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The Climate Services Partnership (CSP) is a platform for knowledge sharing and collaboration to advance climate service capabilities worldwide. CSP members are climate information users, providers, donors, and researchers; though they represent diverse interests, all are actively engaged with climate services through their own programs and activities. Partners collaborate to develop and improve climate services; they also learn from each other by sharing resources and experiences. The CSP creates a venue to generate new knowledge, establish best practices, and promote a resilient, sustainable, and climate-smart future. More information is also available on our website: www.climate-services.org.

The CSP newsletter is a quarterly publication meant to keep all informed of the latest updates of the partnership community. We rely on you for news of your activities, upcoming events, and recent publications. Please send all material for the next newsletter to Cathy Vaughan at cvaughan@iri.columbia.edu by **September 15, 2014**.

Editorial board: Allyza Lustig (IRI), Cathy Vaughan (IRI), Steve Zebiak (IRI)

el niño 2014 provides a moment of opportunity

an editorial from the CSP secretariat

As of late June, there are indications of an emergent El Niño episode. The majority of forecast models suggest the development of a weak-moderate El Niño event over the next season or so. The outlook is not certain, but I would like to suggest that this circumstance provides an opportunity for reflection, learning, and collective action that can contribute both to the knowledge and practice of climate services worldwide.

A bit of background on El Niño: As most readers of this publication will know, El Niño refers to episodic warming events in the tropical central and eastern Pacific Ocean. These oceanic warmings are accompanied by major disruptions in the tropical Pacific atmosphere, including an eastward expansion/migration of the region of heavy precipitation (from the far-western Pacific to the central or even eastern Pacific in extreme cases); the reduction or even reversal of the trade winds over much of the basin; and, significantly, perturbations in global-scale circulation patterns that affect weather patterns throughout many regions of the globe.

The sequence of warming and cooling events that takes place over roughly 2-to-7-year intervals is known as the El Niño/Southern Oscillation, or ENSO. ENSO represents the most prominent pattern of variability of the Earth's climate in the seasonal to interannual time frame. It is highly significant not only for the geographic and temporal (multi-season) scope of its impacts, but also because these impacts can in many cases be anticipated months to seasons in advance.

ENSO holds a special place in the history of climate services. Research on ENSO led to the first successful efforts to demonstrate the predictability of seasonal climate – in fact, the first seasonal predictions were based on El Niño. The resulting advance of seasonal climate forecasting has provided strong motivation, as well as valuable new information, to the development of climate services.

El Niño – this year, or whenever it next manifests – creates several opportunities for climate services. First, it represents a teaching moment. El Niño events capture global attention in a way that perhaps no other climate-related events do. Media increasingly covers El Niño episodes, raising public awareness of our variable climate, our ability to anticipate impacts, and the potential for both information and services to help manage those impacts. In this sense, El Niño provides an opportunity for climate service providers to ask ourselves if we're making the best use of this teaching moment.

Second, there is simply more information about the climate available during El Niño episodes than at other times. While the number of climate extremes such as floods and droughts do not obviously increase during El

Niño years, the number of these that can be anticipated does. That means there are more opportunities to provide useable information and services, and more potential for uptake of information and services, associated with an El Niño occurrence.

Given this, it's important that we as the climate services community ask ourselves what might we do to capture this opportunity? Here are a few ideas:

Get our messages straight. There are many organizations developing information on El Niño for purposes of general outreach, and for more targeted climate services. We might consider bringing these groups together to discuss messaging around the interpretation of current events, the communication of probabilistic information, and the way this information can best be incorporated into decision making.

Set information protocols. The evolving situation in the Pacific provides a good moment to explore the use of some specific formats, indices, and presentations of El Niño information that could lend consistency to what is being communicated.

Assess our tools. As in the past, the occurrence of El Niño will provide a fitting occasion to review the performance of the basic systems that underpin current climate information services generally – the elements of climate observing systems, models and forecast systems, and related information products. We will benefit from an assessment of current capabilities, gaps, and priorities for new investment.

Learn from experience. Perhaps most significantly, the increased activity during El Niño gives us the chance for an uptick in our learning about how to put climate services in action. With some concerted effort we could aim to capture information on many aspects of climate service practice – for example, how information is translated, what parties are involved in what capacity, and if/how information was used in practice. It would be worthwhile targeting some specific service activities for detailed case studies, to assess process, products, and experiences/outcomes in use of services.

Within the CSP community, a discussion of the next El Niño and possibilities for useful collaborations has already begun. We are anxious to build on this, and we invite all who have ideas and interest to get involved. Let's use this occasion to demonstrate climate services – or better yet, to demonstrate good practices in climate services. The time to begin planning is now, whether or not El Niño indeed arrives in 2014.





Guy Brasseur helped to establish the Climate Service Center in Germany in 2009 and led the group as director for five years. Here he talks with us about lessons learned and plans for the future.

As you wind up your five-year position as the director of the Climate Service Center, can you reflect on your time there?

When we started there were no climate services established – we had to invent. We've learned a lot in these 5 years, and I've got several thoughts.

First, when we started, government officials told us that eventually the CSC would be self-sustained by its product. It became clear that that was not the case; the market for climate products did not exist. Everyone in Germany recognized the importance of the climate problem, but in the area of adaptation, a big learning process was needed – marketing, so to speak, and fostering a sense of awareness. This involved a lot of discussion with potential users, and we have a few interesting examples of success.

One I like to cite is the relationship we established with an investment bank. This was a sector already thinking on long timescales. But at the beginning they were not so interested in working with us. We started by providing services for free, and even then it was difficult to convince management that our work together should continue. In the end, though, we had a good relationship, and we developed a number of fact sheets for them on past, present, and future climate for regions of the world where they were working.

So what is the lesson here? In order to establish a relationship with customers regarding climate services, you need a "dating period" to establish trust between users and scientists. Dialogue is very important, as is broad communication. They had views and requirements that we sometimes didn't understand – we had to learn. We also realized that although we were giving them information about regions of interest, the bank needed to create relationships with scientists working locally. In that sense, our business is complicated: We target users with different needs and requirements. We're not like a company that produces one or two products in mass – rather, we work on the small-scale production of number of products.

There is also an issue with timescales. The scientific community may be focused on long-term changes but the users need short-term information. They are thinking about seasons, weather, and extreme events. These are questions that are very difficult to answer. The investment banks are an exception, but most – tourism, agriculture, forestry, transit – all want information on the weather or seasonal scale. I say this a lot – in reality they

ask us a question that we cannot answer, and they are not interested in the questions we can answer.

Another lesson is that we must stay close to science. Climate services must be close to meteorological services, at least in terms of data analysis and modeling. On the other side, when we think about vulnerability, resilience, and adaptation, we need to be close with social scientists, political scientists, and economists. The big challenge is to bring those groups together.

What about next steps for you – where do you plan to focus your work moving forward?

Well, one other thing I've learned over the years is that if you want to solve problems of climate, people need to be more educated on this issue than they are today. I'm working to establish the Earth Academy – an international capacity-building organization engaged in these issues from different perspectives. We aim to find new ways to educate people who will become responsible for making others aware of these problems, especially in the developing world but also in the US and Europe. We're coming up with a structure for this, which involves three aspects: face-to-face events with potential leaders, e-learning tools, and a network of young fellows. Funding would come from members, foundations, and funding agencies. Anyway, we have had a lot of positive reactions so far.

Let's talk about the ECSP – what are the goals there?

Well, we created the CSP on a global level, but of course the emphasis can be different from continent to continent. In Europe there are a number of regional initiatives in place, though those are very top down. So, we invited about 200 people to attend the ECSP meeting in Hamburg about 2 months ago – providers and users should be working together. We discussed a number of topics, including that we should give a clear picture to the users and things should be coherent. For example, there shouldn't be 300 similar websites where users get lost. We will also make suggestions to the global CSP – so far so good, and people are enthusiastic.

Now let's talk more generally. How do you see climate services evolving in the next 5-10 years?

We still have a relatively long way to go before the concept of climate services has been established. First, we are just starting to know who the customers are and what kind of information they want. We also don't know how we will bring the physical and social sciences together. And, we still have a long way to go in terms of funding. There are good signs, though. In Europe, for example, you see the Copernicus project at ECMWF. That database will be very useful, but of course its only one part of climate services. Integration with users must be established.

Things will take time but I'm optimistic. I'm optimistic because the community knows that science for society is very important. Of course fundamental science should not go away because there can only be good application with good research. The community will need to unite itself more but if you look at what's gone on in the past five years, the landscape has changed dramatically. I hope that we can structure this program worldwide and make it work in a coherent way. We must ensure quality, ethics, etc. and that can only be secure if we work at the international level.

community spotlight

a conversation with **Kinfe Hailemariam, Ethiopia National Meteorological Agency**



Kinfe Hailemariam of the Ethiopian National Meteorological Agency talks with us about his work and its connection to climate services.

Please describe your work at Ethiopia's National Meteorological Agency?

I am working to expand modern meteorological observing systems. The National Meteorological Agency (NMA) first introduced an automatic weather station (AWS) in 2010, and we are now running over 100 of them. We have a plan to increase the number to 200 in the coming year – this is a transition of our climate monitoring to a modern system. We also installed over 11 low-cost satellite receiving ground stations at our branch offices and NMA will install its first operational weather radar in this year. We also plan to install a network of lightening-detection stations. Climate monitoring is the basis for all climate services, and the NMA is determined to modernize its observational system.

I am also coordinating a project that delivers farm-level climate services in five districts of Tigray state in northern Ethiopia. Under this project we install AWS and plastic rain gauges, prepare climate guides, train farmers and intermediates on the use of climate information for decision making, and deliver localized climate and agro-climate advisories. This definitely increases agricultural productivity and it's an example of grassroots climate services, which should continue to be scaled up. The blend of satellite and ground observations helped NMA to provide more reliable and localized climate services – I consider this and the commitment of the middle and top management to improve climate services in Ethiopia as the main strength of NMA, among many others.

How do climate change and variability affect Ethiopia? As a rain-fed agrarian country, Ethiopia is highly affected by climate variability and change. Drought and flood are the two major climate threats, drought being the most prominent. However, with improved climate services, and especially with the improvement of seasonal climate prediction, we can avert

disasters due to drought. This is a major advance in comparison to our capacity just a few decades ago. NMA seasonal predictions have informed decision making at all levels and thus enabled the mitigation of extreme events. This includes deployment of agricultural inputs such as fertilizer, rainwater harvesting, emergency operation, and the like. In terms of longer-term strategic decisions, climate services have been useful in planning ahead of disaster, including planning for settlement and long-term agricultural investment.

What do you see as the largest challenges to the development of climate services in Ethiopia?

With climate change, extreme events such as drought and flood are expected to be more frequent. In pursuit of climate-resilient economic growth, climate services must be redesigned in such a way that enables end-users make the strategic and tactical decisions. For that to happen, extensive capacity building is required both in infrastructure and human resources in developing countries like Ethiopia. With the current capacity, it is practically impossible to cope with climate variability let alone effectively implement climate change adaptation. This limitation in capacity is a big challenge, which, in my view, is not being properly addressed at all levels. Given the current capacity of NMA and the scientific community's ability to deliver localized and reliable forecasts, meeting ever-growing and diverse user demands for climate services will be a challenge for time to come.

Climate monitoring is the basis for all climate services, and the NMA is determined to modernize its observational system.

What are the goals for the future for the Ethiopian Met Service?

To be a world-class meteorological service by 2022 and benefit the country's transformational growth.

What is your favorite part of your work?

Providing localized, user-tailored climate services, especially to the farmers. For this to help the end-users, good monitoring station coverage, advanced analysis and predication tools, and efficient dissemination mechanisms must work in a synchronized manner. I work with great pleasure to contribute to the modernization of observations and the blending of different datasets.

European Climate Services Partnership (ECSP) kick-off workshop

The ECSP kick-off workshop was held in Hamburg, Germany in May. The workshop was attended by over 60 representatives from organizations involved in climate service development and delivery across Europe.

The one-day workshop opened with a series of introductory presentations. Guy Brasseur provided a summary of climate service developments over the last 10 to 15 years, with a focus on activities and initiatives taking place within Europe. Claus Brüning of the European Commission discussed the aims of the commission with regard to climate service development, including future activities and funding opportunities. Finally, Chris Hewitt, from the UK's Met Office, introduced the concept of a European Climate Service Partnership based on the CSP model; he also discussed the purpose and scope of the ECSP, its structure and membership, and the importance of joining and adding value to climate service activities across Europe. The overarching, informal coordination mechanism of the ECSP will ensure that Europe has coordinated international reach through the CSP.



Photo credit: Flickr, Ana D.

The attendees were then divided into breakout groups to discuss the focused topics of: market development for climate services; best practices and quality control; risk management; and climate communication and networking. Based on the conclusions that emerged, the wrap-up session discussed next steps and actions for the ECSP and focused on developing working groups and appropriate activities in the above key areas, including the organization of a workshop later in the year on climate information provision. An agreement was also made on the initial ECSP governing structure and steering group.

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North American Climate Services Partnership (NACSP)

The NACSP is an innovative trilateral partnership between the US, Mexico and Canada. This partnership was established to respond to an increasing demand for accessible and timely scientific data and information in order to make informed decisions and build resilience in our communities.

The NACSP is made up of several new and existing activities related to climate service delivery at multiple scales and in several key areas: (1) core capabilities and products related to forecasting and modeling that cover the North American continent (weather and seasonal-scale ensemble forecasts, precipitation); (2) sector-specific issues (drought, wildfires); and (3) regional pilot areas (Great Lakes, Rio Grande-Rio Bravo). In order to support an integrated approach to the production, delivery and use of relevant climate data and information, the NACSP will strengthen linkages across these separate activities and foster the development of key partnerships with users and stakeholders.

A four year (2013-2017) NACSP Strategy and Work Plan was recently released, and can be downloaded from the new NACSP website, below.

Established by the national meteorological services in 2012, participation in this transboundary partnership is open to other organizations. NACSP represents a contribution to the implementation of the Global Framework for Climate Services. Read more here on the new [NACSP website](#).



Left to right: David Grimes (Environment Canada's Meteorological Service), Laura Furgione (US National Oceanic and Atmospheric Administration), and Juan Manuel Caballero (Mexican Meteorological Service) at a meeting of the NACSP.

Photo credit: NACSP



Photo credit: Elisabeth Gawthrop



updates from the csp

Fourth International Conference on Climate Services: ICCS 4

The CSP is very pleased to announce that the fourth International Conference on Climate Services is scheduled for **December 10-12 in Montevideo, Uruguay**. December 9 will be reserved for side events.

The conference will be hosted by Uruguay's Ministry of Livestock, Agriculture, and Fisheries, in conjunction with the World Bank. The theme will be Decision Support Systems, which we plan to explore from various angles. We're also hoping to use this opportunity to explore a number of issue areas, including the management of grasslands and the evaluation of climate services.

As always, we are eager to hear your thoughts and ideas and to work with you to ensure that the conference is stimulating, productive, and fun. With specific recommendations, or to join the ICCS organizing committee, please reach out to Cathy Vaughan at cvaughan@iri.columbia.edu. Please also keep your eye on our newly minted ICCS 4 page, which can be found here: <http://www.climate-services.org/iccs/iccs-4>. We'll be sure to keep the site up to date as more information becomes available.

CSP Early Career Professional Network

The CSP is launching its Early Career Professional Network (ECPN), which offers networking and professional development opportunities for early career professionals in the field of climate services. Some of the activities of the CSP ECPN will include:

- [LinkedIn group page](#): A virtual space for ongoing conversation, planning, and announcements. The page allows members to learn more about others in the ECPN, meet new faces, and keep in touch with established connections.
- [Conference meet-ups](#): The ECPN encourages its members to meet in person when possible, often at conferences, workshops, etc. Planning for these meet-ups will take place via the group's LinkedIn space.
- [Virtual Meet & Greets](#): These short webinars provide members with a space to present their work and constructively discuss with peers from throughout the ECPN community.

The **first Virtual Meet and Greet** will take place on **Wednesday, July 16 at 10am NY** and will feature Shelly-Ann Cox (Caribbean Institute for Meteorology and Hydrology) and Marisol Osman (Center for Oceanic and Atmospheric Research, University of Buenos Aires). For more information, please contact Allyza Lustig at arlustig@iri.columbia.edu.

Working Group Round Up

The **Working Group on Climate Service Ethics** met in Loughborough, UK in early June, and has drafted a paper that will be circulated for comments in the near term. For more information, contact Steve Zebiak, steve@iri.columbia.edu.

Keep your eyes peeled for a survey issued by the **Research Priorities Working Group**, which is trying to gauge community perspectives regarding where we should focus research efforts in order to advance climate services. For more information, please contact Lawrence Buja, southern@ucar.edu.

The **Economic Valuation Working Group** met in Boulder in April/May and has put together a first draft of book that is expected to be published, in conjunction with the World Bank and the World Meteorological Society late April/early May, by the end of the year. For more information, please contact Glen Anderson, glen.anderson@engilitycorp.com.

GFCS: national and regional implementation
World Meteorological Organization (WMO). National consultations were held in Senegal (March 26-28), the United Republic of Tanzania (May 7-9), and Malawi (June 9-11) to identify gaps and needs, and to establish the internal coordination mechanisms needed to ensure effective implementation of the Framework at the national level.

The national consultations held in the United Republic of Tanzania and Malawi, as part of the GFCS [Climate Services Adaptation Program in Africa](#), agreed on the creation of permanent mechanisms to strengthen dialogue between weather and climate service providers and a wide range of stakeholders. The Climate Service Adaptation Program is the first multi-agency initiative to be implemented under the GFCS and aims to build resilience in disaster risk management, food security, nutrition, and health.

A new initiative to implement GFCS in the Sahel is being launched, directly contributing to the United Nations strategy for the region. The initiative will benefit from the support from the Norwegian Refugee Council with deployments of experts to the Sahel.

Consultations for climate services will be held in Dominica on August 12-13 and a [Regional Workshop on Climate Services at the National Level for Latin America](#) will be held on July 28-30 in San Jose, Costa Rica to facilitate the identification of priorities for the implementation of the GFCS in the region.

For further updates please visit:
<http://www.gfcs-climate.org/>

CCAFS participation in WMO Tanzania consultation
Climate Change, Agriculture, and Food Security (CCAFS). As a key partner, CCAFS participated in a national consultation meeting in Tanzania for the WMO-led Climate Services Action program, working to implement the Global Framework for Climate Services, 7-9 May 2014. The workshop convened over fifty climate scientists, researchers, practitioners, farmers and national policy-makers from across the agriculture, health and disaster risk reduction sectors. They discussed climate service needs in the country and agreed on a plan to scale up climate services for users. The meeting was a dialogue that brought climate scientists face to face with potential users of climate information and services, and built common ground among them, enabling them to develop a shared understanding and craft a joint agreement on how to work together to make climate services useful for vulnerable communities in Tanzania.

Read more: <http://ccafs.cgiar.org/blog/scaling-climate-services-tanzania>
<http://ccafs.cgiar.org/blog/strengthening-availability-and-use-climate-services-africa>
<http://www.wmo.int/pages/documents/gfcs-tanzania.pdf>

CMCC coordinating scientific board of the Bologna adaptation plan for a resilient city
Euro Mediterranean Center on Climate Change (CMCC). The first meeting of the Scientific Board of the [Bologna adaptation plan for a resilient city \(BlueAp\) project](#) was held in Bologna on April 4, 2014. The board, which is coordinated by CMCC, includes experts from Venice, the Hague, Copenhagen, Sheffield, Rome, and Bari. Transparency of the processes and interaction at all



Photo credit: Joanna Van Asselt



Photo credit: Allyza Lustig



Photo credit: Flickr, Lydur Skulason

levels of governance is key to success as the board aims to provide scientific and interdisciplinary input into the development of a local climate profile, which will guide the adaptation plan next July. BlueAp aims to 1) learn from and disseminate the best European experiences in local adaptation planning; 2) realize a comprehensive information system; 3) scale down and produce new information about climate change impact risks and vulnerability in the city; 4) increase awareness among local stakeholders and decision-makers; 5) provide the Bologna community with a strategy document and support in order to drive participatory planning; 6) raise awareness about the measures defined by the local adaptation plan; 7) monitor and evaluate the effectiveness and sustainability of the proposed actions; and 8) communicate project guidelines and results. Project partners include: City of Bologna, ARPA Emilia Romagna, Kyoto Club, and Ambiente Italia.

IEDRO interest in applying to NERC's Future Climate For Africa Research

International Environmental Data Rescue Organization (IEDRO). IEDRO is interested in partnering with organizations applying to become primary investigators in NERC's [Future Climate for Africa Research Program](#). IEDRO's role would be as a sub-contractor supporting the primary investigator by providing data rescue and digitization (DR&D) services. IEDRO is a 501(C)(3) U.S. certified, non-profit organization. Its role is to digitize and share historic climate data that are at risk of disintegrating or being discarded, particularly in low-income countries. Rescued and digitized historic hydro-meteorological data is a basic component that allows researchers to enhance knowledge, tools and methods to better integrate science into decision making. IEDRO has prepared a document

titled "Information for Primary Investigators" as a resource to aid in the development of proposals. The document is available at http://iedro.org/wordpress/IEDRO_NERC-FCFA.pdf on the [IEDRO website](#). For further information, please contact Dr. Richard Crouthamel, IEDRO executive director, at r.crouthamel@IEDRO.org or by phone at +1.410.867.1124.

British Council Researcher Links workshop: From climate science to climate services for society

UK Met Office. This March, a four-day workshop was held in Cape Town, South Africa, focusing on climate service development. The workshop was funded through the British Council Researcher Links Program.

The Climate Science to Climate Services for Society workshop brought together a multidisciplinary group of early career researchers from South Africa and the UK, from environmental science, social science, and climate sensitive-sectors, such as health and agriculture. Through interactive sessions, research exchange and industry engagement, the participants developed knowledge, innovative thinking, and opportunities to form national, international, and interdisciplinary linkages. The program aimed to help participants realize the potential of their research to benefit society and the economy; explore how knowledge exchange and collaboration across nations, research areas, and with end-users can bring valuable insight and drive innovative and useful service development; and bring knowledge and strength to future research projects through international, interdisciplinary and industry collaborations.

An important element of the workshop brought together researchers with industry and government representatives. This interaction helped the participants realize that effective development of useable climate information and tools requires strong communication between the providers of climate information and climate-sensitive decision makers in industry and government.

Enthusiasm from the workshop participants led to the creation of the Early Career Professionals Network, which is currently being taken forward by the CSP.

Updates from Ouranos

Ouranos. Many projects were completed during the last months and significant efforts went into a review of programs and projects, preparation of the next phase of programming, and especially the valorization of results. Ouranos has published several new project reports as well as factsheets available online at <http://www.ouranos.ca/en/publications/scientific-publications.php>. To become part of Ouranos' Expanded Network, please fill out [this form](#).

Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS) complete

Climate Hazards Group (CHG), University of California, Santa Barbara. The CHG is proud to announce the availability of a new dataset designed to deliver reliable, up to date, and more complete data for a number of early warning objectives. Climate Hazards Group InfraRed Precipitation with Station data (CHIRPS) includes more than 30 years of quasi-global rainfall data and was created in collaboration with scientists at the US Geological Survey (USGS) Earth Resources Observation and Science (EROS) Center. Spanning 50°S–50°N (and all longitudes) from 1981 to near present, CHIRPS incorporates 0.05° resolution satellite imagery with in-situ station data to create gridded rainfall time series for trend analysis and seasonal drought monitoring. For detailed information, please refer to this paper: <http://pubs.usgs.gov/ds/832/pdf/ds832.pdf>.

As of May 1st, 2014 version 1.8 of CHIRPS is complete and available to the public. Two CHIRPS products are produced operationally: a rapid preliminary version and a later final version. The preliminary CHIRPS product is available, for the entire domain, two days after the end of a pentad (2nd, 7th, 12th, 17th, 22nd and 27th). The preliminary CHIRPS uses only a single station source, GTS. The final CHIRPS product takes advantage of several other stations sources and is complete sometime after the 15th of the following month. Final monthly, dekad, pentad, and daily products are calculated at that time. Data is available through the CHG ftp site.

If you would like to be notified of the latest versions CHIRPS, please contact Pete Peterson of CHG (pete@geog.ucsb.edu) to be added to the mailing list.

Use and applications of reanalysis surveyed
 Finnish Meteorological Institute (FMI), Deutscher Wetterdienst (DWD), European Centre for Medium-Range Weather Forecasts (ECMWF). A user survey on the awareness, skills, and requirements regarding utility and uncertainties in reanalyses was conducted throughout the global scientific community. Respondents were also asked to comment on the future of climate services. Over 2,500 climate information users, representing roughly 94 different countries, answered the survey.

Reanalysis was found to be the most frequently used data source among the respondents especially when studying atmospheric physics and dynamics, doing atmospheric and climate modelling, and conducting time series analyses. The most used variables are surface temperature, wind and pressure, and the upper air temperature and wind.

According to respondents, the core components of climate services should be 1) provision of statistics based on observations; 2) interpolation and production of gridded data sets based on observations; and 3) homogenization of weather station data. Reanalyses fit well in these categories as they are produced based on all available observations by employing sophisticated data assimilation schemes when calculating the final products.

In interpreting the survey results, one should be mindful of potential sampling bias: the timeline of responses suggests that the bulk of respondents quite probably came from those registered for reanalysis use at ECMWF. The user survey was conducted online from November 2013 to February 2014 within the EU FP7 project



Photo credit: Flickr, Tony Hammond



Photo credit: Sofia Martinez

Coordinating Earth Observation Data Validation for RE-analysis for Climate Services (Core-Climax, 2013-2015).

Read more: <http://www.coreclimax.eu/?q=Reports>
Report: http://en.ilmatieteenlaitos.fi/documents/30106/42381/D5+52_CORE-CLIMAX_31032014_final.pdf/6dbc644a-1ce0-4a4a-8d53-62a473eda662

Adaptation Strategies to Global Environmental Change in the Mediterranean City and the Role of Global Earth Observations conference

On June 10-11 the Greek EU Presidency (under the auspices of the General Secretariat for Research and Technology) hosted the international conference Adaptation Strategies to Global Environmental Change in the Mediterranean City and the Role of Global Earth Observations (GEO) in Athens, Greece. Co-hosts include the European Commission, Eurisy, the Mediterranean City Climate Change Consortium, the Mariolopoulos- Kanaginis Foundation for the Environmental Sciences, the Research Centre for Climatology and Atmospheric Physics, Academy of Athens and the Justus-Liebig University of Giessen, Germany.

The conference captured the effects of climate change in Mediterranean cities with the aim of providing corresponding adaptation strategies. It further explored the GEO contribution to improving climate information and developing and implementing local- and national-level adaptation measures.

Representatives of the Greek government, EU representatives of global organizations (IPCC, WMO, WHO, GEO, ECDC), and scientists from 17 countries addressed the interrelated topics of global and regional earth observations, water, energy, biodiversity, coastal areas and marine environments, built environment, public health, and governance. They stressed the need for local action in response to the global environmental change and the need to involve all actors from citizens to decision makers, scientists, and business. The interdisciplinary audience also acknowledged that the knowledge and communication gap between decision makers and the scientific community is a key obstacle to the design and effectiveness of adaptation strategies.

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National Climate Assessment

US National Climatic Data Center (NCDC), US National Oceanic and Atmospheric Administration (NOAA). The [Third National Climate Assessment](#), which was released by the White House on May 6, assesses the science of climate change and its impacts across the United States. Mandated at least every four years by the Global Change Research Act of 1990, the National Climate Assessment (NCA) chronicles climate-change-related impacts and responses for various sectors and regions. The goal of the NCA is to better inform public and private decision making at all levels. A team of more than 300 experts guided by a 60-member Federal Advisory Committee produced the report, which was extensively reviewed by both the public

and by scientific experts, including federal agencies and a panel of the National Academy of Sciences.

NOAA's National Climatic Data Center supported the National Climate Assessment development by housing the Technical Support Unit (TSU) at the Center. Members of the TSU helped pull together the scientific expertise of the authors from academia, government, nonprofits, and the private sector to create a scientifically accurate, consistent, and clearly communicated report.

To view the full report, visit the Third National Climate Assessment's interactive website at nca2014.globalchange.gov. For a synopsis of the key findings from the assessment, see the [highlights](#) report or [download the 20-page overview booklet](#). The TSU science team and other NCDC scientists made significant contributions to the climate science results presented in the report, including the development of regional climate trends and scenarios reports, available at scenarios.globalchange.gov.

Future Climate for Africa: Resilience in Zambia

Red Cross/Red Crescent Climate Center (RCCC). Officials, academics, scientists, and development practitioners gathered for two workshops in Zambia in May 2014 to discuss the country's future climate and how climate science can support sustainable development. Two key questions were posed: How can we ensure sustainable, climate-resilient development in Zambia? How can scientific climate information support this process? The workshops included interactive learning exercises and games to stimulate discussion and formulate strategies for the future. This participatory methodology generated intense debate and thinking on the links between current and future climate shocks, and how these would affect long-term development, infrastructure and livelihoods.

The workshops were facilitated in partnership by the [Zambia Red Cross](#), the Climate Centre and the [UK Met Office](#) as a pilot for Future Climate for Africa (FCFA) – a five-year research program funded by the UK Department for International Development (DFID) and the Natural Environment Research Council (NERC).

Participants explored climate-related shocks and trends affecting development planning and discussed development options, and tried to relate these to climate science. The workshops also highlighted the importance of developing Zambia's capacity to produce and update its own climate information, and integrate it into long-term decision-making. While good historical climate data does exist for the country, it is often inaccessible to decision-makers. A follow-up workshop is planned for September in Lusaka, with a final report due out shortly afterwards.

Participatory climate games with Somali Red Crescent Red Cross/Red Crescent Climate Center (RCCC)

Resources from the Climate Centre's Climate Training Kit were implemented for the first time in the Horn of Africa last month in the form of workshops for participatory games – part of a Somali Red Crescent Society (SRCS) community-resilience project supported by the [Canadian](#), [German](#), and [Norwegian](#) Red Crosses.



Photo credit: Elisabeth Gawthrop

SRCS team in Somaliland was trained to run games in six regions of Somaliland, with the goal that the game would now “trickle down” into remote rural communities. At least 130 people played [Ready!](#) and [Before the storm](#) at the regional sessions. Participants included SRCS Somaliland staff and volunteers, community members, and officials from the National Environment Research and Disaster Preparedness Management Authority ([NERAD](#)).

Workshop participants noted that the games could guide the actions of communities in response to specific warnings. It also became clear that certain actions should be scaled up under certain scenarios, and that depending on the circumstances different actors are better suited reduce the impact of disaster. SRCS Somaliland team members said they were now excited to run the games in remote villages. Two more games will be played in Somaliland regions and provide input to community-based disaster management.

Read more here: <http://www.climatecentre.org/site/news/533/somali-red-crescent-rolls-out-participatory-climate-games?type=>

El Niño Primer for the Global Health Community
International Research Institute for Climate and Society (IRI).
 With a moderate El Niño expected to develop later this year, the global health community is closely monitoring seasonal climate forecasts. A new bulletin released by the IRI addresses ways in which health decision makers can use climate information to reduce the potential for negative health impacts. IRI is a WHO/PAHO Collaborating Centre for Early Warning Systems for Malaria and Other Climate Sensitive Diseases.

The new bulletin lists several recommendations for improving risk management and disease surveillance in the face of changing climate conditions. Among them is the need for public health officials to partner with national meteorological agencies to improve their understanding of climate forecasts. Closely monitoring monthly changes to ENSO forecasts is also critical for emergency preparedness. If climate experts predict a high likelihood of heavy rainfall, drought, or high temperatures, health authorities are encouraged to develop early contingency plans. Increasing stocks of medical supplies and strengthening coordination with government and humanitarian agencies are key to reducing negative health outcomes should a high-impact climate scenario

occur. [Download the bulletin](#) to see the full list of recommendations.

Read more here: <http://iri.columbia.edu/news/el-nino-primer-for-the-global-health-community/>

IRI special issue

International Research Institute for Climate and Society (IRI).
 An entire special issue of the journal *Earth Perspectives* is dedicated to the evolution and work of the International Research Institute for Climate and Society. Fourteen essays, reviews and research articles provide insight into the science and process that lead to better climate-informed choices. Some articles cover specific stories of local-to-regional engagement with partners to address climate-related problems. Others represent how IRI does what it does, in particular highlighting its research, its climate forecasting and its powerful Data Library. There are also two papers from partners that have had long-time engagement with the IRI.

Read more: <http://www.earth-perspectives.com/series/SLCS>

Vanuatu Climate Services Dialogue

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ). From 9-13 June 2014, the Government of Vanuatu took great strides to provide climate services by hosting the country's first Climate Services Dialogue. The unique dialogue approach, which was based on building local climate stories with real experiences, led to the co-development and delivery of new products that focus on climate issues critical to Vanuatu while combining traditional and scientific knowledge. At the dialogue climate service users from fisheries, tourism, non-government organizations, and forestry exchanged information about the state of knowledge of climate science, impacts, adaptation, and available climate and weather service products. They also learned about best practices to reduce the impacts of coastal erosion and manage coral reef and fisheries, and explored and learned about seasonal climate-related science and information. All felt that the timing of the dialogue was extremely timely given the potential onset of El Niño towards the end of 2014. The stories and experiences developed at the dialogue will form part of Vanuatu's official response program to ENSO events.

Contact: Philip Malsale, malsale@meteo.gov.vu; John Marra, John.Marra@noaa.gov, Britt Parker, Britt.Parker@noaa.gov; Christopher Bartlett, Christopher.Bartlett@giz.de

recent publications



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Photo.



Photo credit: Flickr, Artur
Staszewski

Title: Recent progress toward climate services in France

Author(s): C. Deandreis, J. Lemond, J. P. Dandin, P. Braconnot

Summary: Important efforts have been made in recent years to develop climate services in France. This development is consistent with legislative and regulatory obligations, with a concern for economic advance, and with the public's eye toward global change.

The web portal [DRIAS, les futurs du climat](#) provides an easy access to climate scenarios for France, open to everyone concerned by climate change impacts and adaptation. This achievement results from a close cooperation between the major French climate modelling groups and the operational services of Météo-France. It has benefited from the support of the Ministry of Sustainable Development namely through its GICC program. The next steps for DRIAS will be defined both by the scientific community and by the requirements and expectations of users.

Following a different approach more focused on the specific and advanced needs of particular users, the French projects INVULNERABLE and SECIF sought to create a tool relevant and tailored for the industrial sector. Operational users must be educated about the issues surrounding climate change, and the interface between climatologists and skilled users within the concerned companies should be enhanced.

Both approaches are representative of current efforts of the French national scientific community to provide a useful part of the knowledge developed by the Academia and Météo-France. The various initiatives are carried out in order to share and be consistent with research community work. They are mutually enriching, and with all stakeholders involved they gradually build a real climate service in France.

Link: http://inis.iaea.org/search/search.aspx?orig_q=RN:44106081

Title: Working with a changing climate, not against it: hydro-meteorological disaster risk reduction (DRR) survey of lessons learned for resilient adaptation to a changing climate

Author(s): M.H. Glantz, M-A. Baudoin

Summary: This survey of hydro-meteorological disaster risk reduction (DRR) project was carried out to identify lessons learned from selected USAID/OFDA programs for use in planning future activities. The project was undertaken in the midst of changes: The climate is warming. Atmospheric processes are changing. The frequency, intensity, magnitude and even location of hydro-meteorological extremes are changing. Societies are changing, as are approaches to building societal resilience.

While completing this survey of a set of lessons from projects in Asia, Africa, Central America and the Caribbean, several sustained outcomes were highlighted, as were problems encountered during the projects. For example, gaps were identified between the expectations of what ought to have been the outcomes and what the outcomes actually turned out to be.

Chapters include: "From planning to outcomes: what ought to be, what is, what could be"; "DRR & CCA: reasons for bridging and blending"; and "Resilience; lessons learned". These were followed by a section of several regional cases studies: the greater horn of Africa; the lower Mekong basin; the Hindu Kush Himalayan region; Central America and the Caribbean. A final section includes chapters on "Lessons from existing DRR and humanitarian reviews" and on "Usable Concepts." The report also includes a Quick executive summary that presents common findings from the survey with ramification statements about the potential consequences of not considering seriously lessons identified.

Link: http://sparetimeuniversity.com/wp-content/uploads/2014/01/ShortExSum_01-16c-14_mhgFINAL2.pdf

Title: Forecast-based financing: an approach for catalyzing humanitarian action based on extreme weather and climate forecasts.

Authors: E. Coughlan de Perez, B. van den Hurk, M. van Aalst, B. Jongman, T. Kloose, P. Suarez

Summary: There are many short-term actions that can be implemented in the period of time between a warning and a potential disaster to reduce the risk of impacts. However, this precious window of opportunity is regularly overlooked in the case of climate and weather forecasts, which can indicate heightened risk of disaster but are rarely used to initiate preventative action. In general, it is unclear what levels of forecast probability and magnitude are "worth" reacting to. Here, we propose a novel forecast-based financing system to automatically trigger action based on climate forecasts or observations. The system matches threshold forecast probabilities with appropriate actions, disburses required funding when threshold forecasts are issued, and develops Standard Operating Procedures that contain the mandate to act when these threshold forecasts are issued.

Link: <http://www.nat-hazards-earth-syst-sci-discuss.net/2/3193/2014/nhessd-2-3193-2014.pdf>

Title: Climate services for society: origins, institutional arrangements, and design elements for an evaluation framework

Author(s): C. Vaughan, S. Dessai

Summary: Climate services involve the generation, provision, and contextualization of information and knowledge derived from climate research for decision making at all levels of society. These services are mainly targeted at informing adaptation to climate variability and change, widely recognized as an important challenge for sustainable development. This paper reviews the development of climate services, beginning with a historical overview, a short summary of improvements in climate information, and a description of the recent surge of interest in climate service development. It also reviews institutional arrangements of selected emerging climate services across local, national, regional, and international scales. By synthesizing existing literature, the paper proposes four design elements of a climate services evaluation framework. The design elements are intended to serve as a guide to organize future work regarding the evaluation of when and whether climate services are more or less successful. The paper concludes by identifying future research questions regarding the institutional arrangements that support climate services and nascent efforts to evaluate them.

Link: <http://wires.wiley.com/WileyCDA/WiresArticle/wisld-WCC290.html>

Title: Mosaic surface storages of a small boreal catchment

Authors: G.E. Carrer, A. N. Rousseau, A. St-Hilaire, S. Jutras.

Summary: Recent studies have suggested that the hydrologic connectivity of northern headwater catchments is likely controlled by antecedent moisture conditions and land cover patterns. A water storage model (EWS), based on water levels (WLs), specific yield (Sy) and surface elevation (SE) changes, was compared with a basic water budget of a small, boreal, patterned fen (13 ha) during the ice-free period. Results showed that the EWS model reproduced well storage variations derived from the water budget. These results suggest that storage variations can be properly represented by the fluctuations of WLs when we consider the heterogeneous soil properties. However, storage deviations occurred at the daily

scale and could be explained by a lack of information on water retention in unsaturated layers, canopy interceptions and preferential flows. Despite the significant impact of SE changes on the different peatland cover storage budgets (strings and lawns), using Sy mean values had a low impact on storage estimations. This can be explained by the large proportion of pools and high WLs throughout the fen. At the fen scale, high storage in the pools seemed to reduce the Sy difference between strings and lawns. The results of this study provide new insights about the complex hydrological behavior of northern catchments and allow for conceiving new hydrological modelling perspectives.

Link: <http://onlinelibrary.wiley.com/doi/10.1002/hyp.10195/abstract>

Title: Stochastic generation of daily precipitation amounts: review and evaluation of different models

Authors: J. Chen, F.P. Brissette.

Summary: The present study first reviews the performance of different models in generating daily precipitation amounts. Eight models with different levels of complexity are then selected to simulate daily precipitation for 35 stations across the world. All 8 models adequately reproduce the observed mean precipitation at daily, monthly and annual scales, while all of them underestimate the standard deviation of monthly and annual precipitation. However, the compound distributions are generally better than the single distributions at reducing the variance overdispersion, with the exception of the skewed normal (SN) distribution. The nonparametric kernel density estimation (KDE) is consistently better than all of the parametric distributions. With the exception of the SN distribution, all the single distributions underestimate the upper tail of daily precipitation distribution. However, the generalized Pareto distribution-based compound distributions provide a reasonable performance for simulating the upper tail, even though they are slightly worse than the KDE, which displays the best performance. Overall, the compound distributions general perform better than the single distributions, and the nonparametric KDE performs better than the parametric distributions. However, the complicated structure of the compound distribution and of the KDE and the limited extrapolation ability of the KDE may restrict their application to climate change impact studies. The 3-parameter SN distribution displays similar or even slightly better performance than the compound distributions, and this distribution may be the first choice to be incorporated into a weather generator for studying climate change impacts, especially for risk-related assessments.

Link: <http://www.int-res.com/articles/cr2014/59/c059p189.pdf>

Title: The poleward migration of the location of tropical cyclone maximum intensity

Authors: J.P. Kossin, K.A. Emanuel, G.A Vecchi

Summary: Over the past 30 years, the location where tropical cyclones reach maximum intensity has been shifting toward the poles in both the northern and southern hemispheres at a rate of about 35 miles, or one-half a degree of latitude, per decade. As tropical cyclones move into higher latitudes, some regions closer to the equator may experience reduced risk, while coastal populations and infrastructures located poleward of the tropics may experience increased risk. With their devastating winds and flooding, tropical cyclones can especially endanger coastal cities not adequately prepared for them. Additionally, regions in the tropics that depend on cyclones' rainfall to help

replenish water resources may be at risk for lower water availability as the storms migrate away from them.

As lead author of the paper, Jim Kossin, a scientist with NOAA's National Climatic Data Center, notes the amount of poleward migration varies by region. The greatest migration is found in the northern and southern Pacific and South Indian Oceans, but there is no evidence that the peak intensity of Atlantic hurricanes has migrated poleward in the past 30 years.

[Learn more](#) about the changes in wind shear that accompany the shift in latitude where hurricanes reach maximum intensity.

Link: <http://www.nature.com/nature/journal/v509/n7500/full/nature13278.html>

Title: Investigating El Niño-Southern Oscillation and society relationships

Author: S.E. Zebiak, B. Orlove, A.G. Muñoz, C. Vaughan, J. Hansen, T. Troy, M.C. Thomson, A. Lustig, S. Garvin

Summary: Throughout at least the past several centuries, El Niño-Southern Oscillation (ENSO) has played a significant role in human response to climate. In this paper, we review ENSO's impact on society, specifically with regard to agriculture, water, and health; we also explore the extent to which ENSO-related forecasts are used to inform decision making in these sectors. We find that there are significant differences in the uptake of forecasts across sectors, with the highest use in agriculture, intermediate use in water resources management, and the lowest in health. Forecast use is low in areas where ENSO linkages to climate are weak, but the strength of this linkage alone does not guarantee use. Moreover, the differential use of ENSO forecasts by sector shows the critical role of institutions that work at the boundary between science and society. In a long-term iterative process requiring continual maintenance, these organizations serve to enhance the salience, credibility, and legitimacy of forecasts and related climate services.

Link: <http://iri.columbia.edu/news/study-el-ninos-impacts-on-water-agriculture-and-health/>

Title: Stochastic spatial disaggregation of extreme precipitation to validate a Regional Climate Model and to evaluate climate change impacts over a small watershed.

Authors: P. Gagnon, A.N. Rousseau

Summary: The objective of this work is to evaluate whether a stochastic spatial disaggregation model applied on annual maximum daily precipitation (i) enables the validation of a RCM for a period of reference, and (ii) modifies the evaluation of CC impacts over a small area. Three simulations of the Canadian RCM (CRCM) covering the period 1961–2099 are used over a small watershed (130 km²) located in southern Québec, Canada. The disaggregation model applied is based on Gibbs sampling and accounts for physical properties of the event (wind speed, wind direction, and convective available potential energy – CAPE), leading to realistic spatial distributions of precipitation. The results indicate that disaggregation has a significant impact on the validation. However, it does not provide a precise estimate of the simulation bias because of the difference in resolution between disaggregated values (4 km) and observations, and because of the underestimation of the spatial variability by the disaggregation model for the most convective events. Nevertheless, disaggregation illustrates that the simulations used mostly overestimated annual maximum precipitation depth in the study area during the reference period. Also, disaggregation slightly increases the signal of CC compared to the RCM raw simulations, highlighting the

importance of spatial resolution in CC impact evaluation of extreme events.

Link: <http://www.hydrol-earth-syst-sci.net/18/1695/2014/hess-18-1695-2014.html>

Title: Water resources optimization method in the context of climate change

Authors: D. Haguma, R. Leconte, S. Krau, P. Côté, F. Brissette

Summary: This paper describes a method for water resources optimization in the context of climate change. The method takes into account the mid-term variability or seasonality of inflows as well as the uncertainty in the climate change and resulting flows. The objective of the optimization algorithm is to find a compromise between the long-term planning of water resources systems and the mid-term operations for optimum hydropower production. The proposed algorithm consists of the mid-term Dynamic Programming formulation coupled with the use of the expected value of the cost-to-go function between two consecutive long-term periods. Future climate projections and transition probabilities between projections represent the stochastic nature of inflows and the nonstationarity of climate. The performance of the method was evaluated through the simulation of inflow projections for the Manicouagan River basin in Quebec, Canada. The results showed that the algorithm was able to adapt the operating policy to the climate seasonality and climate change uncertainties in the optimization problem.

Link: [http://ascelibrary.org/doi/abs/10.1061/\(ASCE\)WR.1943-5452.0000445](http://ascelibrary.org/doi/abs/10.1061/(ASCE)WR.1943-5452.0000445)

Title: Dengue outlook for the World Cup in Brazil: an early warning model framework driven by real-time seasonal climate forecasts.

Authors: R. Lowe, C. Barcellos, C.A.S. Coelho, T.C. Bailey, E.G. Coelho, T. Jupp, R. Graham, W. Massa Ramalho, M. Sá Carvalho, D.B. Stephenson, X. Rodó

Summary: In this paper, we addressed the potential for a dengue epidemic during the 2014 World Cup, using a probabilistic forecast of dengue risk for the 553 microregions of Brazil, with risk level warnings for the 12 cities where matches will be played. The model was driven by real-time seasonal climate forecasts from several international sources and the observed dengue epidemiological situation in Brazil at the forecast issue date, as provided by the Ministry of Health. This enabled dengue warnings to be made 3 months ahead. By assessing the past performance of the forecasting system using observed dengue incidence rates we identified optimum trigger alert thresholds for scenarios of medium-risk and high-risk of dengue. The probability of dengue cases exceeding the "high" threshold of 300 cases per 100,000 inhabitants was 48% in Natal, 46% in Fortaleza and 19% in Recife. Although the most likely scenario for all twelve cities is for low risk, these microregions deserve more attention when planning vector control measures. To our knowledge, this is the first example of a climate service for public health, ahead of a major global event.

The paper received considerable attention from the media and social networks: The article is the 5th highest scoring article in The Lancet Infectious Diseases (impact factor: 19.97) and is in the top in the top 5% of all articles ever tracked by [Altmetric](#). It has been covered by the [BBC](#), [New York Times](#), [NHS News](#), and a number of other media sources.

Link: <http://www.sciencedirect.com/science/article/pii/S1473309914707819>

upcoming events in the climate services community

CSP QUARTERLY July 2014

Game Over - Exploring the Complexity of Actionable Information through Gaming

Date: July 1, 2014

Location: UCL London, UK

Lead organization(s): Red Cross / Red Crescent Climate Centre

About: Red Cross / Red Crescent Climate Centre is organizing an intensely interactive session where participants will experience the richness of playable system dynamic models. Simple rules will enable the emergence of complexity, challenging participants to understand changing risks and what to do about them – both individually and as part of teams. More importantly, the event will set the foundations for helping participants create innovative ways to accelerate and deepen the reach of data, information and knowledge for understanding risk.

Link: <https://www.understandrisk.org/>

Forecast-based Disaster Financing

Date: July 3, 2014

Location: UCL London, UK

Lead organization(s): Red Cross / Red Crescent Climate Centre

About: In this game-based simulation, participants will interact to statistically modeled flood risk and the results of risk-based financing, discussing the opportunities and requirements to operationalize such a system. Drawing on case studies of this approach in Uganda, Togo, and Zambia, discussion will encompass 1) communication of risk to disaster managers; 2) selection of thresholds for disaster warnings; and 3) practicalities of evaluating risk-based financing.

Link: <https://www.understandrisk.org/>

Gender, Water, and Development

Date: July 7-11, 2014

Location: East London, South Africa

Lead organization(s): Water Research Commission, the Department of Water Affairs, the African Ministers' Council on Water (AMCOW), the Women for Water Partnership (WfWP), the Southern African Development Community (SADC).

About: This conference aims to influence policy and implementation strategies that promote gender

mainstreaming in the water sector in Africa. The conference theme will be structured around the AMCOW Gender Strategy, with its seven strategic objectives: formulating and implementing gender in water policy; mobilizing strategic human and financial resources; implementing project interventions through economic empowerment and other gendered approaches; undertaking, sharing, and implementing strategic research and operational knowledge; human and institutional capacity development; mechanisms to promote cooperation; monitoring and evaluation.

Link: http://www.iwmi.cgiar.org/News_Room/pdf/Global_Water_Development_Conference-Announcement_and_Call_for_Submissions.pdf

World Weather Open Science Conference (WWOSC)

Date: August 16-21, 2014

Location: Montreal, Canada

Lead organization(s): World Meteorological Organization, International Council for Science, Environment Canada, National Research Council Canada

About: This conference consists of a science program, covering basic and applied weather research, and a User, Application & Social Science (UAS) Program that will consider the challenges and opportunities associated with communicating and utilizing weather information, science, and services for social and economic benefit. The programs are joined through combined plenary and special sessions. Calls for abstract contributions to paper, panel, or poster sessions have been issued (deadline: February 24th) and the online submission site is now active.

Link: <http://wwosc2014.org/>

Second International Conference on Evaluating Climate Change and Development: Tackling a Key 21st Century Evaluation Challenge

Date: September 9-11, 2014

Location: Washington, DC, United States

Lead organization(s): Climate-Eval

About: The conference will pull together a limited but representative number of evaluation practitioners and stakeholders from across the world to reflect on existing evaluation tools and methods on the one hand, while consolidating new and innovative approaches that address



Photo credit: Elisabeth Gawthrop

emerging climate change and development evaluation on the other. For more information, please contact David Akana at dakana@thegef.org or (202) 458-9733

Link: <http://www.climate-eval.org/events/2014-conference>

United Nations Climate Summit 2014

Date: September 23, 2014

Location: New York, NY, United States

Lead organization(s): United Nations

About: The 2014 Climate Summit will be a different kind of Climate Summit. It is aimed at catalyzing action by governments, business, finance, industry, and civil society in areas for new commitments and substantial, scalable and replicable contributions to the Summit that will help the world shift toward a low-carbon economy.

The Summit will come one year before countries aim to conclude a global climate agreement in 2015 through the United Nations Framework Convention on Climate Change (UNFCCC).

Link: <http://www.un.org/climatechange/summit2014/>

Third GRF One Health Summit 2014

Date: October 5-8, 2014

Location: Davos Congress Centre, Davos, Switzerland

Lead organization(s): Global Risk Forum, Davos

About: Today's human health management must be dealt with from a holistic "One Health" perspective that acknowledges the systemic interconnections of human, animal and environmental health in close relation with food safety and security. Knowledge sharing, education, improved governance, corporate responsibility and dedicated investments will be key. The third GRF One Health Summit will further develop and strengthen the One Health paradigm and its global movement. In particular this 3rd global gathering will focus on the added value of a global One Health approach and a stronger involvement of the private sector and policy. The conference encompasses a number of topics, which can be found at <http://onehealth.grforum.org/programme/conference-topics/Authors>.

Link: <http://onehealth.grforum.org/home/>

14th European Meteorological Society (EMS) Annual Meeting & 10th European Conference on Applied Climatology (ECAC)

Date: October 6-10, 2014

Location: Prague, Czech Republic

About: The theme of this year's EMS annual meeting is "Creating climate services through partnerships." Several programs will be incorporated into the larger meeting framework, including ECAC – Applied climatology: developing climate services in partnerships, communication and education (CE), numerical weather prediction (NWP), and the atmospheric system and its interactions (ASI). Early registration on September 1.

Link: <http://www.ems2014.eu/home.html>

Climate Symposium 2014

Date: October 13-17, 2014

Lead organization(s): CLIVAR

Location: Darmstadt, Germany

About: This symposium will be an important step toward defining requirements and further developing an efficient and sustained international space-based Earth observing system. This symposium is intended to bring together the international experts in climate observations, research, analysis and modeling to present and discuss results from their studies, with a particular emphasis on the role of space-based Earth observations in improving our knowledge of the current climate at global and regional scales, and in the assessment of models used for climate projections.

Link: http://www.theclimatesymposium2014.com/index_.php/climatesymposium/index

International Symposium on Weather and Climate Extremes, Food Security and Biodiversity

Date: October 20-24, 2014

Lead organization(s): United Nations Food and Agricultural Organization (FAO), World Meteorological Organization (WMO), George Mason University

Location: George Mason University, Washington, DC, United States

About: This symposium aims to bring together experts, decision makers, and practitioners from the fields of hydrometeorology, agriculture, and biodiversity. It will be designed to facilitate the discussions on key issues and help develop appropriate recommendations for implementation at the national and local levels to ensure global food security and healthy ecosystems. Poster sessions and exhibit booths will be included in this symposium. Complete registration information is available on the meeting website at <http://iscefs.org>.

Link: <http://iscefs.org>

Sustainability Science Congress: Global Challenges: Achieving Sustainability

Date: October 22-24, 2014

Lead organization(s): This international and solutions-orientated congress invites experts across disciplines to break down academic barriers and jumpstart a broader collaboration on sustainable solutions relevant for society. Also targeting businesses and policy makers, the congress aims to provide a platform for science-policy interface relevant for global challenges.

Location: Copenhagen, Denmark

Link: <http://sustainability.ku.dk/iarucongress2014>

UN Climate Change Conference COP20

Date: December 1-12, 2014

Lead organization(s): United National Framework Convention on Climate Services

Location: Lima, Peru

About: The COP is the supreme decision-making body of the UNFCCC and serves as the Meeting of the Parties (MoP) to the Kyoto Protocol. All states that are parties to the Kyoto Protocol are represented at the CMP, while states that are not parties participate as observers. The CMP reviews the implementation of the Kyoto Protocol and takes decisions to promote its effective implementation. The pre-COP ministerial meeting will be held in Venezuela

Link: https://unfccc.int/meetings/lima_dec_2014/meeting/8141.php