

**WORLD METEOROLOGICAL
ORGANIZATION**

COMMISSION FOR CLIMATOLOGY
OFFICE OF THE PRESIDENT



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President

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MONDIALE**

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GENEVA, 17 March 2011

Annex: 1

Subject: Circular Letter No. 2 of the President of CCI

Dear Colleagues and Friends,

I am pleased to send you the second circular letter of the current intersessional period. While I prefer focusing on accomplishments, we are early enough into this intersessional period that I thought it would be appropriate to briefly discuss CCI plans as well. Also, to continue to show the human side of CCI, I will briefly introduce you to two of our key volunteers. And lastly, I'll touch on a little bit of CCI-related recent science that you may find interesting.

Yours sincerely,

(Thomas C. Peterson)
President
Commission for Climatology

To: Members of the Commission for Climatology
Members of the CCI Management Group and OPACEs

cc: Presidents of technical commissions)
Presidents of regional associations)
Chairpersons of regional associations' working groups) (for information)
and regional associations' rapporteurs dealing with)
CCI-related matters)



1. Organization of CCI and this letter

CCI is organized into 4 panels or OPACEs. In addition there are a few cross-cutting teams that report to the CCI Management Group which Vice-President Serhat Sensoy coordinates. This letter follows this organizational outline, briefly highlighting a few key accomplishments and plans.

2. OPACE I on Climate Data Management co-chaired by Song Lianchun (China) and William Wright (Australia)

Climate Database Management Systems (CDMS) Expert Team met and agreed upon its main tasks: assessing functionality of existing CDMSs and monitoring new functionality; developing guidelines for incorporating data and metadata (including from Automatic Weather Stations) into CDMS; working towards establishing standards and interoperable systems; reviewing capacity development activities in relation to CDMS implementation; and making recommendations for training in CDMS and basic climatology.

The Task Team on Data Rescue plans to develop the data portal based on the approach used by Mediterranean climate data rescue (MEDARE) initiative. The team also has a requirement to define best practices in data rescue.

OPACE I co-chair Bill Wright attended GCOS Atmospheric Observation Panel for Climate meeting in Geneva in February. The meeting found his presentation on the issues associated with automating observing sites informative and useful. GCOS agreed to take action on the CCI request for monitoring CLIMAT messages from the entire Regional Basic Climate Network (RBCN) in addition to subset of RBCN that are also GCOS Surface Network stations which they currently monitor, as well as automate the production of CLIMAT messages in CDMS's. This functionality could potentially provide a means of easily updating the World Weather Records, a global once every 10 years data collection and coordination activity (see item 11). In addition, GCOS agreed to have their Lead Centers encourage the submission of CLIMAT messages from Regional Basic Synoptic Network stations, and to encourage their Lead Centers to provide regular updates to World Weather Records.

The Normals initiative was rescoped, but OPACE I still leads it. Current expectations recommendations are to define a 1981-2010 base period for operational Normals as these dates encompass the era of satellite data, while still retaining the 1961-90 Normals.

3. OPACE II on Climate Monitoring and Assessment co-chaired by Fatima Driouech (Morocco) and Manola Brunet (Spain)

The Joint CCI/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices held a teleconference to discuss its work plan. Then when it met in Victoria, British Columbia, Canada in February 2011 it was already well on its way. One of the activities this team engages in is organizing climate change workshops. One workshop was held and two more are planned if the funding proposals are successful. See Section 5 on OPACE IV for more information on the workshop that was held and Section 8 on the President's activities for more information on the workshop proposals.

The Task Team on Definitions of Extreme Weather and Climate Events was created in response to queries about what exactly is an extreme. The team has held a telecom and developed a work plan which includes producing about a five page well illustrated document that answers that question.

The Rapporteurs of World Weather and Climate Extreme Records have been busy. Their paper on Australian tropical cyclone Olivia's world highest wind gust record has been submitted to a scientific journal. Their assessment of a potential new world record hailstone that occurred in the United States is awaiting one more piece of evidence but expects to conclude that the new hailstone was not larger than the current world record for the heaviest record of a hailstone weighting 1.02 kg which fell on 14 April 1986 in the Gopalganj district, Bangladesh, which the rapporteurs concluded was a valid observation. Most recently they have set up a team to revisit the world's hottest temperature ever measured by a meteorological instrument in El Azizia, Libya in 1922. This record has always been controversial and the team has been assembling all the relevant data and metadata they could locate with a great deal of collaboration with relevant agencies.

The Task Team on National Climate Monitoring Products is off to a good start. Their quest is to recommend a few national climate monitoring products that countries across the globe could produce on a regular basis. If all countries followed the exact same definition (e.g., temperature anomalies from a specific base period), their results could be easily compared. As a first step they have sent a questionnaire to all WMO Members asking what climate monitoring products they currently produce and have so far received responses from 40 countries. If you are interested, the results are available from the team's web site: http://hadobs.metoffice.com/opace2_tt_ncmp.

4. OPACE III on Climate Products and Services co-chaired by Kiyoharu Takano (Japan) and Jean-Pierre Céron (France)

OPACE III is charged with guiding the evolution of the Climate Information and Prediction Service (CLIPS) towards the Global Framework on Climate Services and on the Global Seasonal Climate Update (GSCU). GSCU are consensus-based seasonal forecasts. In order to facilitate the scoping and development of GSCU, an international expert meeting was organized, under the auspices of both CCI and the Commission for Basic Systems (CBS), in October 2010 in Geneva. CCI has formed a Task Team on GSCU to lead the follow-up activities, including a pilot phase, to build, demonstrate and implement the GSCU on a sustainable basis. This task team met after the scoping workshop. The team should have a zero order draft of a document detailing GSCU ready for the June 2011 WMO Executive Council (EC) meeting. The first order draft will then be discussed in light of the expected feedback from the EC, and the pilot phase for approximately 1 year should lead to an operational production of the GSCU. What is still unclear is the final form and the update basis, that is, whether it will be monthly or quarterly.

The Task Team on CLIPS Evolution also had a meeting and that report should be ready soon as well. Documents on the CLIPS evolution are moving forward. OPACE III co-chairs are quite confident that they can guide the progressive evolution of CLIPS toward its expected target with some materials ready in time for the June EC meeting.

Regional Climate Centers (RCC) are likely to also be a key component of the GFCS, so OPACE III will need to be able to take concrete actions to help the RCCs achieve their potential. Work on RCC matters has already commenced, including creating a document on the present state and future plans for RCCs in the different Regional Associations, a Guideline on the establishment of WMO Regional Climate Centres and also a brochure on RCCs. This work is being undertaken by OPACE III's Expert Team on Regional Climate Centers which is joint with the CBS. The team's action plan also includes carrying forward the designation process of RCCs and holding a joint workshop with Asian-Australian Monsoon Panel. I should note that OPACE III co-chair Kiyoharu Takano is the coordinator of the Regional Association II Sub-Group on Climate Applications and Services and this subgroup met in Daegu, Republic of Korea an late November – early December 2010.

Lastly, OPACE III has started some preliminary discussion on issues associated with communication. In light of these discussions and related experiences, they realized that communicating the science is a very important part of climate services. As a result, they are likely to propose a task team on this topic, perhaps in collaboration with OPAC IV and indeed have already started drafting appropriate terms of reference which would lead to concrete deliverables.

5. OPACE IV on Climate Information for Adaptation and Risk Management co-chaired by Rodney Martinez (Ecuador) and Albert Martis (Curaçao)

In collaboration with OPACE II co-chair Manola Brunet, OPACE IV co-chair Rodney Martinez (both pictured on right) hosted a Training Workshop on Statistical Analysis of Climate Extremes for South America. The workshop was attended by 15 participants from Argentina, Brazil, Bolivia, Chile, Colombia, Ecuador, Paraguay, Peru, Surinam, Uruguay, and Venezuela. It was hosted by Centro Internacional para la Investigación del Fenómeno de El Niño (CIIFEN) in Ecuador. An Action Plan for the upcoming 18 months was agreed upon which included coordinating the analysis of climate change indices for many stations in South America following the OPACE II Expert Team on Climate Change Detection and Indices approach. A key milestone on the action plan is the production of a peer-reviewed scientific article documenting how extremes are changing across South America.



Rodney Martinez also participated in the first meeting of the Commission for Basic System's Task Team on Meteorological Services for Improved Humanitarian Planning and Response in Geneva in late August - early September 2010. This meeting provided valuable insights to incorporate into the work plan of the Task Team on User Interface when it meets in the first half of 2011. However, team members are already working in their contributions to be discussed at the meeting. Indeed, all the Terms of References for OPACE IV's teams have been discussed and agreed upon by the team members and the leaders. The participation of

the Task Team on Climate Risk Management in a seminar on climate risk is under discussion. The dates for the seminar are not set yet, but the OPACE co-chairs anticipate OPACE IV making a significant contribution to the seminar.

6. The Vice-President and Teams reporting to the CCI Management Group which are coordinated by CCI Vice-President Serhat Sensoy (Turkey)

The CCI Vice-President played a central role in organizing the International Climate Application Course which was held in the WMO Regional Training Center in beautiful Alanya, Turkey in June 2010. Participants from climate services of Turkey, Jordan, Iraq, Croatia, Romania, South Africa, Thailand, Bulgaria, Kazakhstan, Hong Kong, and Lebanon attended to the course. Participants were trained in monthly and seasonal climate analyses, annual climate assessment, climate classifications, climate indices, heating and cooling degree days analyses, and ArcGIS usage in climate applications. According to a questionnaire filled out by the participants, they were very happy with Turkish hospitality as well as the knowledge, practices and tools learned during the course which they want to apply to their services when they returned to their countries.



Another climate application course has been planned for October 2011 at the same facilities. This time, in addition to the first course's topics, statistical regional climate modeling has been added to the course content.

These kind of courses are effective capacity development activities. Expanding such capacity development activities will likely be an important part of the Framework on Global Climate Services (GFCS). To help gear up for that, the CCI Expert Team on Strategy for Capacity Building for Climate Services, which reports to the Management Group, is getting organized and has not yet produced a work plan.

7. The President's corner

Since my previous circular letter in August of last year, I have given 19 presentations on climate and climate change in venues ranging from my nephew's middle school to the halls of the U.S. Congress. Most notably from a CCI perspective, I participated in the UK workshop on creating surface temperature datasets along with OPACE II co-chair Manola Brunet; the meeting of the Presidents of WMO Technical Commissions; the meeting of the WMO Executive Council's Working Group on Climate and related Weather, Water and Environmental Matters; OPACE II's joint Expert Team on Climate Change Detection and Indices meeting and the Global Climate Observing System (GCOS) Steering Committee's Eighteenth Session, though that last one had to be done remotely.

I have also submitted two proposals for U.S. Voluntary Contribution Program funds to support ETCCDI workshops. The first proposal, written primarily by Manola Brunet (Spain) and Fatima Driouech (Morocco), OPACE II's co-chairs, would support a workshop for countries across northern Africa and into the Arabic peninsula. The second proposal, primarily written by Michael Taylor (Jamaica) would support a workshop in the Caribbean.

8. Profiles of two volunteers

OPACE III's domain is officially described as Climate Products and Services and their Delivery Mechanisms. It has one expert team on Regional Climate Centers and two task teams related to seasonal forecasting. Clearly much of the products and services OPACE III focuses on are related to delivering seasonal forecasts. So we are fortunate to have two experienced seasonal forecasters serving as co-chairs of OPACE III:

Dr. Kiyoharu Takano studied dynamic meteorology at the Graduate School of Sciences of Kyushu University, Japan. After he joined the Japan Meteorological Agency (JMA), he worked on the development of dynamical methods for one month and seasonal forecasts, which JMA currently uses operationally. He was also an operational seasonal forecaster with experience of dialogue with users.



Dr Jean-Pierre Céron, of Météo-France, has a long history of seasonal forecasting and providing important climate services. Topics addressed in papers he has authored or co-authored include assessing the feasibility and prospects of hydrological seasonal forecasts over France and diagnosing the intraseasonal oscillations in 15 global climate models as well as adapting to climate variability and change from the climate outlook forum perspective.

9. Surface Temperature Initiative

Following the CCI XV endorsement of a UK proposal, the International Surface Temperatures Initiative (www.surfacetemperatures.org) was launched at a meeting at the UK Met Office in September 2010. To meet the requirements placed on climate science in the 21st Century, it is necessary to create a suite of high quality and high resolution data-products, with openness, transparency, verification, and user tools. These would aid decision making at national and international scales and inform adaptation strategies. Crucially, this Initiative is international and interdisciplinary – as such, the meeting was attended by climate scientists, statisticians, metrologists (that is not a typographical error in writing meteorologist, a metrologist is an expert in precision measurements of any type) and software engineers from around the world. The workshop was co-sponsored by CCI.

Attendees agreed to work towards: data rescue and digitization; an open, transparent and comprehensive databank with versioning and provenance tracking; a data-portal for multiple products estimating local, regional and global scale changes; common benchmarking and assessment evaluations; and platforms for data download, intercomparison and visualization solutions. Thus far, through a series of working groups, efforts primarily have been made towards a first version of the databank including the release of data which are traceable back to the hardcopy image where possible. Crowdsourcing of digitization of data available only as images is being actively pursued. Early steps towards the creation of a benchmark are being undertaken. Much work remains to be done and the Initiative's steering group strongly encourages active participation by all WMO Member States in any or all aspects of this essential work. These could include, but are not limited to: data provision, data-product creation, data serving and visualization, or general initiative advocacy. For more information, email: general.enquiries@surfacetemperatures.org

10. Crowdsourcing: A new approach to digitizing data

In July 2007, some astronomers tried to enlist citizen scientists over the internet to help them classify the myriad of new galaxies that the Hubble space telescope was imaging. They expected a few dozen people to get involved but were overwhelmed by the response: almost 150,000 people contributed in the first year of the Galaxy Zoo project. The Galaxy Zoo effort is now expanding into a whole Zooniverse of projects which, as of pi day 2011 when I am writing this, has 398,483 volunteers. (In the U.S., the 14th of March is sometimes called pi day because when written 3.14 it is the value of pi.) To put this citizen scientist participation into perspective, it is about twice the population of OPACE IV's co-chair Albert Martis' entire country and dwarfs CCI's 215 volunteers.

The first effort to harness "crowdsourcing" as this is called to digitize weather data is the Zooniverse project www.oldweather.org. Old Weather digitizes UK Navy ship logs taken during World War I. Started in October 2010, six months later it is 50% complete with 381,644 pages of log books digitized by multiple volunteers, that is, each data point is typed in by several people as a quality assurance measure. Colleagues and I are in discussions with the Zooniverse team about digitizing volumes of old international data that have already been imaged and made available by the NOAA's library. See http://docs.lib.noaa.gov/rescue/data_rescue_home.html for all the potential data that are available mainly from the late 1800s through the mid 1900s. Unfortunately, like all good ideas, turning this into a reality takes resources which we haven't yet been able to locate. But it is clear that harnessing the power of the internet and citizen scientists has the potential to be a very cost effective way to digitize historical records.

11. World Weather Records

World Weather Records, a collection of monthly climatic data from land surface stations worldwide, has been the core of all long-term global surface temperature datasets since it was first released in 1927. CCI continues to coordinate decadal updates to World Weather Records. My institution, NOAA's National Climatic Data Center, has volunteered to lead the current update. However, given the recent increased attention to global climate change issues and the fact that the previous decade's edition lacked data for many countries posing an impediment to climate monitoring and assessment activities because of the decline in station coverage starting in 1991, the call is going out to WMO Members to provide this

Tenth Edition of World Weather Record with data for the last two decades, 1991-2010. See World Data Center for Meteorology, Asheville, www.ncdc.noaa.gov/oa/wdc/ for details.

12. CCI-related science: Human causes for the increases in more-intense precipitation extremes

For years CCI has been involved in helping countries and the world assess how weather extremes are changing primarily through the activities of the joint CCI/CLIVAR/JCOMM Expert Team on Climate Change Detection and Indices (ETCCDI). When it comes to precipitation, one of the features the team has been able to document is the wide-spread increases in heavy precipitation. Now in a peer-reviewed scientific paper published in *Nature* in February, four scientists, three of whom are CLIVAR members of the ETCCDI (Xuebin Zhang (Canada), Francis Zwiers (Canada) and Gabriele Hegerl (UK)), have, for the first time, formally linked this increase in heavy precipitation to human activities. Using indices of extreme precipitation developed and coordinated by the ETCCDI, they showed “that human-induced increases in greenhouse gases have contributed to the observed intensification of heavy precipitation events found over approximately two-thirds of data-covered parts of Northern Hemisphere land areas.”

13. Upcoming CCI Management Group meeting

To keep our momentum going, the CCI Management Group has decided to meet again in October 2011. The venue chosen is Denver, Colorado, USA and timed to occur during the World Climate Research Program (WCRP) Open Science Conference (www.wcrp-climate.org/conference2011/) on Climate Research in Service to Society. At CCI XV last year, we saw the value in collaborating with WCRP. This venue should help foster continuing interactions between CCI and WCRP.