU
Summary prepared by: Melanie Davis, Paco Doblas Reyes (IC3)

WP7 presented an update of the renewable energy work package to the project group, which focused on:

- Aims and Objectives of WP7
- Why have we chosen these aims and objectives, i.e. what are they based on. - reports, articles, stakeholder reactions etc.
- Implementing Climate services for renewable energy - workshop feedback, questionnaire feedback, CET-SET communications
- Overall impressions to date - from the CET and SET

- Now - where do we stand, what do we have
- Next - what would we like, where are we going

Link to WP7 presentation:

- http://www.climrun.eu/egroupware/webdav.php/home/melanie.davis/20120308_Climate_Services_and_Renewable_Energy_CLIMRUN_meeting_2012.ppt

WP7 SET discussed in detail with the CET the requested climate variables based on the following spreadsheet:

- https://docs.google.com/spreadsheet/ccc?key=0Ak-vXfiZiAgwdERYdkFZdFdIdUxKc29aWVBKNHNzclE#gid=0

Priorities for the coming months:

Following feedback from the CET, the following priorities were concluded.

Variable (highest priority first)	Spatial Scale	Temporal Scale/Interval
Wind speed (m/s)	Med-wide (offshore to 70km, and onshore)then national (Spain, Croatia, Morocco, Cyprus)	1 year (IC3) 30 years (rest of WP2/3)
Precipitation	National (Croatia)	1 year (IC3) 50 years (rest of WP2/3)
Wind speed extremes, frequency and duration (above 35m/s and below 3m/s)	Med-wide (offshore to 70km, and onshore) then national (Spain, Croatia, Morocco, Cyprus)	1 year (IC3) 30 years (rest of WP2/3)

N.b. Optimal temporal resolution to be decided by the CET, SET can use anything up to monthly.

Agreed next steps:

From the SET: within next 6 months (end Sept 2012)

- to create an updated stakeholder presentation (using results to date and agreed key messages)
- search for presentation opportunities at RE events, 1:1 meetings with RE investors (planning and maintenance) and grid operator stakeholders
- format data from climate result so that it is compatible with energy models (D.7.3), and seek partnership with wind consultant stakeholders
- provide required information to Daniele/Andrea so that economic studies can be started

From the CET: within next 3 months (end-June 2012)

- wind forecasts until 2040 for Med-wide onshore and offshore (or national if easier)

3.5.8 WP8: Integrated case studies

Partners: CMCC, DHMZ, PLAN BLEU)
Summary prepared by: CMCC

Activities in the first year have focused on these three tasks:

- Task 8.1: Organization of periodic meetings and survey;
- Task 8.2: Collection of local information on the North-Adriatic coastal case study;
- Task 8.3: Evaluation of climate information and estimates of future change.

The following documents and resources have been produced:

- D8.1: Workshop report: context and objectives, confrontation of data supply and demand, simulation results, feedback and discussion (month 6).
- D8.3: Protocol definition (month 12, first version).
- MS38: Workshop organization (month 6).
- MS40: Survey (month 6).

During the project meeting the status and upcoming activities in WP8 were discussed in several occasions and particularly in a presentation during the plenary session (synthesis of user requirement workshops) held in the morning of 20th March, and in a parallel session held in the morning of 21st March (see the Agenda).
The presentation in the plenary session was focused on the main results emerged from the workshop held in Venice the 13th September 2011. Specifically, the presentation showed the definition of three thematic groups (i.e. hydroclimatic regime, coastal-marine environment and agriculture, D8.1) and a preliminary list of key climate variables and criteria for climate experts of WP2 and WP3 (D8.3).
The parallel session of WP8 involved experts coming from WP2, WP3, WP4 and WP8 and was aimed at providing a list of priority variables for each thematic group taking into account several criteria including observed data availability, credibility and reliability, scientific challenges (beyond the state of the art) and workability.
The main results of the discussion include a list of key climatic variables to be provided by climate experts within WP8 for each thematic group:

1. Hydroclimatic regime:
   - Extreme precipitation (for flooding, local scale);
   - Standard indices computation (WP3);
   - Seasonal forecast? (CMCC);
   - Bias correction (ICTP, CNRM);
   - Impact of higher spatial resolution (10 km) for extreme representation (CNRM, ICTP);
   - CAPE and Lifted energy from models in future projections?;

2. Agriculture:
   - Extreme heat waves and droughts/evapotranspiration (Po valley scale);
   - Standard indices computation (bias correction ?, WP3);
   - Sub-grid physics RCMs versus classical RCMs (ICTP);
3. Coastal-marine environment:
   - Sea level (outside the Venice lagoon);
   - Mean sea level pressure (ENEA);
   - Storm surges (outside the lagoon) [need for tide gauges] (CNRM);
   - Steric sea level (ENEA, CNRM).

The list of climatic variables was presented by Samuel Somot and discussed with all the involved partners during the concluding plenary session held the 22nd March.
The general remarks emerged from the discussion with WP2, WP3 and WP4 climate experts are the following:

- Some variables (the ones with the question mark) will be evaluated on the basis of the available data;
- Check the availability of local observations from stakeholders in order to evaluate the possibility to apply downscaling techniques and evaluate models results;
- Define key stakeholders for each theme and interact with them in order to define the temporal resolution, the time scale and the thresholds of key selected variables;
- Provide answers to all the stakeholder questions emerged during the first workshop also suggesting literature and web-sites;
- Define a detailed work-plan with WP8 climate and stakeholders experts up to the second workshop.

Agenda of the 2nd Governing Board – Barcelona, March 20-22, 2012

2ND GOVERNING BOARD ASSEMBLY
CLIM-RUN PROJECT
Barcelona, March 20-22 , 2012
Venue: Library Poblenou-Manuel Arranz
Calle Joncar 35, 08005 Barcelona

March, 20, 2012

Plenary

9.30 – 10.00
Welcome by Paolo Ruti, ENEA and IC3 representative
Administrative issues in view of the first reporting activities, by Paolo Ruti, ENEA with the support of Orietta Casali, ENEA

10.00 – 10.30 State of deliverables and milestones, Paolo Ruti, ENEA with the support of Alessandro Dell'Aquila, ENEA

10.30 *Coffee break*

11.00 – 12.20 Synthesis of user requirement workshops
Clara Goodess (UEA, WP4), Ghislain Dubois, (TEC, WP5), Paco Doblas-Reyes (IC3, WP6), Silvia Torresan CMCC) , Christos Giannakopulos (NOA)

12.20 – 12.50 WP2 and WP3 review and preliminary consideration of workshop outcomes: Samuel Somot (CNRM), Manfred Lange (EEWRC, WP3)

12.50-13.15
Economic Analysis on climate change, Daniele Paci, Scientific Officer of European Commission Joint Research Center

13.15 *Lunch*
Working Groups

14.30 - 16:00
WP1, WP2 , WP3, WP4, WP9 , How to organise WP2 and WP3 work to respond user needs ; WP1 role as User Interface within WMO framework and web portal development – Organized by WP leaders - Rapporteurs: Nathalie Rousset (Plan Bleu, WP1), Clotilde Dubois (CNRM, W2)

16.00 *Coffee break*

16.30 18.00
WP5, WP6, WP7, WP8 Workshop outcome's discussion - Organized by WP leaders – Rapporteurs: Melanie Davis (IC3, WP7), Ghislain Dubois (TEC, WP5)

Plenary

18.00 Summaries of WGs activities – Short summary by rapporteurs
18.30 End of works
March 21, 2012

Plenary
9.30 – 11.00
Discussion on first day outcomes – contribution from Rapporteurs and WP leaders

11.00 *Coffee break*

11.30-12.00
WP1 perspective and activities (web site portal, connection to WMO GFCS), by: Nathalie Rousset (Plan Bleu - WP1)

12.00 – 12.30
Summer school, by: Filippo Giorgi, ICTP

12.30 – 13.00

Dissemination activities (public web site, newsletter) by ENEA

13.00 *Lunch*

Working Group in Parallel Sessions

Three parallel sessions with two slots 14.30-16.30 and 16.30-18.30 will be held

14.30-16.30: Parallel Session 1. WP2 specific meeting on the model development, MedCORDEX issues and CLIMRUN database, regional analyses of climate change, regional and decadal climate change, rapporteur Samuel Somot (CNRM)
14.30-16.30 Parallel Session 2. WP7: Rapporteur Melanie Davis (IC3, WP7)
14.30-16.30 Parallel Session 3. WP5: Rapporteur Ghislain Dubois (TEC, WP5)

16.30-18.00 Parallel Session 1: WP8: Rapporteur Silvia Torresan (CMCC, WP8)
16.30-18.00 Parallel Session 2. WP
16.30-18.00 Parallel Session 3. WP3: Manfred Lange (EEWRC, WP3), WP6: Christos Giannakopulos (NOA, WP6)

18.30 End of works
20.30 OFFICIAL DINNER: KULETOS RESTAURANT - C/Doctor Trueta, 220 08005 Barcelona

March 22, 2012

Plenary

9.30 – 11.00

Summary of WGs by the rapporteurs and discussion

11.00 *Coffe break*

11.30-12.30

Synthesis of the works and future steps, Paolo Ruti, ENEA

14.00 End of work

Participants list

CLIM-RUN PROJECT – 2ND ANNUAL MEETING
Barcelona, March 20-22, 2012

NAME	AFFILIATION	e-mail
Alessandro dell'Aquila	ENEA	alessandro.dellaquila@enea.it
Sandro Calmanti	ENEA	sandro.calmanti@enea.it
Clotilde Dubois	CNRM	lotilde.dubois@cnrm.meteo.fr
Samuel Somot	CNRM	samuel.somot@meteo.fr
Zouhaier Hlawi	GREVACHOT	zouhaierhlawi@yahoo.fr
Latifa Henia	GREVACHOT	latifahenia@yahoo.it
Fabian Liemart	IC3	fliemart@ic3.cat
Ana Casanueva	UC	ana.casanueva@unican.es
Dolores Frìas	UN	friasmd@unican.es
Michel Deque	CNRM	michel.deque@meteo.fr
Cedo Brankovic	DHMZ	cedo.brankovic@cirus.dhz.hr
Alain Braun	CNRM	alain.broaun@meteo.fr
Richard Cornes	UEA	r.cornes@uea.ac.uk
Orietta Casali	ENEA	orietta.casali@enea.it
Christos Giannakopoulos	NOA	cgiannak@meteo.noa.gr
Maria Hatzaki	NOA	marhat@phy.noa.gr
Ghislain Dubois	TEC	ghislain.dubois@yahoo.fr
Nathalie Rousset	Plan Bleu	nroussset@planbleu.org
Daniele Paci	JRC	daniele.paci@ec.europa.eu
Melanie Davis	IC3	mdavis@ic3.cat
Paco Dobles-Reyes	IC3	f.doblas-reyes@ic3.cat
Peter Schmidt	PIK	pschmidt@pik-postdam.de
Andrea Bigano	CMCC	andrea.bigano@cmcc.it
Robert Pasicko	DHMZ	robert.pasicko@undp.org
Alessio Bellucci	CMCC	Alessio.bellucci@cmcc.it
Kristian Horvath	DHMZ	cristian.horvat@ cirus.dhz.hr
Valentina Gallina	CMCC	valentina.gallina@cmcc.it
Silvia Torresan	CMCC	torresan@unive.it
Graziano Giuliani	ICTP	ggiulian@ictp.it
Filippo Giorgi	ICTP	giorgi@ictp.it
Manfred Lange	EEWRC	m.a.lange@cyi.ac.cy

Clare Goodess	UEA	c.goodess@uea.ac.uk
Paolo Ruti	ENEA	paolo.ruti@enea.it

4. Third Governing Board meeting, Rome, July 8-10, 2013

4.1 Introduction

The meeting has been held according to the proposed agenda, here enclosed. The linkable presentations made during the meeting, together with the comments reported in this document, will constitute the main content of this report.

4.2 Administrative issues in view of the last reporting period

See presentation n. 2 by: G. Addamo, O. Casali, S. Rinaldi, ENEA. http://www.climrun.eu/products/presentations-and-posters/clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

Comments:

The first reporting period has been evaluated and the Interim payment done.

As reported in the letter of May 24, 2013 signed by Susanna Heubush of the European Commission – Directorate General for Research and Innovation – remarks have been done to some beneficiaries. The Coordinator, also in consideration of comments received by some concerned partners, has communicated his acceptance of the remarks concerning the wrong categories imputation (Management instead of RTD). The disallowed amounts will be claimed in the correct category in an adjustment form C, as costs incurred in the first reporting period, on the occasion of the second reporting period phase.

TEC, whose form C was not approved because have exhibited estimated costs instead of not real costs, will have to submit and adjustment form C, as costs incurred in the first reporting period, on the occasion of the second reporting period phase, indicating the real costs afforded as indicated in the EC General Rules.

In consideration of the fact that TEC has carried out positively his work for the concerned period, the Coordinator decided to transmit a payment of Euro 50.000, in spite of this formal approval of form C, as interim payment.

The second and last reporting period will concern the span of time from month 19 to the last month of the project (September 1st, 2012 - February 28, 2014).

4.3 State of deliverables and milestones and criticalities

Considering the need to refine the tailored products presented in the second round of the stakeholder workshops the WP2 (New Modelling and Analysis Tool, Leader: CNRM, France), which was supposed to end at 27th Month, and WP3 (Observational Support and Downscaling method, leader EEWRC, Cyprus)

which was supposed to end at 30th month, required an extension up to the end of the project (month 36).

The Coordinator has asked to the EU Officers an extension of the duration in the project of WP2 and WP3 till the end of the project, in order to refine the tailored products presented in the second round of the stakeholder workshops. The extension has been granted, provided that this extension does not affect other WPs and that all the deliverables and tasks will be carried out at the end of the project.

The new delivering time of the concerned deliverables is reported in the following table:

WP	Deliverable	Due Date	New Date
1	D1.1: report on CLIM-RUN protocol	Feb-13	Sep2013
1	D1.2: web portal and data transfer guide	Feb-13	Sep2013
1	D1.3: Future Impact ad the case study level	Aug 2013	Aug2013
1	D1.4: Reccommendations	Nov-13	nov-13
2	D2.4: assess of climate variab. And climate change	Feb-13	Sep2013
2	D2.5: Decadal predictions capability	May 2013	May2013
2	D2.6: New Climate information	May 2013	Sep2013
3	D3.4: Transfer Functions	Feb-13	Sep2013 ?
3	D3.6: Data Repository	May 2013	Sep2013
3	D3.7 Extremes	Aug 2013	Sep2013 October
4	D4.3: Case study summary workshop	Aug 2013	Sep2013 October
4	D4.4: Synthesis of common messages report	Aug 2013	Sep2013 October
4	D4.5: Economic Assessment report	Nov-13	nov-13
5	D5.2: Workshop report	Apr-13	Aug2013
5	D5.4: cross cutting conclusions	Aug 2013	Aug2013
6	D6.2: workshop report	Apr-13	Aug2013
6	D6.4: vulnerability report	Aug 2013	Aug2013 ?
7	D7.2: workshop report	Apr-13	Aug2013

7	D7.4: Cross cutting conclusions	Aug 2013	Aug2013 October
8	D8.2: workshop report	Apr-13	Aug2013
8	D8.4: Cross cutting conclusions	Aug 2013	Oct2013 Draft version before for Clare
9	D9.2: Web dissemination	Aug 2013	Aug2013 (draft version already uploaded since it will be completed after the last training workshop)
9	D9.3: Training workshop	Aug 2013	Dec-13
9	D9.4: congress synth report	Sep 2013	Sep2013
9	D9.5: Final workshop	Feb-14	Feb-14

4.4 WG1 Climate Services Protocol,

The preliminary setting of the CLIMRUN protocol was presented by Nathalie Rousset (Plan Bleu), see presentation n. 10 http://www.climrun.eu/products/presentations-and-posters/clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

The following draft general structure it has been agreed:

- ✓ Overall process – the methodological key stages
  - The business model (three tiers) for climate services
    - **Climate tier**
    - **Intermediary (e.g., SME) tier**
    - **Stakeholder tier**
  - Life cycle of Climate Services
  - List of existing skills (data, model tools) and networks

- Need for coordination at national and European level.

✓ Identification and selection of stakeholders

✓ Communication with stakeholders

- Involvement of social science & impact experts
- Expectations and risks

✓ Identification of user needs

- Priority ranking

✓ Translation of needs

- Defining new research developments to answer the user needs
- Defining products
- Defining impacts transfer functions

✓ Producing products

✓ Assessing and refining products

- Feedback from stakeholder and intermediary (SME) levels to government /funding agencies to develop new products and research

✓ Methodologies for evaluating the economic value of Climate Services

- Cost/benefit analysis
- Quality control and Certification?

✓ Beyond CLIM-RUN: the lessons learnt

4.5 WG2 Climate information transfer to stakeholders,

See presentation n. 11 by A. Cauchy TEC, A. Dell'Aquila, ENEA;
http://www.climrun.eu/products/presentations-and-posters/clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

4.6 WP1 CLIMRUN Protocol

See presentation n. 20 by Paolo Ruti, ENEA and Clare Goodess, http://www.climrun.eu/frontend/loader?page=2&path[]=products&path[]=presentations-and-posters&path[]=clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

Main aspects to be addressed on D1.1 and D1.4:

- The business model for climate services (three tiers model)
- Climate tier
- Intermediate (SME) tier
- Stakeholder tier
- Need for national coordination … CS it's not simply limited to Met Services
- Training of intermediate tier (and also stakeholders) – capacity building
- Certification of products
- Upstream research: Feebacks from stakeholder's and intermediate (SME ..) level to government of funding agencies to devolop new products and research
- Co-funding from intermediate level and Stakeholders
- Synthesis of economic value of CS from Case studies
- Synthesis of new research from CLIMRUN experience

Further aspects:

- Major and systematic continuous involvement of stakeholders even within the project
- Needs to translation to specific stakeholders in an appropriate language ; better identification of stakeholders community (skilled /not skilled) . Translate in concrete example (real life)
- Define a priority of problems (find the easiest battle and the key points. Find the needs)
- Definition of transfer function from climate to impacts problems (e.g precipitation-> hydropower). Major involvement of impact groups
- Sustainability of climate services (in an operational point of view)

4.7 Round table: beyond CLIM-RUN (cross-cutting conclusions and Guidelines for European Commission),

C. Goodess (UEA), PD Reyes (IC3), E. Banos de Guisasola (CMCC), Hughues Ravenel (Plan Bleu), V. Artale (ENEA). Moderator: Paolo Ruti, (ENEA),

see presentations: from 13 to 17

http://www.climrun.eu/frontend/loader?page=2&path[]=products&path[]=presentations-and-posters&path[]=clim-run-3rd-governing-board-assembly-rome-8-9-july-2013.

Please find in attach the synthesis provided by Vincenzo Artale and E. Banos de Guisasola of their speeches.

4.8 Synthesis of the second round user workshop (WP4… 8)

C. Goodess, A.Cauchy, C . Gannakopoulos, M. Davies, S. Torresan, V. Giannini

See presentantion: 9, 12, 18, 19, 23
http://www.climrun.eu/frontend/loader?page=2&path[]=products&path[]=presentations-and-posters&path[]=clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

Summary of tasks:

- Stage setting (complete)
- first stakeholder workshops (May-Nov 2011)
- Mapping the issues (complete) perception and data needs questionnaires
- Iterative consultation and collaboration (ongoing)
- Consolidation and collective review/assessment
- second stakeholder workshops (May/June 2013)
- Going forward: synthesis and recommendations
- final workshop and end of project (February 2014)

WP2/WP3 Modelling and observational tools
Samuel Somot, CNRM-METEOFRANCE. See presentations n. 28, 29, 30

Joint session on climate tools to support climate services – S. Somot

Seasonal and decadal predictions over the Mediterranean area
See presentations: by P. Doblas-Reyes, V. Guémas (IC3): Decadal prediction of Mediterranean temperature and precipitations, n. 18 by Melanie Davis n. 19

Regional downscaling scenarios over the Mediterranean area
See presentantions by: R. Cornes (UEA) n. 21, E. Coppola (ICTP) n. 22, , Giannakopoulos (NOA) n. 23, M.D. Frias (UC) n. 24, Dell'Aquila (ENEA) n. 25, G. Dubois (TEC) n. 26,

http://www.climrun.eu/frontend/loader?page=3&path[]=products&path[]=presentations-and-posters&path[]=clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

4.9 New regional climate model developments

See presentations by: C. Dubois (CNRM) n.28, S. Somot (CNRM) n. 28, Sannino (ENEA) n. 29

http://www.climrun.eu/frontend/loader?page=3&path[]=products&path[]=presentations-and-posters&path[]=clim-run-3rd-governing-board-assembly-rome-8-9-july-2013

Comments and decisions, see presentantion by S. Somot (CNRM-METEOFRANCE, 30) and the bullet points here listed:

- Set-up a common WP2-WP3 products lists with the status of the information sheets (Samuel). A new list of product will be done.
- Widely sharing the common WP2-WP3 list of products (Samuel and Clare after the merge).
- Check the Adriatic integrated case study functioning: role of the Stakeholder expert / Climate Expert, list of on-going products, standard information sheet format (Alessio and Erika with the CMCC stakeholder experts)
- Check the Tourism products for Cyprus workshop (Clotilde, Alessandro with the WP3 and TEC experts)

- Promote a better coordination of the products based on extreme indices. Richard Cornes r.cornes@uea.ac.uk> at UEA – WP3 would be the CLIM-RUN extreme indices contact point. Please keep him inform of your extreme work in CLIM-RUN.

- Circulate again within WP2 the information sheet common format (see attached) and explain the information sheet publishing protocol (the climate product information sheets must be nearly finalized internally within the WPs before being submitted by the main producers to Orietta Casali <orietta.casali@enea.it>.

- Promote the upload of Med-CORDEX simulations in www.medcordex.eu (action by ICTP, CNRM, ENEA + other Med-CORDEX partners)

- Promote the use of the new Med-CORDEX simulations but putting them in a wider context (CMIP5, ENSEMBLES) or using them for demonstrating added-value of 12km runs or coupled runs. (Be careful not to use results from one simulation without uncertainty estimate in front of stakeholders)

- Try to be consistent as much as possible on "reference period" for climate change assessment. Proposition is 1961-1990 for ENSEMBLES, CIRCE, SCAMPEI, ACQWA-based products. 1976-2005 for CORDEX-based products.

- Be ready to participate to write the "CLIM-RUN protocol on climate services" meaning giving feedbacks from our "in-situ" experience from WP2 point of view as (i) climate service producers, (ii) Climate Expert contact point and CE-SE pair and (iii) on the proposed CLIM-RUN Business plan for climate services

- Quickly finalize MS7 (ENEA), Del2.4 (CMCC) and Del2.6 (ENEA)

- Start thinking about multi-partner papers in WP2 and outside for a better valorization of CLIM-RUN.

4.10 Next CLIM-RUN School,

Erika Coppola (ICTP) has presented the main frame of next CLIM-RUN school, which will be held in Trieste on December 2013. A preliminary list of lectures have been identified: Stefano Micheletti, direttore ex-osmer, Centro Meteo Arpa Friuli Venezia Giulia, Sandro Caparelli, piano strategico Comune di Venezia, Sergio Castellari, IGV, Alessandro Lanza.

Other lectures will be identified in the next weeks.

The lectures will be recorded and will constitute part of the deliverable D9.2: On line scientific dissemination initiatives. Further contact between ENEA and ICTP will be held in order to carry out this task.

Erika Coppola has prepared a preliminary information sheet of the initiative, which is hereunder reported:

"A week of Climate Services

Can a stakeholder learn how to use climate services and can a climate scientist learn how to produce a suitable research product for a climate service?

Traditionally there is always been a gap between the usual products that a scientific climate community can produce and what is suitable for using by a stakeholder. Recently this problem has been faced by the scientific community at several level and EU founded project as CLIMRUN have been shaped to initiate a possible climate service network for the Mediterranean area starting from a bottom-up approach that consist in directly involve the stakeholders in the beginning of the project development.

This workshop will be used as a stage to see how these two different communities can meet and interact. As the CLIMRUN project also the school will adopt a bottom up approach so there will be

- *Lectures by stakeholders on how to use the climate services. Examples taken from the energy sector, tourism sector, forest fires and mega-cities adaptation plan.*
- *Lectures by a representative of regional met-services on capacity building session.*
- *Lectures by a representative of existing operational climate service*
- *Lecture on communication aspects*
- *Lecture on mechanism for adaptation*
- *Lecture on economic assessment*

This is a one-week school for postgraduates and early career research from any discipline related to climate change issues.

The school is organized with lecture in the morning and laboratories in the afternoons that will be related to the topic covered in the morning session. The students are expected to present their results achieved during the lab sessions by the end of the week."

4.11 Final dissemination activities

CLIM-RUN web site and newsletter

The dissemination activities will be carried out through the following channels and initiatives:

1. Web portal. The web portal of CLIM-RUN will be kept alive for years beyond the project life since it is stored in ENEA's server and it can be hosted for an indefinite time. This is another

good reason to diffuse through this channel the most complete scientific information. At this regards the Scientific Production session will be enriched with all the produced products: Lecturers, Public deliverables, Presentations and Posters, Publications, and Information Sheets (see above).

2. A special number of the last newsletter will be prepared in February 2014, before the last final annual meeting
3. The final meeting will be organised in Brussels for the importance of the location and better valorisation of CLIMRUN project's final results.

Data portal (WP3)

An update is needed from Manfred Lange (Cyprus).

Special issue transdiciplinary papers

- Special issue on Climate Services
- Suggested Journals: Climatic Change (F Giorgi contact), Climate Research … …
- ECLISE engagement
- TOPICS: Climate Services Protocol; Interacting with stakeholders; Driven modeling activities … new research lines for modeling improvements …

The Gender issue in CLIM-RUN

In line with the EU general recommendations facing the gender issue, keeping also into account the important effective role that women have within CLIM-RUN project, particular attention will be devoted to valorise the women contribution in the project. At this regards the following initiatives and occasions have been identified. The role of women in CLIMRUN will be promoted in:

- the final newsletter of the project,
- in the final meeting in Brussels
- short Interviews to women researchers in CLIMRUN project have been done during the meeting in Rome. They will be disseminated through the project web site.
- CVs of CLIM-RUN women will be published in CLIM-RUN web site
- Other initiatives where to promote women by CLIMRUN Consortium participants. In particular, CMCC will promote women' role in the project in line with the EU gender balance policy, see: link: http://ec.europa.eu/justice/gender-equality/gender-decision-making/

4.12 Synthesis of the speeches in the Round table: beyond CLIM-RUN (cross-cutting conclusions and Guidelines for European Commission)

4.12.1 Vincenzo Artale (ENEA)

Vincenzo Artale introduced the mission of ENEA in climate issue:

To understand and predict changes in Earth's environment by:

- The analysis of *in situ* and satellite data and developing and analysis of the numerical climate modeling of the Earth Systems and in particular of the Mediterranean Region (*Protheus System*);

To conserve and manage natural resources by:

- The development of modeling tools/technological platform to fill the gap between RD&D results and market applications;

To meet economic, social, and environmental needs by:

- Elaboration of integrated mitigation and adaptation strategies to mitigate the effects of climate change and to keep citizens informed of the changing environment around them;
- Increasing the information, at regional (local) scale, of important climate variables (e.g. temperature and precipitation) reducing the uncertainty of the climate response from human forcing

ENEA is studying the impacts in key areas of climate change in Italy concerning the following issues:

- Energy (Loading of the network)
- Tourism (e.g. snow cover)
- Sea Level Rise (coastal management)
- Water Supply (Sanitation) and Hydrology of Civil Infrastructures and River runoff
- Terrestrial ecosystems

To fully meet the above aims is crucial the development of integrated systems, since the environmental, the economic-productive and the social systems are strongly interdependent. For example, disturbance to the technological systems (power grid, telecommunication network, transport network, etc.) such as reductions in service during blackouts, can have significant impacts on the social system, but also in the production of goods and services and finally on the environment. At the same

time, "disturbances" or events on the environmental, social and productive systems produce more or less significant impact on the infrastructure system.

This interdependence requires the use of appropriate tools for scenario analysis, programming and intervention planning, predicting crisis scenarios related to natural events, the assessment of impacts of the crisis scenarios, taking into account the effects induced by global phenomena of interdependence between systems. These new generation tools (e.g. the decision support system, DSS) require a higher and more integrated knowledge of the environment and the social and productive infrastructures of a given region.

Furthermore, all the above research areas will have a strong influence in conceiving new ideas of Smart City, that is the development of integrated technologies on several fronts: in the promotion, within each function (energy, mobility, construction, economy, environment, social participation) of efficient use of advanced systems, increasing the quality and quantity of the services provided to citizens also by the integration of data and simulations.

As far as the quality is concerned, together with a better functionality the Smart City cannot exclude in its conception also other important values such as the artistic value, human wellbeing; in developing new products in various sectors, along with this new concept of quality a larger indicators list have to be identified in which the aesthetic and comfort live together with the more well established efficiency indicators.

The present generation inherited precious and immortal masterpieces which with their beauty still continue to benefit mankind, improving urban and rural landscape from the aesthetic and economic point of view. Facing the present environmental and economic crisis it is important more than ever that like "*dwarfs standing on the shoulders of giants*", when producing new things and new tools both traditional and modern values have to be taken into consideration, and this is particularly crucial in planning urban and rural landscape.

It has been argued that very often the real boost to the economic crisis are conflicts at higher or lower intensity, with their boost on technology and industry innovation. Leaving aside for a while the disastrous impacts on mankind, it is recognized that these conflicts have devastating impacts on the environment and on natural resources. Mankind has to find out new sources of impetus, with the same strength but with zero or lower negative impacts. From the Economy of Conflict it has to move to the Economy of Beauty production. The next Grand Challenge will be the connection of the scientific research and the technological innovation with the creative capabilities of artists, artisans, and workers in general, contributing to the creation of new (and old) jobs, shaping a better human world with lower negative impacts on the other natural habitats.

4.12.2 Eva Banos de Guisasola (CMCC)

E. Banos de Guisasola (CMCC), indicates that CLIM-RUN have great interest providing tools and information necessary to provide climate services. For CMCC, this interest is reflected, among others, through specific actions and participation to initiatives such as:

1) Mediterranean Climate Outlook Forum MedCOF (where MedCOF is overarching among three COFs: PRESANORD, SEECOF and a new COF for the Western Mediterranean and being part of the steering committee);

2) Mediterranean climate change cities consortium MC4 (where CMCC is part of its Steering committee representing Mediterranean basin and where the focus is on adaptation to climate change in cities);

3) Climate Adapt Platform European Environmental Agency (where two regions are relevant, Mediterranean Region and South East Europe); 4) Projects in the Mediterranean and/or with an adaptation focus (ACLIMAS, BASE, CIRCLE-2, ETC/CCA, ETC West Balcans, FUME, IONIO, JPI Climate, Climate KIC, MEDSEA, MY OCEAN 2, ORIENTGATE, PERSEUS, SNAC, TESSA..); and

5) Through climate data and information provision in this basin (climate predictions and climate change projections; information systems and diagnostic tools; scientific support; tailored sectorial climate products; probabilistic skill: reliability Eastern Mediterranean; deterministic skill: anomaly correlation coefficient; climate outlooks,...).

Providing climate science targeted and precise timely information is crucial to elaborate better planning policies, there is an urgent need to involve stakeholders in the decision-making process, this involvement might turn into economic savings and making the right political and strategic decisions and would increase resilience to a changing climate. And the participation in CLIM-RUN is facilitating all these factors.

What is crucial is the need for clear coordinated efforts from various groups and countries to provide useful information in terms of adaptation policies in the Mediterranean. And CLIM-RUN is in an privileged position to provide knowledge and methodology that can be used in any activity which has a climate service component.

4.12.3 Clare Goodess (UEA)

Clare Goodess outlined some of the terms of reference for the recently established World Climate Research Program (WCRP) Working Group on Regional Climate (WGRC http://www.wcrp-climate.org/index.php/key-deleverables/regional-climat6) of which she is a co-chair along with Bruce Hewitson of the University of Cape Town:

- To facilitate coordination of WCRP research activities relevant to the provision of regional climate information and related climate services

- To integrate the regional user and decision maker context into the design and development of regional climate science through two-way communication and co-production activities
- To strengthen the role of regional climate science activity within the WCRP with research results communicated effectively to, or where possible designed in partnership with, climate service institutions.....
- To provide recommendations regarding the provision and communication of information for regional impact assessment, decision making and climate services..
- To facilitate, in co-operation with other relevant international organisations, the provision of good practice guidance for potential users on the identification, selection, processing, application and interpretation of regional climate information

The underlined words reflect the interlinkages between the interests of the WGRC and CLIM-RUN.

The WGRC also has responsibilities with respect to CORDEX:

> To oversee specific WCRP regional climate research initiatives including the Coordinated Regional Downscaling Experiment (CORDEX)……..

and the Global Framework for Climate Services:

> To foster communication between the WCRP and the GFCS and Future Earth, and to serve as the point of contact between the WCRP and regional climate information/service entities such as the Climate Services Partnership (CSP)

CLIM-RUN has already been highlighted as a CSP case study, but there should be further opportunities for CLIM-RUN to inform and feed into WGRC and GFCS activities, for example, through dissemination of the CLIM-RUN protocol.

List of participants

Banos de Guisasola	Eva	Euro Mediterranean Center On Climate Change
Bigano	Andrea	CMCC
Brankovic	Cedo	Croatian Meteorological and Hydrological Service
Calmanti	Sandro	ENEA
Casali	Orietta	ENEA
Coppola	Erika	ICTP-UNESCO
Casanueva	Ana	University of Cantabria
Cauchy	Adeline	TEC
Cornes	Richard	UEA
Davis	Melanie	Ic3
Dell'Aquila	Alessandro	ENEA
Doblas-Reyes	Francisco	IC3
Dubois	Clotilde	CNRM
Gallina	Valentina	Centro Euro-Mediterraneo sui Cambiamenti Climatici
Frias	Maria D.	UC
Giannakopoulos	Christos	National Observatory of Athens
giannini	valentina	Centro Euro-Mediterraneo sui Cambiamenti Climatici
Goodess	Clare Mary	University of East Anglia
Lange	Manfred	The Cyprus Institute
Mariotti	Anna Rita	UM
Paci	Daniele	JRC
Pasicko	Robert	UNDP
Rousset	nathalie	Plan Bleu
RUTI	Paolo	ENEA
Schmidt	Peter	PIK

Somot	Samuel	Météo-France / Centre National de Recherches Météorologiques
Carillo	Adriana	ENEA
Cioni	Irene	ENEA
Sannino	Andrea	ENEA
Torresan	Silvia	Centro Euro-Mediterraneo sui Cambiamenti Climatici

5 CLIM-RUN Final Meeting – Venice 24-25 February, 2014

During the CLIM-RUN Final Meeting have been defined the main outputs of the project and outlined the main results and gaps of the project. Here under a short summary.

6.1 Climate service protocol and CLIM-RUN Case-studies Portal

The main objective of the Clim-Run protocol is to support the envisioned bottom-up approach for the development of climate services and the transfer of improved climate information to stakeholders. More precisely, the protocol is intended to support this bottom-up approach at two main levels. The first aim of the protocol is to propose some methods and tools to be used to involve and communicate with stakeholders at the Clim-Run project level. The second aim of the protocol is to propose a business model for the development of climate services at the Mediterranean level, based on the results of the bottom-up approach of the project. (for other information see: D1.1)

A "Case Studies Portal" has been created under the main CLIMRUN website with the aim to provide a quick access to all the main dissemination products of the project. Differently from the main website, targeted mainly for scientists and experts already aware of the CLIM-RUN project, the Case Studies Portal offers a visual approach to available information making it easy accessible to anyone (scientists and non-scientists). The Case Studies Portal offers three main products: Case Studies map; Web Applications; Videos & Animations. (for other information see D1.2)

6.2 Results of the Breakout group discussions

6.2.1 How to deliver climate products efficiently?

***General comments*:**

The product sheets where the starting point but cannot be the final deliverable because the stakeholder cannot directly use those. You need more direct tool like for example direct dialog. (S. Gualdi)

We are translating the way to do weather forecast to the climate forecast in the climate services. But in these one the Who and How are more difficult. (P. Ruti)

How?

Translate the information in a format that the stakeholder (SH) is able to understand.

Exploit the ability of the SH in using the tool like application that already exists.

There is the need to distinguish between different levels of stakeholder to be able to better interact with them.

The way to communicate depends on the translator tier

There is a need for a standardization of products and language. If it were possible we should use universal communication language. Coordination among all the sources of information.

Develop products on-demand based on the request of a specific user.

When the climate products are presented, both the bottom-up and top-down approach need to be there.

Incorporate the user needs in the data.

How is it possible to quantify the amount of money needed to pay for information coming from climate services on short and long time scale?

One possibility to pay climate services it could be to collect the needs and to try to influence the founding agency (like for example EU) to open calls shaped on the stakeholder needs.

To be able to fulfill the requests coming from the SH there is often the need for international database and local observations.

Who (where)?

It is still an open question if it should be the climate service or private SME the optimal choice to deliver climate information.

For sure the climate scientist are not the best one to play this role. There is the need to involve them but as seed of information. After that the major role should be reserved to the advisor that has a better knowhow of how to communicate the information.
It is auspicable to identify key intermediate that are in contact with the final user.

The communication strategy has to be multi-form and sectorial dependent. It needs to include graphical designers and communication people

What?

One of the clearer and strongest lesson we learned in CLIMRUN is that
the *first climate services is the training activity*. Only scientist can do it.

A lot of educational aspects need to be taken care of. Many stakeholders need to be instructed about what climate is on a very basic level. Something like probability of occurrence on one event needs to be well explained.

There is a need to know which is the transfer function used to prepare the information.

The product sheets have too many scientific information. The web tool are more appropriate to interact with the stakeholder.

The information need to have a customized form according to the specific area/sector.

It would be important to improve the product to collect feedbacks on the developed information product.

Why ?
Why is useful to develop a climate product :

1. For the climate scientist some of the products are not even usefull for scientific purposes because they do not add any better knowledge to the science and sometimes are not easy to use.

2. For the stakeholder

- must respond to the user need
- usefullness must be checked a posteriori

When?

The time scale on which the requests need to be satisfied depends on the kind of demand. In the beginning the request can be satisfied by a a preliminary answer (short time scale) and later on by a more tailored experiment (long time scale).

A further distinction has to be made if the request come from a regular customer or a new customer. In the first case the answer has to be a fast answer; in the second case the answer can come in a longer time scale because the request will be new.

6.2.2 How to involve end users on a more permanent and sustainable basis?

Facilitator: Clare Goodess
Rapporteur: Melanie Davis

1.

- Identify stakeholders – initially few rounds of meetings/forums required
- 1 day meetings per year – purpose of re-evaluating products and marketing to new users
- Sector specific – within-sector specific
- Listen to needs and respond
- Relationship building – invite same individuals each year
- Capacity building
    - Develop understanding of how to use products
    - Who's role to decide how to use information?
    - Best practice
- Specific to timescale
    - Weather and seasonal – operational
    - Decadal and climate change – strategic planning
- Permanent structure not just project – eg forums/platforms
    - Reply to needs to show progression
        - Questionnaires with product leaflet
- Attention to communication and visualisation
- Start from basics, e.g.:
    - What is available?
    - What is a forecast? Differentiate from weather.
    - Differentiate probabilistic and deterministic
    - Don't assume knowledge

2.
"Champions"

- Testimonials of key end users
    - Efficiency
    - Pay them for their time (overcomes problem of benefiting competitors)
    - Financial benefit can be incentive
    - Invest to strengthen link with consultancy/met services
- Accreditation needed?
- Demonstrate value

- Difficult (low skill is barrier)
- Provide examples of how information is used
- Use past examples

3.
Investment
- From bank, EU?
- From associations/platforms

} engage intermediaries, e.g., consultants

Develop tools
- Apps
- Technological advancements

User engagement – committed by legislation (e.g., EU Directives)

What is available? vs what do you need?
- local scale – what scale is useful?

} Long-term engagement needed

Training → Credibility, Learning

} Communication → Common terminology; Define channel & contact point

6.3 What has been attained and what are the gaps to be filled

By: Christos Giannakopoulos, NOA, Greece, *Silvia Torresan*, and *Valentina Giannini*, CMCC, Italy

6.3.1 Achievements: Methods and Climate Products

1. Cet-Set (Climate Experts and Stakeholder Experts) communication helped stakeholders to identify variables and products needed
2. skill maps with different level of information it is about a relation with a few individuals expanding from their contacts;
3. A series of information sheets which summarize the most important results achieved for each case studies and sectors;
4. toolkit to provide info to users;
5. lectures on ICTP and CLIM-RUN website, models, database, movies are all tools form of tool needs to be adapted to user;
6. various renewable energies sources hydropower in Croatia wind power with ENEA, Meteo France for solar aerosols med scale and site specific;

7. face very complex and diverse situation, see: Tunisian revolution:
8. small number of stakeholders but with physical interaction very scarce feedback from Questionnaire semi-structured interviews less interviews, but good quality;
9. wind, speed solar radiation were never looked at before;
10. lessons learned: be more focused on climate data tourism will be important sector, but not leading;
11. training: what is fire risk how to use data to explore sensitivity to fire risk;
12. good understanding through series of interactions potentially Morocco, work with Met Office; very effective way to reach stakeholders (Spain) via consultancies working with energy companies they have clients, know what they want;
13. lessons learned 1. integrated perspective: not only climate parameters also impacts and expected risks 2. early stakeholder involvement is valuable get inputs in hazards metrics share risk assessment approach 3. uncertainly is high: develop adaptive policies;
14. Learned computing indices, variables, methods;
15. long term fire risk forecast under impacts of climate change;
16. perception and data needs questionnaire reviewed after first round workshos and revisited in D5-6-7-8.4 and D4.4 who and what do they want: what questions need to be asked too long questionnaire not to successful better: use Questionnaire as a guide to semi-structured interviews more useful info;
17. attention to communication and visualization of info many users don't understand what we're showing many versions: now we're quite confident with versions we have good reaction from stakeholder;
18. downscaling interpolation methods 5x5 km resolution according with stakeholders request med11 fire risk maps;
19. past and future tourism comfort indexes: how to improve sea bathing water condition sst close and far from coast seasonal forecast;
20. provide some coordination support to case studies identify 5 key stages: structure to project and discussion with stakeholder;
21. constraints in addressing all needs impacts of climate (P, T) SLR, SLP risk products (pluvial flood risk, slr risk);
22. info sheets perhaps too many, no guidance on which to concentrate on simulate case-studies; stakeholder consultation and delivery of services 4 case studies: different use of resources;
23. portal not completed but in progress
24. CLIM-RUN is known at EU level and beyond March 2014
25. main success: introduced climate info to energy stakeholders necessary to do so, first steps
26. implementation of protocol: 1. not enough social sciences set led by climate scientists, not best solution we asked to hire specific professional: benefit for project 2. too complicated structure: only at the end we involved CET, roles not so precise in team but in some cases this letter to good management - Tunisia good results - Savoie good process
27. synthesis and overviews possible to see some common messages practice guidance and recommendation based on 3 years work

GAPS

1. visualization of info not enough attention to this aspect visualize info in intuitive way could help need graphic designers, media experts to create a real service to create communication gap;
2. results in coastal area with low resolution data point is inland, have gridded observation data
3. not focus enough on solar energy in a similar project solar should have more emphasis
4. on research side: long/short term perspective regional climate modelling: cannot progress unless we go back to model development
5. define framework include this discussion in deliverable on recommendations 1. Eu: Copernicus, discussed in Bruxelles, 1.a. need info on how to develop procedures 1.b. about research: what should be priority in next 2 years 2. WMO 2.a. interface with users 2.b. what does "operational" mean in our sense? 2.c. research priorities
6. operational climate services: certification of data set, perhaps the certification should be about the method, certification to make process transparent, including caveats and limitation;
7. include regional models;
8. DM not just one sector, we need to look within sectors really specific end-users not generic group get to person who can make decision when talking to group you loose focus;
9. use of impact models in diff sectors will help communication to policy makers strong link: climate and impact info needs to be incorporated in our perspective. It is not so easy to conclude risk assessment needs to be included risk sector too wide to be included. Info on risk is sector specific, for energy not needed. climate services will feed into other services, not only for cca; integrated approach is crucial establish strong link between climate and impact modellers. After the production of climate info, this info is taken by intermediaries; .climate info provided by models is taken by other and transformed (bias checked, etc). Provide info for DM, made on the implications of change, need to consider impacts need to provide info on impacts. Indexes based on thresholds how did you manage the correction of model biases to have reliable index, w/o gridded data you cannot correct bias. For all these indeces this is an issue perhaps with downscaling this could be addressed. efficient climate service gridded model data 1. evaluate 2. Correct. Not only for bias corection also important to gain feeling for what we are looking at reinforce credibility of what we are producing from stakeholder point of vew, o feeling of what is happening there;
10. Observational data: sensitive issue develop online service where observed data will not be stored but transfer function. Now you can put data to be processed and you are only seeing it Morocco. This is done in mosaic. Four lessons learned: organizational problems (e.g. info about timing of workshops lacked), infrastructure not in place: data and case study portals not in place added value not always there (e.g. downscaling) translating and prioritizing user needs messy and not always transparent feedback to

users about response to needs not always good production monitoring not always good (define responsibility) role of social-science: develop Q

11. run pilot communication experts for info sheets interesting discussions on info sheets, would have been good involving set time is key;
12. evolution of condition in summer high mountain isotherm 0 degrees not completed
13. go back to basis fact sheet with simple definition: what is seasonal forecasting, what is uncertainty, etc. people say they understand but not necessarily do ask for info we cannot give
14. problems with TCI as well to have gridded data Tunisia had difficulties in having raw data. just bias correction is not enough; assess what types of bias correction that you're using more research is needed in this area
15. not just met aspect, link with power upper/lower threshold of work
16. products improvement, but gaps need to be filled: integrated index: fire risk from met with info from vegetation and land-use socio-econ factors that can increase risk (most fires are started from socio-econ issues)
17. show impact on DM process this will happen once we demonstrate usefulness
18. in depth assessment of skill multimodel approach calibration state of the art
19. gap of territorial data: need for more detailed info expressed by sh multi-risk assessment needs to be produced communicate what the limits of a product are
20. change variables in the portal specific indices were introduced temporal resolution: proper time needs to be used (avg, noon, daily, monthly) new methods being developed.

6.4 Synthesis of stakeholders' point of view – Round table discussion - Monday 24 February, 2014 – Venice.

Synthesis compiled by Valentina Giannini
stakeholders:

- Sandro Caparelli, Comune di Venezia, Settore sviluppo economico, politiche comunitarie e processi partecipativi
- Simone Tola, AGIRE - Agenzia Veneziana per l'Energia

Users of climate products have been asking, throughout the whole participative process set up for CLIM-RUN, for strong and clear science outcomes, upon which to base decision making. Moreover, decision makers and politicians need some training which should enable them to understand how to use climate services: a team could be organized to support local administrations.
Related to this in the round table some points were raised:

- results of CLIM-RUN should be presented in all case study areas,
- maps talk much better than statistics and graphs,
- the idea of uncertainty could be simplified: good/medium/bad,
- a repository could be created where to download data from.

Agenzia nazionale per le nuove tecnologie, l'energia
e lo sviluppo economico sostenibile

Programme Final Governing Board Assembly

February 24th - 25th, 2014
Euro-Mediterranean Centre for Climate Change
Island of San Giorgio Maggiore, Venice

PROGRAMME

Monday, February 24th

9:30 – 9:45 **Welcome address**

Silvio Gualdi, CMCC, Italy

9:45 – 10:00 **Introduction**

Paolo M. Ruti, ENEA, Italy

10:00 – 10:30 What is a climate services protocol? (final consideration from WP1)

Nathalie Rousset, Plan Bleu, France and *Matteo De Felice*, ENEA, Italy

10:30 – 11:00 *Coffee break*

11:00 – 13:00 Breakout group discussions on the CLIM-RUN climate services protocol

What is the role of climate translators?

How to involve end users on a more permanent and sustainable basis? How to deliver climate products efficiently

Ghislain Dubois, TEC, France, *Clare Goodess*, UEA, United Kingdom and

Samuel Somot, CNRM, France

13:00 – 14:30 *Lunch*

14:30 – 15:30 Product sheets: some examples. Introduction, overview, purpose, revision
Clare Goodess, UEA, United Kingdom

15:30 – 16:30 The stakeholder's point of view. The Adaptation Plan of Venice
Daniele Piccolo, Regione Veneto, Italy and *Sandro Caparelli*, Comune di Venezia, Italy

16:30 – 17:00 *Coffee break*

17:00 – 17:30 Economic value
Perry Miles, Joint Research Centre, Spain

17:30 – 18:00 Perception of CS comments for UIP
Melanie Davis, IC3, Spain

18:30 *Aperitif*

Tuesday, February 25th

9:30 – 10:30 Admnistrative steps
Orietta Casali and *Giovanni Addamo*, ENEA, Italy

10:30 – 11:00 *Coffee break*

11:00 – 13:00 What has been attained and what are the gaps to be filled
Christos Giannakopoulos, NOA, Greece, *Silvia Torresan*, and *Valentina Giannini*, CMCC, Italy

13:00 – 14:30 *Lunch*

14:30 – 15:30 Rapporteurs

15:30 – 16:00 Dissemination activities: A short review
Erika Coppola, ICTP, Italy, *Orietta Casali* and *Alessandro dell'Aquila* ENEA, Italy

16:00 – 16:30 *Coffee break*

16:30 – 17:00 Nice examples: movies by CMCC, CNRM, ENEA and IC3

17:00 – 18:00 What next: recommendations for EU and WMO
Paolo M. Ruti, ENEA, Italy

18:00 Close and farewell

CLIM-RUN

Climate Local Information in the Mediterranean region Responding to User Needs

Participants List

Giovanni ADDAMO
Agenzia Nazionale per le nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile (ENEA)
Italy

Roussos ANARGYROS
National Observatory of Athens (NOA)
Greece

Alessio BELLUCCI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Andrea BIGANO
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Cedo BRANKOVIC
State Hydro-Meteorological Institute (DHMZ)
Croatia

Mauro BUONOCORE
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Laura CACIAGLI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Sandro CAPARELLI
Comune di Venezia
Italy

Orietta CASALI
Agenzia Nazionale per le nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile (ENEA)
Italy

Ana CASANUEVA
Universidad de Cantabria (UC)
Spain

Erika COPPOLA
The Abdus Salam International Centre for TheoreticalPhysics (ICTP)
Italy

Richard CORNES
University of East Anglia (UEA)
United Kingdom

ENEA Agenzia nazionale per le nuove tecnologie, l'energia e lo sviluppo economico sostenibile

cmcc Centro Euro-Mediterraneo sui Cambiamenti Climatici

Jacopo CRIMI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Andrea CRITTO
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Melanie DAVIS
Fundacio Institut Catala de ciencies del Clima (IC3)
Spain

Matteo DE FELICE
Agenzia Nazionale per le nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile (ENEA)
Italy

Alessandro DELL'AQUILA
Agenzia Nazionale per le nuove Tecnologie, l'Energia e lo Sviluppo Economico Sostenibile (ENEA)
Italy

Clotilde DUBOIS
Meteo-France (CNRM)
France

Ghislain DUBOIS
Tourisme Territoires Transports Environnement Conseil (TEC)
France

Jesus FERNANDEZ
Universidad de Cantabria (UC)
Spain

Maria Dolores FRIAS
Universidad de Cantabria (UC)
Spain

Elisa FURLAN
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Valentina GALLINA
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Christos GIANNAKOPOULOS
National Observatory of Athens (NOA)
Greece

Valentina GIANNINI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Filippo GIORGI
The Abdus Salam International Centre for TheoreticalPhysics (ICTP)
Italy

Clare GOODESS
University of East Anglia (UEA)
United Kingdom

Silvio GUALDI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Zouhair HELAOUI
Université de Tunis (GREVACHOT)
Tunisia

Latifia HENIA
Université de Tunis (GREVACHOT)
Tunisia

Anna KARALI
National Observatory of Athens (NOA)
Greece

Manfred LANGE
The Cyprus Research and Educational Foundation (EWRC)
Cyprus

Antonio MARCOMINI
Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)
Italy

Alessandro MARINELLO
alessandro marinelllo
Italy

Perry MILES
The Institute for Prospective Technological Studies (IPTS)
Spain

Silvia NEVI