



**WORLD METEOROLOGICAL ORGANIZATION**

**RA VI WORKING GROUP  
ON CLIMATE AND HYDROLOGY**

**Second meeting**

**Oslo, Norway, 19 September 2016**



# RA VI Working Group on Climate and Hydrology

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## 1. Opening

At the kind invitation of the Government of Norway, the third session of the RA VI Working Group on Climate and hydrology was held in the headquarters of the Norwegian Water and Energy Directorate (NVE) in Oslo on 19 September 2016

The meeting was attended by Ms Cristina Alionte Eklund (co-chair hydrology), Mr Ernesto Rodriguez Camino (co-chair climatology) and the Task Team leaders Messrs José Guijarro and Harry Dixon (Data Operation and Management), Hermann Mächel (Climate Watch System), Joseph Eitzinger (Agricultural Meteorology), Silvano Pecora (Water scarcity and drought), Erik Sprokkereef (Hydrological Modelling Forecasting, and Warning). Mr Giuseppe Ricciardi from ARPAE also attended the meeting. Messrs Sandor Szalay (Water scarcity and drought) and Jean Pierre Céron (RCC and RCOF) were unable to attend. WMO Secretariat was represented by Mr Tommaso Abrate (see annex).

In opening the session, the co-chairs and the Secretariat representative welcomed the participants and thanked them for their engagement in support of the regional activities. The Group was informed that the next session of the Regional Association will meet in September 2017 (likely in Dubrovnik, Croatia) and the Working Group activities in the year to come shall be geared to present concrete outputs at the session and inform its decisions for the next intersessional period.

It was also recalled that Ms Alionte Eklund and Mr Rodriguez Camino had recently replaced the previous co-chairs that moved to other position, and Mr Sprokkereef succeeded Ms Alionte Eklund in leading the TT on Hydrological Modelling Forecasting, and Warning.

## 2. Report of the Task Teams

The leaders of the Task Teams reported on the results achieved, on the difficulties encountered and on the plans ahead.

### 2.1 Task Team on Data operation and management (H. Dixon, J. Guijarro)

The co-chairs of the task team, recalled upon their Terms of Reference, composition, and the four teleconferences held to coordinate the tasks. J. Guijarro showed the current state of the web page of the team (located at <http://www.climatol.eu/tt-dom/index.html>), commenting on the last updated contents, mainly focused on links to hydrological documents and web pages. Referring to the promotion of data exchange, it was announced that a deliverable of the team, in the form of an [article](#) by Avner Furshpan on the reasons for a change in data policy from commercial to open access in the Meteorological Service of Israel, will be published in the forthcoming bulletin of WMO, hoping that it will inspire other NMHS to follow the same path.

H. Dixon informed about a Copernicus Climate Change Service proposal submitted in September 2016 involving a number of TT Members and gave more details on the web page links to access to observations from global climate data archives, baseline and

reference networks, the new section on use of proxy data, and the links to national databases and papers. After referring to other ideas not yet implemented, he exposed the plans for the remainder of the current period: Continue improvements to the website (particularly adding more contents to the proxy data section) and continue to support standards development in the region.

### 2.2 TT on Climate Watch System (H. Mächel)

The goal of the TT is to contribute to efficient monitoring and warning against climate extremes, through the provision of advisory and statements to users. The main activities carried out are: collection and verification of data, feedbacks to GPCCs, provision of online access to NHMS to the various products developed (strength of ongoing anomalies, catalogue of past extreme events and their socio-economic impacts, etc.). Protected access to the present and past Climate Watch Advisories for the National Meteorological and Hydrological Services of the WMO Regional Association VI is possible through the web site [http://rcccm.dwd.de/DWD-RCCCM/EN/products/cwa/cwa\\_node.htm](http://rcccm.dwd.de/DWD-RCCCM/EN/products/cwa/cwa_node.htm) (restricted access). An article was published in the WMO-Bulletin in 2016 about the successful forecast events of the Climate Watch System with two showcases: the Summer 2015 heatwave in Europe and South European floods in 2015. (Peter Bissolli, Ivan Cacic, Hermann Mächel and Stefan Rösner, 2016: Climate risk early warning systems in Europe. WMO Bulletin 65, 28-31). An outline of the content of the Guidance for Climate Watch Implementation was written with some additional contributions from Ernesto Rodriguez Camino; all task team members will be called upon to complete draft version of the Guidance for Climate Watch Implementation at regional, sub-regional and national levels by September 2017

Climate Watch products are not meant for the time being to be released to the general public but, although several products have been developed and made available, there are not well known by the NMSs and scarcely used, also because of lack of expertise to communicate them to the large public. The TT should prepare guidance for NMSs on how to use and implement these advisories and the possibility of linkage to MeteoAlarm explored and an expert from the pilot NMSs which participated in the project recruited to finalize them by next RA VI session in September 2017.)

### 2.3 Task Team on Agricultural Meteorology (J. Eitzinger)

The Task Team made good progress in the completion of its activities, also thanks to the fact that the leader made use of a pre-existing network of collaboration, which allowed a prompt start in the implementation of the work plan, but limited the exposure to a wide range of regional expertise. The TT leader underlined that due to the crosscutting nature of agrometeorology a closer cooperation with the other working group of the region was necessary, notably in the realm of service delivery, as well as hydrological institutions and relevant private sector actors. It was also noted that operational agrometeorological services as such are rare in the Region, and therefore the linkages with the agronomy community shall be strengthened, as well as with drought experts. An evaluation of the relevance of hydrological products, such as H-SAF products for agrometeorology conducted: soil humidity, snow cover and frozen soil

An analysis of the usability for agriculture of MeteoAlarm advisory was conducted and gaps were identified as the lack of alerts from phenomena significant for agriculture

(e.g. spring frost warning). Agricultural application would also benefit from longer lead times.

#### *2.4 Water scarcity and drought (S. Pecora also on behalf of S. Szalay)*

The TT co-leaders identified a number of EU opportunities, including resource mobilization, for enhancing cooperation in the region on water scarcity and drought. The project FP7 ENHANCE allowed the TT to work together with partners from all over Europe and from different sectors, developing case studies in Italy and Spain for multirisk analysis about water scarcity and droughts, based upon stochastic and numerical applications, water balance scenarios and climate change impacts on droughts to extend Multi Risk Management/Multi Sectoral Partnerships and voluntary commitments at RAVI scale. It also provided a suitable characterization of "prolonged droughts". The project Climate-KIC FWOO allowed to share expertise, tools and methodologies among partners from Spain, Italy and the Netherlands in order to find innovative, local solutions for the problem of salt intrusion in agriculture. In the next three years experts from Austria, Hungary, Croatia, Italy, Portugal and Germany participating in the INTERREG project PROLINE-CE will focus on the preparation of transnational guidelines regarding an efficient protection of drinking water resources. This objective should be achieved through the development of sustainable and appropriate land use and management measures aiming at the mitigation as well as reduction of droughts and floods under the challenges of climate change. These measures will be implemented and tested in designated pilot areas. An additional TT activity is about the implementation of the UN SEEA-Water accounting system, undertaken in Italy, Spain and Greece, and presented at the 2nd EWaS International Conference "Efficient & Sustainable Water Systems Management toward Worth Living Development"(Crete, Greece, 2016). In May 2015 both TT co-leaders supported the European Climate Change Adaptation Conference (ECCA, Copenhagen, Denmark), in particular in the session on "Adaptation policies and measures in the Mediterranean Region". Future TT activities include networking among NHSs, sharing operational experiences, supporting water resource assessment and hydraulic infrastructures integrated management, fostering TT participation in cross cutting themes of the WG Hydrology and Climate.

#### *2.5 Task Team Hydrological Modelling Forecasting, and Warning (C. Alionte Eklund, E. Sprokkereef)*

The Task Team made extensive use of teleconferencing held to coordinate the work.

The Group was informed about the Workshop on hydrological forecasting and warning services to be held on 20 September in Oslo, back-to-back with the Hydrology Forum, and that this represented a delivery according to the TT's ToR. The aim of the Workshop was to enhance the dialogue at the regional level in the field of hydrological forecasting and warning services and communication with end-users, exchange best practices in the field, follow up the latest technological developments and encourage future cooperation.

Another delivery from the TT-HMFW is a set of concise documents (summary) related to transboundary projects and activities (hydrological modelling).

The leader also highlighted the need to improve the cooperation with EU initiatives, Notably EFAS, particularly in consideration that it is now addressing flash floods, and synergies with FFGS should be explored. In this perspective, WMO participated in the annual EFAS Partners meeting in Seville (Spain) in April 2016.

## 2.6 Task Team on RCCs and RCOFs (E. Rodriguez on behalf of J.-P.Céron, absent)

The TT has benefited from an effective linkage with CCI work and developments in issues such as standardization of products and services, guidance on RCCs and RCOFs operation, technical guidance on NCOFs and some of the potential evolutions or adaptations. The forthcoming workshop on RCC Implementation (Belgrade, Serbia, 11-13 October 2016) will bring together representatives from all Member Countries of the region, focal points of the consortium members, representatives from Copernicus Climate Change Service, EU funded projects, etc. to discuss inter alia, the recent achievements and constraints, possibilities of further improving the services and products, as well as the role of the RCC Network in the wider European context. The workshop will provide valuable inputs to the TT on issues such as governance and coordination structure, evolution of products and services, collaboration/coordination with other relevant entities in EU (e.g. Copernicus) and role with respect to regional users (e.g. European Environmental Agency). There is still some relevant topics to be addressed by the TT -either before the end of the current period or during the next intersessional period- such as: i) strengthen the service dimension; ii) improve the feedback process and consequently the reactivity of the RCC; iii) take into account the CSIS aspects (e.g. help desk function, trainings, linkage with the UIP, ...); iv) improve the visibility of the RCC and RCOFs activities (outreach); v) introduce the climate change dimension into the RCC/RCOFs port-folio; vi) address the needs for possible new products and services (if any, as discussed at the Belgrade workshop).

### 3. Brainstorming

The participant debated about the difficulties and challenges encountered, as well as on possible solution and future activities.

Many underlined that the lengthy process for the nomination of national experts, especially for Task Teams, that resulted in a very delayed start of the activities, and in not uniform regional coverage of expertise and inputs. Furthermore not all appointed experts showed the expected level of commitment and willingness to contribute to the Task Team activities. While some TT leaders relied on previously constituted personal network of experts, it was recognized that this approach, though allowing a more efficient work, entails the risk of restricting the scope of the activities and limits access to the whole array of information and expertise. The revised OPACHE (Open Panel of CHy Experts) roster may provide a valuable source of experts in the domain of hydrology.

It was also noted that too often the ToR of the Group as adopted by the Regional Association are too ambitious including too many and far reaching activities, few of them being eventually implemented. The recommendation to the next RA VI was to adopt more realistic ToR, limited to one or two well defined and reachable objectives.

The participants recalled that the ultimate goals of the WG is to produce outcomes useful for NMHSs. Hence their dissemination should be improved not only by publishing on public web sites, but also by communicating them to potential users, and a greater involvement of NHSs should be sought during all the development phase.

The group also debated the appropriateness of exploring ways to link more closely with METEOALARM, with a view to making its information relevant to a wider set of users (e.g. spring frost warning for agriculture) and also to incorporate other possible types of information.

It was also stressed that the linkage with the work of the relevant WMO Commission for Climatology (CCL) and Commission for Hydrology (CHy) should be further reinforced, for optimizing the synergy of work and activities.

It was also reported that all the various videoconferencing tools tried in the recent times (Webex, BlueJeans, etc.) all presented some technical issues that made difficult and occasionally impossible the attendance of some member.

The benefits of having a joint group addressing climatological and hydrological issues were openly debated. It was felt that the joint working group has been instrumental in improving the mutual understanding of the priorities and needs of each discipline, but it was also recognized that many priority topics exist that do not necessarily draw special benefits from this arrangement. Similarly, issues dealt with in the other working groups on Service Delivery and Partnership and on Technology Development and Implementation are very relevant to both climatology and hydrology but efficient collaboration has not yet been established, typically a dedicated body to deal with issues related to climate services is not existing. It was also recalled that important initiatives, such as the Global Framework for Climate Services or the EU Copernicus programme have launched since the WG was first established in 2009, and the WG relations with them should be taken into account.

The group reminded that, besides working group, the Regional Association can identify other way to implement its work (e.g. task teams, special rapporteurs, etc.) and felt that the structure of the subsidiary bodies should be flexible and adapted to the priorities that the Region will identify at each session and cross disciplinary cooperation sought as and when it brings added value.

The following activities were identified as possible suggestion for the preparation of the working plan for the next intersessional period:

#### *Data Management*

- Assessing the status of data accessibility and dissemination (free vs at cost) by NMHSs in the region
- Organize a regional workshop on quality control practices (RA VI may make a prototype workshop to be replicated in other Regions)
- Collect cases on hydrometric network design
- Define strategies through which the region can contribute to WHOS

#### *Hydrological Modelling, Forecasting and Warning*

- Continue exploring possible ways of cooperation with EFAS especially concerning FFI and FFGS
- Develop guidance on how to communicate probabilistic forecast and uncertainty in forecast, especially to civil protection and disaster managers

#### *Climate Watch*

- Improve the uptake of these products by NMSs and support them in their use.
- Promote the implementation of climate watch advisories at national level.

#### *Agrometeorology*

- Organize a market place for exchanging know how and best practices
- Recommendations: Better cooperation with Hydrology institutions, other experts on drought, improve use of satellite data.

#### *RCOF*

- Explore the possibility of including hydrology to RCOF deliverables
- Strengthen the service dimension and take into account CSIS aspects
- Introduce the climate change dimension into the RCC/RCOFs port-folio;

#### **4. Closing**

In order to plan its activities and deliver on time before the next session of the Regional Association (tentatively in September 2017), and having in mind the ToR of the Working Group as established by Resolution 10 (RA VI-16), especially the requirement for the co-chairs to provide a final report at least three months before the next session of the Association the group agreed on the following time table for the preparation of its reports:

- Task Team reports by end May 2017 (by TT leaders)
- Working Group report by end June 2017 (by the two co-chairs)

A template for the TT final report will be prepared by the co-chairs with the support of the Secretariat.

A teleconference among the WG members will be organized in January 2017 (2<sup>nd</sup> or 3<sup>rd</sup> week) to review the progress in the work. WMO Secretariat will organize a doodle pool to decide the date in early November 2016

The meeting closed at 17:30 on Monday 19 September 2016.

## LIST OF PARTICIPANTS

<b>AUSTRIA</b>	
Josef EITZINGER Institute of Meteorology Working Group on Agrometeorology Department of Water, Atmosphere & Environment University of Natural Resources & Applied Life Sciences Peter- Jordan Str. 82, A1190 VIENNA	Tel.: +431476545622; Fax: +431476545610; Email: <a href="mailto:Josef.eitzinger@boku.ac.at">Josef.eitzinger@boku.ac.at</a>
<b>GERMANY</b>	
Dr. Hermann Mächel KU23 Regionale Klimaüberwachung Deutscher Wetterdienst Frankfurterstr. 135 63067 OFFENBACH AM MAIN	Tel: +49 69 8062-2413 Fax: +49 69 8062 3759 Email: <a href="mailto:Hermann.Maechel@dwd.de">Hermann.Maechel@dwd.de</a> Twitter: <a href="http://www.twitter.com/dwd_klima">www.twitter.com/dwd_klima</a>
<b>ITALY</b>	
Silvano PECORA ARPAE SIMC - AREA IDROLOGIA Via Garibaldi, 75 43121 PARMA	Tel.: +39 0521 274378 Fax: +39 0521 774056 E-mail: <a href="mailto:specora@arpae.it">specora@arpae.it</a> Web: <a href="http://www.arpae.emr.it/sim">www.arpae.emr.it/sim</a>
Mr Giuseppe RICCIARDI ARPAE Via Garibaldi 15 43121 PARMA	Email: <a href="mailto:gricciardi@arpae.it">gricciardi@arpae.it</a>
<b>NETHERLANDS</b>	
Mr Eric SPROKKEREEF Rijkswaterstaat Traffic and Water Management Water Management Centre Netherlands Zuiderwagenplein 2 8224 AD LELYSTAD OR Postbus 17 8200 AA LELYSTAD	Cell: +31653649414 Email: <a href="mailto:eric.sprokkereef@rws.nl">eric.sprokkereef@rws.nl</a>
<b>SPAIN</b>	
Mr Ernesto RODRIGUEZ CAMINO Agencia Estatal de Meteorología (AEMET) P.O. Box 285 28071 MADRID	Tel: +34 91 5819 869 Fax: +34 91 5819 767 Email: <a href="mailto:erodriguezc@aemet.es">erodriguezc@aemet.es</a>
Mr José GUIJARRO AEMET Delegación Territorial en Illes Balears Jefe de la Unidad de Estudios Meteorológicos del Mediterráneo Calle Muelle de Poniente S/N 07015 PALMA DE MALLORCA Illes Balears	Tel. (+34) 971145409 Email: <a href="mailto:jguijarrop@aemet.es">jguijarrop@aemet.es</a>  <a href="http://www.aemet.es">www.aemet.es</a>



**SWEDEN**

Ms Cristina ALIONTE EKLUND Manager International Cooperation Professional Services, Capacity Development SMHI / Swedish Meteorological and Hydrological Institute Folkborgsvägen 17 SE - 601 76 NORRKÖPING	Tel: +46 (0)11 495 86 74 Cell: + 46 707 65 29 58 Email: cristina.alionte.eklund@smhi.se
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**UNITED KINGDOM**

Dr Harry DIXON Senior Hydrologist NERC Centre for Ecology & Hydrology Maclean Building, Benson Lane, Crowmarsh Gifford, Wallingford, Oxfordshire, OX10 8BB	Direct Dial: +44 (0)1491 692254 Switchboard: +44 (0)1491 838800 Email: harr@ceh.ac.uk
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**WMO SECRETARIAT**

Mr Tommaso ABRATE Scientific Officer 7 Bis Avenue de la Paix CP 2300 1211 GENEVA 2 Switzerland	Tel: +41 22 730 83 38 Email: tabrate@wmo.int
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