



IN THIS ISSUE

Letter from the Secretariat
 Steve Zebiak 2
 Daniela Jacob.... 3

Community spotlight
 Marco Gemmer.. 4

Benefits of NMHSs
 Glen Anderson.. 5

Partner updates... 6

Recent publications.....13

Upcoming events.....15

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.

Editorial board: April Humble, Daniela Jacob, María Máñez Costa, Irene Fischer-Bruns (all CS2.0)

Last quarter I announced the discontinuation of the CSP Newsletter series. At the time, we thought this would be required due to lack of continuing resources for the CSP Secretariat activities – but, as you can see, the Newsletter is back, on schedule, without missing a beat! This welcome turn of events is owed to support from the German Climate Service Center 2.0 (CS2.0) that has given new footing to the CSP.

First, let me mention that following the last Newsletter, we heard from many of you who expressed your appreciation for the Partnership and its activities over the past three years, and conveyed your regret over its suspension. This was, of course, very heartening – as was the response from CS2.0, who offered not only a strong voice of support, but to assist CSP as well.

CS2.0 has volunteered to take on significant leadership and support work for the CSP – beginning with the Newsletter. They will take much of the burden for maintaining the CSP website, and will also play an active role in (re)convening and restructuring the CSP Coordinating Group, and in promoting and developing future International Conferences on Climate Services (ICCSs).

This generous support from CS2.0 offers the Partnership a path forward, and I'm sure all of you will be as appreciative as we are for their contributions. That being said, the actual path forward – CSP's future agenda – still needs careful consideration, and no doubt some rethinking. In this I would argue that we should be true to the spirit of CSP, and ensure that the forthcoming agenda is responsive to the needs and interests of the membership. CSP has always been about building a community of practice to benefit its members, as well as to advance climate services generally.

As a group, we need to consider some options. Do we want to convene the community, and expert groups, to tackle major issues and challenges? Do we want to learn more, collectively? Do we want to work toward establishing community guidelines and good practices? Do we want to become a delivery platform for major programs such as the GFCS? Do we want to form a professional society (as I spoke about last time) with resource development, certification, training and other typical society functions?

CSP has been doing some of these things already. For example, our working groups on economic valuation, evaluation and ethics, and to an extent the CSP case studies, have been about both learning and ultimately, establishing guidelines and good practices in these domains. The ICCSs have been unique opportunities to convene a broad community of stakeholders, to share knowledge and to address pressing issues.

Whether seeking to sustain or grow these activities or to advance new ones, going forward we need to secure new resources to support CSP's programs. This will require us to adopt a proactive approach to program and project development, seeking out prospective sponsors, targeting and shaping proposals to speak to their interests and gain their support. We hope to reinvigorate and reorganize the CSP Coordinating Group to take on this more tactical role over the coming months.

But again, our priorities for CSP going forward should reflect the views of the broader CSP community. We will again reach out to you in the near future. Please be prepared to offer your ideas and suggestions, and your assistance as well, in defining and realizing CSP's new agenda.

The chance to maintain this channel of communication, let alone to pursue a future path for CSP, would not have been possible at this time without the critical support of our CS2.0 partners. We are extraordinarily grateful to CS2.0 Director Daniela Jacob, María Máñez Costa and April Humble for their contributions to the Secretariat, which without doubt will serve the Partnership very well. Please look to hear from them in the near future.



A welcome from the Climate Service Center 2.0

a letter from the new CSP newsletter editorial board



Daniela Jacob
Director of the
Climate Service Center 2.0,
Germany

When the CSP announced its plan to scale back on some their community activities, we were both surprised and saddened. We believe at the Climate Service Center 2.0, and as I am sure many will agree, this current period should be one of growth, expansion and strengthening of the climate services community.

Seeing that support was needed to keep several of the much appreciated CSP community activities alive, such as the newsletter and website, at CS2.0 we did not hesitate to offer our backing to help continue this important work. This offer was made not only from what we saw as necessity for the community, but with enthusiasm and pleasure. We view such involvement and volunteerism as key to keeping the community strong.

After dialogue with the Secretariat at CSP, the transition of some important social media and organizational activities to under the coordination of CS2.0 began to take place over the summer.

This development of having some of the key CSP activities now based in Europe, at CS2.0, Germany, we see as an opportunity to also further deepen CSP activity this side of the Atlantic. Creating this wider base of coordination will naturally allow us as a community to extend and deepen our networks, into new disciplinary and sectorial fields and geographical areas.

One of the main goals of CS2.0 itself is to develop national and international networks in order to concentrate existing competences and knowledge and to link stakeholders within climate change and climate services. This progression is a perfect opportunity to further fulfill our aims by stimulating communication and cooperation within the climate services community across the globe.

We are delighted to be able to provide support to the CSP team, as well as being honored to be able to host and execute these fundamental activities, which help to keep healthy relationships with such organizational-based communities alive and fruitful.

We believe that the CSP Secretariat, Steve Zebiak, Cathy Vaughan and Allyza Lustig from IRI, have done a tremendous job over the last few years. We hope we can do justice to the duties we have pledged to take over.

Within the roles of our new activities, we are open to suggestions, comments, and ideas. CSP exists with the central purpose of supporting the relations, communication, and development of climate services as a whole. We are excited to move forward and improve as a network, and we look forward to working with you as a community to realize this goal.

Daniela Jacob



Marco Gemmer
Policy Officer Climate Action and
Earth Observation Unit
Directorate-General for
Research and Innovation
European Commission

What do you see as the largest challenges in developing effective climate services?

The key challenge is the effectiveness... and how to assess it. A supplier might evaluate the effectiveness of products and services positively while the user might not. The effectiveness for the end-user will be determined by the specific need for a service, the costs, benefits and timing. The transition from providing information to tailor-made services that go beyond one domain, for instance climate, is another challenge. These business opportunities need to be fully developed and widely shared.

Tell me a bit about what the European Research and Innovation Roadmap for Climate Services does, and the ways in which it is involved with the wider climate services community.

Let's consider the process leading to the Roadmap. We had a forward-looking workshop in 2014 with the wider community to exchange on how to develop a European market for climate services. The conclusion we drew with the community was to start off with a research and innovation roadmap for climate services. The Roadmap was developed with the support of external experts and was launched in March this year. It analyses in detail the challenges on the way to the market and proposes detailed actions to address them. The challenges go from growing the market to setting the framework conditions to quality and relevance of services. The Roadmap offers a framework for the relevant players to see how they could contribute to the actions. In that respect, the Roadmap is a document to support the entire climate services community, from providers to users.

What do you see as the initiative's greatest strengths?

The Roadmap shows us where and how stronger involvement by the end-users in the design of climate services is needed. The experts looked into climate services from the market perspective, putting the users of climate services at the center of their work. Therefore, the Roadmap is an important reference for our policy initiative on climate services to draw social and economic impact from climate services. It will also enable us to engage in a structured, forward-looking process with the existing and future providers and users of climate services.

What are the EC's plans for climate services in the short-term?

We will focus on actions that support the implementation of the Roadmap. The involvement of end-users in designing climate services is one aspect but also investments into science and research to improve the credibility of climate services. Our plan is to support these actions in the short- and long-term. We have started with the actions identified in the Roadmap as urgent needs. We launched, for instance, a call for ideas for demonstration projects and will use the feedback for the next call of Horizon 2020. The main task will be to arrange research and innovation investments between different architects of the climate services landscape.

How do you see the Roadmap's influences and impacts on climate services in other regions?

Climate services have a global role. The European Commission has been contributing to the Global Framework for Climate Services (GFCS) from its starting point, and we will continue doing so with the actions in the Roadmap. The Roadmap also identifies opportunities for international cooperation and transferring climate services beyond Europe. There is particular interest to do so with LDCs but also with Africa and Latin America from a regional perspective. Here we have to rely on many local partners and their programs. We have the unique opportunity to build on existing initiatives, for instance the GMES (Global Monitoring for Environment and Security) for Africa as well as the new Copernicus Climate Change Service. We can also rely on experience and networks from our projects of FP7 and Horizon 2020 in the broader climate action portfolio. Sharing of knowledge and collaboration on climate services will be key to having positive impacts in other global regions.

“Sharing of knowledge and collaboration on climate services will be key to having positive impacts in other global regions.”

What do you like most about your work and what do you find most challenging?

Working in a global community on a global challenge. That's what I like and that's what is challenging.

Socio-economic benefits of weather, climate and hydrological services

Glen Anderson, on NMHSs

For more than a century, weather, climate and hydrological information, forecasts and, more recently, remotely-sensed data and early warnings have been provided to the public and private sector. These services have increased the safety and efficiency of land, sea and air transport, helped communities prepare for and respond to extreme weather events and facilitated improved decision-making in weather-sensitive economic sectors.

Yet, as National Meteorological and Hydrological Services (NMHSs) strive to maintain and improve the quality, diversity, and coverage of their services, they face challenges similar to other public institutions in securing adequate and sustained funding. To compete for and optimize the use of scarce public investment resources, NMHSs may be required to demonstrate that the benefits of their current services and planned investments are significantly larger than the costs to produce and deliver them. Although there is not a single definitive study on the global benefits of meteorological and hydrological services, economic studies have consistently generated benefit/cost ratios greater than three to one.

In 2012, representatives of the CSP Working Group on Economic Valuation of Climate Services, the World Meteorological Organization, and the World Bank met in Geneva to discuss the preparation of a book to help NMHSs and other services providers develop a basic understanding of economic valuation methods to enable them to successfully design, commission and communicate the results of economic benefit studies. The three organizations agreed to jointly prepare the book and a thirteen-person team was engaged to prepare the book with financial support from USAID, WMO and the World Bank.

The book entitled:

“Valuing Weather and Climate: Economic Assessment of Meteorological and Hydrological Services”

was launched on May 28, 2015 at the World Meteorological Congress in Geneva, Switzerland. A printed version of the book is available from WMO and an electronic version can be downloaded at the following site: https://www.wmo.int/pages/prog/amp/pwsp/documents/wmo_1153_en.pdf

The book is structured around a 10-step process describing the design, implementation and dissemination of the results of economic valuation studies. The presentation of economic concepts and methods for estimating and comparing benefits and costs has been designed for general audiences. The book's appendices include a glossary of terms, background on meteorological and hydrological services production, a brief history of benefits studies, a survey of social sciences methods other than economic ones that may be used in benefits studies, and summaries of nine benefits studies.

Illustrative economic assessments of met/hydro services

- NMHS improvements to reduce disaster losses in developing countries – benefit/cost ratio ranges from 4:1 to 36:1
- Current and improved weather forecasts in the United States assessed for households – benefit/cost ratio of at least 4:1
- Drought early warning system in Ethiopia to reduce livelihood losses and dependence on assistance – benefit/cost ratio ranges from 3:1 to 6:1
- El Niño early warning system in five-state region of Mexico to improve decision-making in agriculture – benefit/cost ratio ranges from 2:1 to 9:1

Since the completion of the book earlier this year, CSP and WMO have conducted three one-week hands-on training workshops for NMHSs in the Caribbean, Southern Africa, and Europe and the Middle East to introduce the concepts elaborated in the book and assist participants to begin work on the design of economic benefits studies. Looking forward, it is hoped that the book will generate interest in economic valuation studies in NMHSs.



Launch of the book – left to right, Daniel Kull, GFDRR/World Bank, Gerald Fleming, Irish Meteorological Service, and Sam Muchemi, WMO.

Photo credit – Kevin O'Loughlin.

Partners for Resilience meet in Nairobi
International Federation of Red Cross and Red Crescent Societies

An intensive participatory workshop in Nairobi in May facilitated by the Red Cross/Red Crescent Climate Centre documented five years' implementation and learning from the Partners for Resilience (PfR) countries in East Africa: Ethiopia, Kenya and Uganda. The case-study articles it generated will now be published as a collection in a book form.

The sessions used the writeshop methodology first developed by the International Institute of Rural Reconstruction. More than 30 people from all three countries gathered in the Kenyan capital to document success stories and lessons learned from implementing PfR, which integrates disaster risk reduction, climate adaptation and ecosystem management and restoration in nine countries worldwide. Assisted by local journalists, the writers – mainly field-based practitioners – were able to turn what started out as rough drafts into attractive, coherent and accessible stories.

A five-way partnership between the Malawi and Finnish Red Cross and the countries' meteorological services and the Climate Centre has strengthened the resilience of some 15,000 Malawians living in high-risk built-up areas, it was reported.

"This project supported the national strategy of promoting the dissemination of climate information for early warning and capacity building, as well as enhancing mitigation and adaptation," said Ethel Kaimila, Secretary General of the Malawi Red Cross Society.

The 2015 Participatory Action Handbook – coordinated and published by Climate Centre partner Indigo Development and Change and the Environmental Monitoring Group in South Africa – was compiled by practitioners from South Africa, Ethiopia and Germany, jointly drawing on their experience of supporting local communities in adapting to increasing climatic variability and change.

More can be read on the Handbook here:
www.climatecentre.org/news/592/programme-managers-from-ethiopia-germany-sa-pool-experience-in-new-handbook-on-climate-adaptation

Launch of New Application to Support Climate Risk Management

Caribbean Climate Impacts Database

Climate and disaster risk managers and researchers can now benefit from a new application that provides an evidence-based information archive which supports the forecasting and modeling of climate risk. The Caribbean Climate Impacts Database (CID) is an inventory of geo-referenced, historical climate-related impacts. The repository contains impact data for 17 Caribbean countries with some records dating as far back as 1780. The CID also has a sectoral focus and archives impacts affecting five climate sensitive sectors – agriculture and food security, water, disaster risk management, health, and

tourism. It addresses the disconnect between climate and disaster impacts and the response to impacts at the national and sectoral levels by the inclusion of available response mechanisms and standard operating procedures.

Eighteen months of development culminated with the launch of the Caribbean CID at the recently concluded Caribbean Climate Outlook Forum (CariCOF) wet/hurricane season General Assembly on June 2, 2015 in Saint Lucia. In his launch speech, Mr. Ivor Daniel, the Deputy Permanent Secretary of the Ministry of Infrastructure, Port Services and Transport in Saint Lucia endorsed the CID and expressed his hope that this new tool would support regional growth resilient to climate risks. In his remarks, Walter E. Baethgen, Project Director and Head of the Regional and Sectorial Research Program for Latin America and the Caribbean at IRI, commented that the impacts database represents a significant step forward to address the lack of data in the region.

Going forward, developers plan to improve the content and functionality of the CID by expanding the data available for a wider range of countries; address the under-representation of positive climate impacts; and integrate near real-time impacts reporting in the response and recovery phases of disaster management. It is also anticipated that the CID will be instrumental in establishing a network of volunteer impact reporters in the Caribbean.

The CID is a collaborative effort between the Caribbean Institute for Meteorology and Hydrology (CIMH), the Caribbean Disaster Emergency Management Agency (CDEMA) and national disaster management agencies in the Caribbean. The database was developed under the 'Building Capacity to Manage Water Resources and Climate Risk in the Caribbean' partnership between the Centre for Resources Management and Environmental Studies (CERMES) of the University of the West Indies, the International Research Institute for Climate and Society (IRI) of the Columbia University of New York and CIMH. This partnership was made possible by the generous support of the American People, through the United States Agency for International Development (USAID) and as managed by Higher Education Development (HED).

The CID can be accessed on the CIMH Regional Climate Centre (RCC) website: rcc.cimh.edu.bb

Please follow the hashtags #CariCOF and #CIDLaunch2015 on Twitter to see more snapshots of the CID validation workshop and launch event. For more information about the CID, contact Shelly-Ann Cox at scox@cimh.edu.bb.

EUPORIAS First Climate Service Masterclass
EUPORIAS

In May 18 – 22, 2015 the first climate service masterclass of EUPORIAS took place at EURAC's headquarters in Bolzano, Italy. The school, aimed at professional and early career climate scientists, hosted students from six different countries. This first masterclass of the project focused on three key sectors: agriculture, tourism and energy. Alongside lectures delivered by speakers from across Europe and Australia, the students were tasked with creating three prototype climate services, in answer to real-life end-user requirements. Such a hands-on a formula worked well and is planned to be replicated in next year's masterclass.

A few points emerged from the school, which were felt to be relevant to a boarder community:

1. Whilst there was a great deal of interest from potential participants, especially in developing countries, the final number of attendees was limited by our inability to mobilize suitable funding in time. Identifying a set of easily accessible grants to support junior scientists from developing countries will be a priority for next year. Please get in touch if you can help with this.

2. We were very impressed by the quality of the students and by the insightful questions they asked. Whilst some mirrored discussions already active within the climate service community others were novel and revealed an interesting junior perspective to the field.

3. The teams worked on case-studies from real end-users who were also at the school. It was tough going for some of the groups but we feel there is nothing more instructive than real end-user interactions to fully understand the complexity of climate service development.

More can be read on here: www.euporias.eu/event/masterclass

CS2.0 hosts final IMPACT2C General Assembly
IMPACT2C

IMPACT2C's final General Assembly took place in Hamburg, June 8 - 10, hosted by CS2.0, who are also the project coordinators.

IMPACT2C is a multi-disciplinary international consortium, that assesses what the impacts, vulnerabilities, risks and economic costs, as well as potential responses, of a global 2 degree warming will be within Europe and three other of the most vulnerable regions of the world. The focus is especially looks at the effects on water, energy, infrastructure, coasts, tourism, forestry, agriculture, ecosystems services, health and air quality-climate interactions; with the goal of making the

results accessible to a wide audience including policy makers on a pan-European scale.



Image: IMPACT2C General Assembly meeting.
 Photo rights: CS2.0

Around 50 scientist from across Europe attended the final General Assembly as IMPACT2C's project partners, including from Italy, Austria, Norway, France, Germany, UK, the Netherlands, Switzerland, and Denmark. Several project partners from further afield also participated, including from Bangladesh, the Maldives and Niger.

This wide group of project partners, from natural scientists - climate modelers, mathematicians and physicists- to social scientists and economists, discussed the progression of their findings within a multi-disciplinary setting in relation to different sector in Europe, West/East Africa, Bangladesh and the Maldives.

This final assembly addressed the final leg of their project, which will be officially concluded at the end of September 2015, and began the crucial process of how to make their findings as accessible, and useful as possible for end-users and policy makers.

More can be read about IMPACT2C here: www.impact2c.eu

Quantifying projected impacts under 2°C warming

adaptive capacity Europe
air pollution costs
water decision making
risks infrastructure Africa
Small Islands health
vulnerability Bangladesh
ecosystems

www.impact2c.eu

ECCA 2015 Copenhagen, Denmark

Climate Service Center 2.0

The European Climate Change Adaptation Conference (ECCA) took place in Copenhagen, Denmark, on May 12 - 14, 2015. The conference was attended by more than 1,000 participants from all over the world, showing the relevance of the main theme "Integrating climate adaptation action in science, policy, practice and business".

The presented content ranged from recent research results, background information of European, national and local adaptation strategies, practice-relevant exchange of experience, to aspects of public-private partnership and business opportunities in the context of climate change adaptation.

CS2.0 contributed with several activities during the conference. Prof. Maria Máñez Costa, scientist in the department of Climate Impacts and Economy, was a member of the scientific advisory panel. Dr. Daniela Jacob, director of the CS2.0, initiated and led two sessions. During the first session, potential settings of modeling frameworks were identified that serve to help steer the development of regional systems. In the second session the initial findings of the IMPACT2C project were discussed around key questions that are relevant to the context of a global 2°C warming goal for Europe.

Another session addressed the different challenges of cities for development and implementation of adaptation strategies for climate change and possible solutions. Dr. Steffen Bender, who works in CS2.0 on issues of impacts and adaptation for cities, led this session. Dr. Markus Groth, working as an economist in the CS2.0 department of Climate Impacts and Economy, presented the "Stadtbaukasten": a modular adaptation toolkit for consulting cities and municipalities.

For further information, please visit: www.ecca2015.eu/

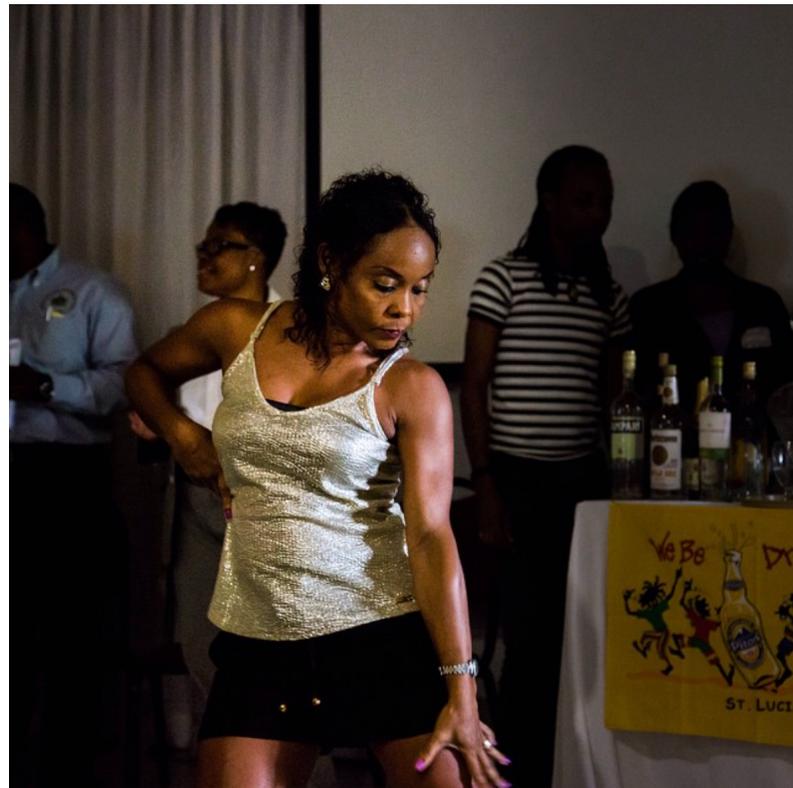
CariCOF THEATRE

Caribbean Institute for Meteorology and Hydrology

The third installment of the Caribbean Climate Outlook Forum (CariCOF) Theatre was presented at the recently concluded CariCOF assembly in St. Lucia on June 1, 2015. The matinee performance entitled 'The Great Castries Flood of 2015' employed meteorologists, hydrologists and even a social scientist in a 30 minute humorous production which focused on the importance of climate services in flood early warning.

The storyline was centered around the launch of a fictitious mobile application called the Advanced Response to Katastrophe (ARK) app at the Bounty Rum shop in Castries. News reporter Stormy Weathers from CariCOF Network News (CNN) covered the story of the launch featuring interviews from Climo, the climatologist, and other sectorial stakeholders.

The ARK app used climate and weather forecasts, real time information from automatic weather stations, historical flood related impacts and risk maps to provide an early warning. The app even used the location services on smart phones and tablets to send an alert with a suggested evacuation route to safe zones with turn-by-turn navigation and route updates.



Picture of Lisa Kirton-Reed (CIMH) one of the Weather Girls performing 'It's Raining Men.'

Photo credit: Elisabeth Gawthrop (IRI)

The jovial launch which included a riveting performance of 'It's Raining Men' by the Weather Girls turned serious when an alert was given indicating that an extreme rainfall event would occur in 20 minutes. Those who downloaded the app were given directions to a safe zone and were able to avoid the rising floodwaters.

The play was written and directed by Shelly-Ann Cox, Research Associate, from the Caribbean Institute for Meteorology and Hydrology (CIMH).

New scientific journal is now live: Climate Services Climate Service Center 2.0

In partnership with Elsevier the Climate Service Center 2.0 launched a new scientific journal, entitled **Climate Services**. Until now, there has been no scientific journal focusing on the important field of climate services, which addresses both scientists and practitioners interested in or already applying climate services. This gap has now been closed.

The Climate Service journal brings science and practice together and serves as a means of communication, dialogue and exchange between researchers and stakeholders.

This is reflected in this new open access journal, where the papers will contain a traditional scientific part as well as a chapter with easily understandable text for practical implication for policy makers and practitioners.

The journal will cover the full scope of issues related to climate services, including but by no means limited to: scientific modeling and analysis, adaptation and mitigation strategies, climate adaptation within governance and institutions, capacity building and transdisciplinary stakeholder dialogues.

For more information, as well as to submit a paper, please visit the homepage: journals.elsevier.com/climate-services

Mesoamerica strengthens capacities for drought early warnings

Regional Committee for Hydraulic Resources /Central America Integration System

With drought being a recurrent climate risk in Mesoamerica, governments have agreed there is a need to produce better information for drought management, including early warning alerts.

The first step in this process took place in 2014, when a training course was held in San José, Costa Rica for 25 representatives from Mesoamerican countries. Under the leadership of the Regional Committee for Water Resources (CRRH) of the Central American Integration System (SICA), in partnership with the Central American chapter of the Global Water Partnership (GWP), and with support of IRI, the course strengthened regional capacity for the calculation and projection of the standardized precipitation index (SPI) as a tool to develop warning and alert systems for drought conditions.

This knowledge was then incorporated into the Regional Climate Outlook Forum (FCAC) that produces Seasonal Climate Outlook. This group has established a network to integrate data and SPI estimates for Central America, Colombia, Cuba, Mexico and the Dominican Republic.

Most of the countries involved in this effort experienced dry conditions in 2014; below-normal rainfall is expected in much of the region for 2015 as well. With this concern, CRRH-SICA and the Mexican Agency for International Development Cooperation (AMEXCID) convened a Regional Meeting on Methods for Monitoring Drought, which took place in Mexico City from 12 - 14 May 2015. 22 experts in climate monitoring and climate prediction attended.

Based on these experiences, participants formed a group to seamlessly generate monthly SPI values for Mesoamerica. The group agreed to integrate a regional register of stations for monitoring drought. Furthermore, they committed to providing information from those stations each month as part of a protocol for the exchange and use of information related to drought and to promoting the free exchange of tools in each country.

It is expected that the integration of this network will contribute significantly to the development of further information on rainfall deficits and persistence, as early guidance for managing the impacts of drought, while advancing the integration of the Center for Climate Services for Mesoamerica and the Caribbean (CSCMC) that have agreed to the heads of state of the region.

World Meteorological Congress agrees 2016-2019 priorities

World Meteorological Organization

The World Meteorological Organization's quadrennial Congress concluded on the 12 June, 2015, with the important adoption of a new strategic plan.

The strategic plan agrees on priorities for the global agenda post 2015. The key priorities include: disaster risk reduction; climate services to help climate change adaptation and sustainable development; capacity development; polar and high mountain region research and monitoring; and strengthened observation and information systems.

The Congress also agreed on a new budget strategy. Due to growing demands, Congress approved a 2% increase in the regular budget for the period 2015-16 to 266,2 million Swiss Francs. Additionally, Petteri Taalas, Director-General of the Finnish Meteorological Institute was appointed as the new Secretary-General for a four-year mandate starting 1 January 2016.

Global drive for Global Framework for Climate Services steps up a gear

World Meteorological Organization

The Global Framework for Climate Services (GFCS) is an WMO-spearheaded initiative, which looks to improve both provision and use of climate services, and seeks to help countries and communities prepare for, and cope with, climate variability and climate change.

GFCS has seen an increasing global drive, with a growing number of partners and interest. WMO Congress reviewed achievements and issues in the implementation of the initiative on 27 May. This saw the energy sector being added as a new priority following considerable support for this development being vocalized. Focus will be given to the importance and potential of renewable energy. This will be added to the other priority areas of agriculture and food security, water management, health and disaster risk reduction.

To ensure accessible and relevant information, the partnership base of the GFCS is encompassing increasing numbers of partner organizations across different sectors. The Partner Advisory Committee alone includes: the European Commission, EUMETSAT, Food and Agriculture Organization, International Federation of Red Cross and Red Crescent Societies, Global Water Partnership, IUGG, UN Environment Programme, UN International Strategy for Disaster Reduction, UN Institute for Training and Research, World Bank, World Business Council for Sustainable Development and the World Food Programme.

Towards high-resolution regional climate change simulations in Southeast Asia

Southeast Asia Regional Climate Downscaling (SEACLID)

Southeast Asia (SEA) is divided into two geographic regions: the maritime continent (Indonesia, East Malaysia, Singapore, the Philippines, East Timor, and Brunei) and the mainland or commonly known as Indochina (Cambodia, Laos, Myanmar, Thailand, Vietnam, and West Malaysia). Due to the geological structure and location of these countries, this part of the Earth is riddled with heavy seismic and volcanic activities as well as atmospheric phenomena such as the El Niño Southern Oscillation (ENSO), The Inter Tropical Convergence Zone (ITCZ), monsoons, and typhoons. Providing climate services to a population of more than half a billion and in a region which is not only topographically challenging but also socio-politically and culturally diverse, requires high resolution simulations.

In order to address this and to reach a better understanding on the regional climate change in Southeast Asia, the Southeast Asia Regional Climate Downscaling Experiment (SEACLID) has been established in 2013 and is currently funded by the Asia-Pacific Network for Global Change Research (APN) and grants from within the member institutions and countries. This project, which is a “bottom-up” initiative by climate scientists in the region, is now extending to participate in the WCRP CORDEX Initiative and is currently named as SEACLID/CORDEX-SEA.

According to Project Leader Prof. Dr. Fredolin Tangang, CORDEX Southeast Asia Point of Contact and IPCC Working Group I Vice-Chair, scientific literature and peer-reviewed publications from and about the Southeast Asia region are few. Therefore, the climatic changes in this region are not extensively discussed in the recent IPCC report.

To address these issues and to meet the growing demand in regional climate change information through collaboration, two consecutive workshops were organized to build on the capacity of the

Currently, **17 institutions from 13 countries** (seven from SEA region and six from outside) are involved in this project:

7 from: Malaysia, Indonesia, Vietnam, Thailand, Philippines, Cambodia and Lao PDR

6 from: Australia, Hong Kong Special Administrative Region, South Korea, United Kingdom, Sweden and Germany

scientists and to establish networking and cooperation within the region.

The workshops partly funded by the Asia Pacific Network for Global Research (APN) and Abdus Salam International Centre for Theoretical Physics (ICTP), and the WCRP CORDEX were the RegCM

Training Workshop for Southeast Asia held on May 25 – 29, 2015 and the 3rd Workshop of the SEACLID/CORDEX-SEA Project (Photo below) held on 1 – 2 June 2015 in Manila, the Philippines and hosted by the Ateneo de Manila University and Manila Observatory.

The workshops aimed to start building regional capacity for creating multi-model regional climate simulations with a resolution of about 25 km x 25 km and establishing new partnerships and stronger connections between the scientists. Within this project, it is hoped first that numbers of relevant publications will increase. The next steps will then be providing publicly accessible regional climate change data over Southeast Asia not only for the scientists but for stakeholders too.

For more information, please see: www.ukm.edu.my/seaclid-cordex



Australian Bureau of Meteorology detects 2015 El Niño
Australian Government Bureau of Meteorology

The Australian Government Bureau of Meteorology (BOM) announced detection of the return of the El Niño in early June 2015. International climate models that were surveyed by BOM suggest that the tropical Pacific is likely to experience further warming. With this, temperatures of sea surfaces are forecasted to stay above El Niño thresholds for rest of the year.

Typical El Niño characteristics in Australia are associated with below-average winter and spring rainfall over eastern Australia, and above-average daytime temperatures over the southern half of the country. The El Niño's strength however does not directly relate to the strength of its effects on Australia's climate.

BOM explains that most current oceanic and atmospheric indicators are consistent with El Niño patterns. Trade winds have proved to be consistently weaker than average, while the Southern Oscillation Index (SOI) is currently rising, as a result of local weather, as opposed to climate factors.

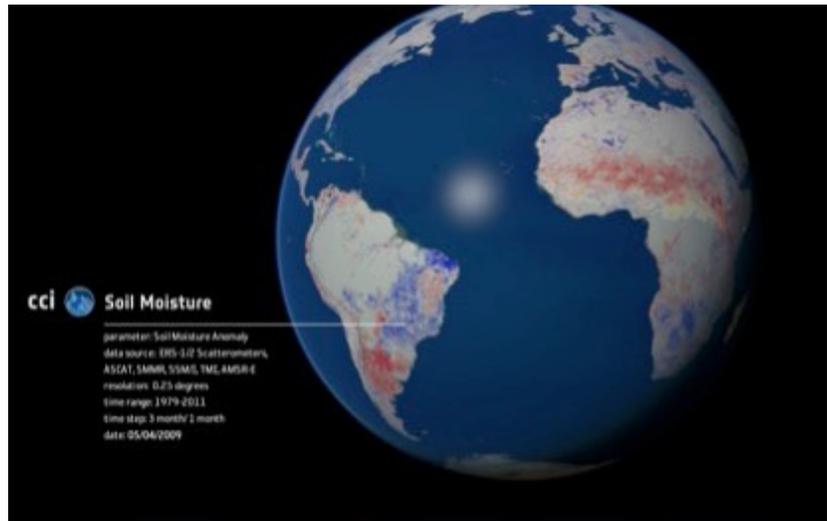
The past three months have seen the SOI exceeding the El Niño thresholds, averaging at -9.7. The date line was also observed to see more cloudiness, which has seemed to ease towards more normal levels, however, this could be only a short-term development.

The Indian Ocean Dipole (IOD)- a coupled ocean and atmosphere phenomenon that affects the climate of Australia and of other countries surrounding the Indian Ocean basin - is currently neutral. Two out of five

international models on IOD outlooks suggest a positive IOD in late 2015. A positive IOD is usually characterized with both a reduced winter and spring rainfall over parts of southern and central Australia.

Climate Quality Data for Climate Services: ESA's CCI
European Space Agency

The European Space Agency through its Climate Change Initiative (CCI) is using its extensive satellite observations to create climate quality datasets for use in climate services and climate research.



The CCI is developing 13 datasets for the following essential climate variables: land cover, burnt area, soil moisture (see screenshot below), glaciers and ice caps, ice sheets, sea ice, sea surface temperature, ocean color, sea surface height, greenhouse gases, ozone, aerosols, and clouds. The datasets are available as global, gridded products with uncertainty characterization, and with spans of up to 30 years.

All are freely available and in the future should be operationally supported and available in near real time. The datasets are currently being evaluated for climate quality by the Climate Modelling User Group (CMUG) of the CCI by application in reanalyses, climate modeling studies and model evaluation tools.

The CMUG can be contacted for information about the CCI in general or its potential input to European climate services by emailing Paul van der Linden at: paul.vanderlinden@metoffice.gov.uk or by going to www.esa-cmug-cci.org.



AGROCLIMAS and Food Security

AGROCLIMAS

Knowledge, sourced from both farmers and the science that supports them, is the backbone of climate-smart agriculture. New climate information tools which include historical analyses, monitoring systems, and agro-climatic forecasts have the power to help farmers adapt to the impacts of climate variability and change. By delivering targeted weather and market information directly to smallholder farmers, those farmers are better equipped to both protect themselves against extreme weather events and to take advantage of good conditions.

The goal of the project, Tailored Agro-Climate Services and Food Security Information for Better Decision Making in Latin America - AGROCLIMAS, is designed to help close this gap, taking into account the needs of the Latin American agricultural sector in terms of agro-climatic information and services in the context of climate variability. The project also evidences the technical capacity to address those needs through the collaboration with strategic partners.

Target countries: The project is implemented in Colombia, Guatemala and Honduras.

Deliverables:

- **Mapping networks:** Information flows and decision-making cycles to understand demand and gaps
- **Historical data:** Learning from the past - climate reconstruction, combine observations with satellite data
- **Food security indicators:** Household surveys, tracking of climate risk - Grameen Progress out of Poverty Index with gender-sensitive dimensions
- **Map rooms:** Website - regional observatory with agro-climatic data, tailored for specific users and updated

- **Agro-climatic forecasts:** Providing relevant future information - sentinel site network, combined with local information
- **Dissemination mechanisms:** Innovative “formats” of products, “translating” climate into agronomically relevant information

For more information of this project, please contact Diana Giraldo (d.giraldo@cgiar.org), AGROCLIMAS Project Leader.



Partners include:



recent publications

Title: NOAA Local Climate Analysis Tool (LCAT): Data, Methods, and Usability

Author(s): M. Timofeyeva-Livezey, Fi. Horsfall, A. Hollingshead, J. Meyers, L.n Dupigny-Giroux

Summary: The paper describes the Local Climate Analysis Tool (LCAT) that was developed to support delivery of climate services in National Weather Services field offices. The tool provides users with the ability to very quickly conduct local climate variability and change analyses using scientifically-sound techniques and trusted data, all identified by subject matter experts. Since its launch, the tool's use has spread to others across the National Oceanic and Atmospheric Administrations (NOAA) and to users throughout the external climate services community.

Link: dx.doi.org/10.1175/BAMS-D-13-00187.1

Title: Polar-lower Latitude Linkages and their Role in Weather and Climate Prediction

Author(s): T. Jung, F. Doblas-Reyes, H. Goessling, V. Guemas, C. Bitz, C. Buontempo, R. Caballero, E. Jakobson, J. Jungclaus, M. Karcher, T. Koenigk, D. Matei, J. Overland, T. Spengler, S. Yang

Summary:

This paper of outcomes from a meeting of eighty experts from twenty different countries at an international Workshop on Polar-lower Latitude Linkages in Weather and Climate Prediction, held in Barcelona Spain, 10-12th December 2014. The Workshop looked to assess recent progress in, and new directions for, our understanding of the mechanisms governing polar-lower latitude linkages and their role in weather and climate prediction including services.

Link: journals.ametsoc.org/doi/abs/10.1175/BAMS-D-15-00121.1

Title: Robustness of Ensemble Climate Projections Analyzed with Climate Signal Maps: Seasonal and Extreme Precipitation for Germany

Author(s): S. Pfeifer, K. Bülow, A. Gobiet, A. Hänsler, M. Mudelsee, J. Otto, D. Rechid, C. Teichmann, D. Jacob

Summary: The paper presents the method of developing climate signal maps, which can be used to identify regions where robust climate changes can be derived from an ensemble of climate change simulations. Here, robustness is defined as a combination of model agreement and the significance of the individual model projections. Climate signal maps do not show all information available from the model ensemble, but give a condensed view in order to be useful for non-climate scientists who have to assess climate change impacts during the course of their work. To illustrate the method, an application to changes of seasonal mean and extreme precipitation for Germany is shown.

Link: www.mdpi.com/2073-4433/6/5/677

Title: Subsidence and Human Influences in Mega Deltas: The case of the Ganges–Brahmaputra–Meghna

Author(s): S. Brown, R. J. Nicholls

Summary: Sea-level rise is an important driver of coastal flooding, but also important is the rate of land level change, as where land subsides, this enhances the rate of relative sea-level rise. In the Ganges-Brahmaputra-Meghna delta in

India/Bangladesh, land level change is very complex and poorly understood as it is spatially and temporary variable. The paper, for the first time, documents all known rates of subsidence, finding in excess of 200 measurements with a mean rate of 5.6 mm/yr, but once erroneous or vague rates were omitted, the mean rate decreases to 3.9 mm/yr. This has important implications as relative sea-level rise may not be as large as originally thought, thus potentially reducing impacts.

Link: www.sciencedirect.com/science/article/pii/S0048969715300589 The paper is open access, with supplementary material listing the rates of subsidence found in a spreadsheet and Google Earth file.

Title: Good Practice Study on Principles for Indicator Development, Selection, and Use in Climate Change Adaptation Monitoring and Evaluation

Author(s): P. Leagnavar, D. Bours, C. McGinn (A. Viggheam leader)

Summary: The Independent Evaluation Office of the Global Environment Facility (GEF IEO) has undertaken - on behalf of the Climate-Eval community of practice - a Good Practice Study on Indicator Development, Selection and Use Principles for Climate Change Adaptation Monitoring and Evaluation (M&E). This study identifies and addresses key challenges concerning M&E for climate change adaption. It does so by documenting good practices and good practice principles on the development, selection, and use of indicators used in the M&E of adaptation interventions. The study also emphasizes the importance of evaluative evidence supporting adaptation-related policymaking. Lessons learned and findings from evaluations can inform the direction of future policies. To capitalize on that opportunity, the report provides principles that can serve as guidance for both policymakers and evaluators in moving in a common and mutually supportive direction; one that maximizes collaborative evidence-based policy development.

Link: www.climate-eval.org/study/indicator-development-selection-and-use-principles-climate-change-adaptation-me

Title: Climatology in Support of Climate Risk Management

Author: G. McGregor

Summary: Given the burgeoning pure and applied climate science literature that addresses a range of climate risks, the purpose of this progress report is to provide an overview of recent developments in the field of climatology that may contribute to the risk assessment component of climate risk management. Data rescue and climate database construction, hurricanes and droughts as examples of extreme climate events and seasonal climate forecasting are focused on in this report and are privileged over other topics because of either their fundamental importance for establishing event probability or scale of societal impact. The review of the literature finds that historical data rescue, climate reconstruction and the compilation of climate data bases has assisted immensely in understanding past climate events and increasing the information base for managing climate risk.

Link: ppg.sagepub.com/content/early/2015/04/24/0309133315578941.abstract

Title: Evaluating the Performance of a Climate-Driven Mortality Model during Heat Waves and Cold Spells in Europe

Author(s): R. Lowe, J. Ballester, J. Creswick, J. Robine, F. R. Herrmann, X. Rodó.

Summary: This study evaluates the performance of a climate-driven mortality model to provide probabilistic predictions of exceeding emergency mortality thresholds for heat wave and cold spell scenarios. Overall, the model performed better for the heat wave scenario. By replacing observed temperature data in the model with forecast temperature from state-of-the-art European forecasting systems, probabilistic mortality predictions could potentially be made several months ahead of imminent heat waves and cold spells.

Link: www.mdpi.com/1660-4601/12/2/1279/htm

Title: Accessing and Using Climate Data and Information in Fragile, Data-Poor States

Author(s): S. Mason, A. Kruczkiewicz, P. Ceccato, A. Crawford

Summary: The vulnerability of populations in fragile states to weather and climate variability is typically much higher than in other countries. In order to address and reduce the risk that climate change and variability may pose to a fragile state's population and to peace-building progress, policymakers and peace-building practitioners must be able to access, understand and use information on the local, national and global climate. This report will provide peace-building practitioners with guidance for accessing and using climate data and information in fragile contexts

Link: static.weadapt.org/knowledge-base/files/1597/555473355688eaccessing-climate-data-information-fragile-data-poor-states.pdf

Title: From Airfield to the High Street: The Met Office's Role in the Emergence of Commercial Weather Services

Author: A. Hall

Summary: This paper explores the role of the United Kingdom's National Meteorological Service, the Met Office, in the early development (1945-1965) of applied, and subsequently commercial, weather and climatological services in the UK. Through examination of archival records it shows how theoretical and technological developments led to the post-war expansion of services for the general public and new user groups, resulting in funding pressure on the organization and the proactive seeking of non-government funding sources. The paper then explores the influence of these early developments on the subsequent large-scale expansion of applied and commercial services at the Met Office, which were to be enshrined in the organization's mandate when it became an Executive Agency under Prime Minister Margaret Thatcher's Efficiency Review in 1990.

Link: journals.ametsoc.org/doi/abs/10.1175/WCAS-D-14-00021.1

Title: Using Climate Information to Achieve Long-Term Development Objectives for African Ports

Authors: G. Woolhouse, D. Lumbroso

Summary: This policy brief focuses on port infrastructure in sub-Saharan Africa. It investigates the climate change risks, the use of climate services in decision-making and makes

recommendations for actions to enhance the resilience of port infrastructure.

Link: www.researchgate.net/profile/Darren_Lumbroso/publication/273456771_Using_climate_information_to_achieve_long-term_development_objectives_for_African_ports/links/550302d20cf2d60c0e64c587.pdf

Title: Confronting Farmers' Perceptions of Climatic Variability with Observed Relationships between Yields and Climate Variability in Central Argentina

Author(s): V. Hernandez, V. Moron, F. F. Riglos, E. Muzi

Summary: Farmers' perceptions of climate variability is compared with the sensitivity of observed yields for wheat, maize, soybean, and sunflower crops to inter-annual and intra-annual climate variability in two districts (Junín and San Justo) in central Argentina from the 1970s. A recent transition occurred here between mixed crop and livestock farming to a more specialized system, dominated by transgenic soybean combined with glyphosate. According to the ethnographic fieldwork, farmers ranked drought first and flood second as the main adverse climate factors in both districts. Overall, the farmers' representations fit rather well with the observed relationships between inter-annual variability of yields and rainfall, especially in Junín.

Link: journals.ametsoc.org/doi/abs/10.1175/WCAS-D-13-00062.1

Title: An Integrated Crop Model and GIS Decision Support System for Assisting the Agronomic Decision Making under Climate Change

Author(s): M.D.M. Kadiyala, S. Nedumaran, P. Singh, S. Chukka, M. A. Irshad, M.C.S. Bantilan

Summary: The present study analyzes the spatial variability of climate change impacts on groundnut yields in the Anantapur district of India and examines the relative contribution of adaptation strategies. For this purpose, a web-based decision support tool that integrates crop simulation models and Geographical Information System (GIS) was developed to assist agronomic decision making. This tool can be scaled to any location and crop.

Link: www.sciencedirect.com/science/article/pii/S0048969715003721

Title: Assessing and Hedging the Cost of Unseasonal Weather: Case of the apparel sector

Author(s): J. Bertrand

Summary: Retail activities are increasingly exposed to unseasonal weather causing lost sales and profits, as climate change is aggravating climate variability. Although research has provided insights into the role of weather on consumption, little is known about the precise relationship between weather and sales for strategic and financial decision-making. The paper's contribution is twofold. It provides a new general method for managers to understand how their performance is weather-related, and lays out a blueprint for tailor-made weather derivatives to mitigate this risk.

Link: www.sciencedirect.com/science/article/pii/S0377221715000326

upcoming events

in the climate services community

Our Common Future under Climate Change

Date: July 7-10, 2015

Location: France, Paris

Lead organization(s): ICSU, Future Earth, UNESCO and major French research institutions, with the support of the French Government

About: This four-day conference will be the largest forum for the scientific community to come together ahead of the 21st UNFCCC Conference of the Parties (COP21), to be held in Paris in December. Building on the results of IPCC 5th Assessment Report (AR5), the Conference will address key issues concerning climate change in the broader context of global change. It will offer an opportunity to discuss solutions for both mitigation and adaptation issues. The conference will also welcome side events organized by different stakeholders. It is organized under the umbrella of ICSU, Future Earth, UNESCO and major French research institutions, with the support of the French Government.

Link: www.commonfuture-paris2015.org

School on Modeling Tools and Capacity Building in Climate and Public Health

Date: July 20- 31, 2015

Location: Rio de Janeiro, Brazil

Lead organization(s): International Centre for Theoretical Physics (ICTP)

About: A number of diseases with high socioeconomic impacts have significant environmental drivers. Although there is a wealth of environmental remote sensing data freely available via the internet, these data are rarely converted to health-specific prediction models, to form planning and mitigation actions. This workshop aims to introduce several tools that can be used to access, visualize and analyze these datasets, and to show how such data can be extracted and converted into a format suitable to input into health early warning systems. There will be a range of lectures from experts in the fields of: fundamentals of environmental and public health interactions; use of observational, model and forecast climate data; remote sensing as a tool to manage environmental data; exploratory data analysis; time and space statistical modeling. All participants are encouraged to bring specific scientific questions and data that could be analyzed in their final project.

Application deadline closed February 28, 2015.

Link: indico.ictp.it/event/a14271/

6th Annual Conference on Climate Change and Sustainable Development

Date: July 30 - August 1, 2015

Location: Mumbai, India

Lead organization(s): Tata Institute of Social Sciences

About: The Centre for Climate Change and Sustainability Studies at the Tata Institute of Social Sciences (Mumbai) is organizing its 6th Annual conference on "Climate Change and Sustainable Development". The conference will seek to hold a major exchange of views amongst academicians, negotiators, policy experts, civil society, and research scholars with a special focus on climate negotiations, policy and decision making in the context of COP 21 which would encompass the key issues of equity, adaptation, and mitigation. The conference will have sessions on specific themes pertaining to climate change such as impacts of climate change, assessing vulnerabilities, debating emerging issues around climate science and modeling, as well as the concepts of adaptation, mitigation and sustainability.

Link: www.tiss.edu/

World Symposium on Climate Change Adaptation

Date: September 2-4, 2015

Location: Manchester, UK

Lead organization(s): Manchester Metropolitan University (UK), and the Research and Transfer Centre "Applications of Life Sciences", Hamburg University of Applied Sciences, Germany

About: The "World Symposium on Climate Change Adaptation" will focus on "innovative approaches to implement climate change adaptation", and will contribute to the further development of this fast-growing field. Organized by Manchester Metropolitan University (UK), and the Research and Transfer Centre "Applications of Life Sciences" of the Hamburg University of Applied Sciences (Germany), in cooperation with the International Climate Change Information Programme (ICCIP) and the United Nations University initiative "Regional Centres of Expertise on Education for Sustainable Development" (RCE), the Symposium will be a truly interdisciplinary event, covering some of the key areas in the field of climate change adaptation. The Symposium will be of special interest to researchers, government agencies, NGOs and companies engaged in the field of climate change adaptation, as well as development and aid agencies funding climate change adaptation process in developing countries.

Link: www.haw-hamburg.de/en/wscca-2015.html

15th European Meteorological Society (EMS) Annual Meeting & 12th European Conference on Applications of Meteorology (ECAM)

Date: September 7-11, 2015

Location: Sofia, Bulgaria

Lead organization(s): European Meteorological Society

About: The theme of the conference this year in Sofia, Bulgaria is, 'High impact weather and hydrological hazards: from observation to impact mitigation.' The considerable socio-economic costs of severe weather (such as intense precipitation, extreme temperatures and strong winds) and its impacts (including flooding, droughts, destruction of infrastructure, or forest fires) across Europe each year are increasingly apparent. The benefits of effective forecasting and warning are clear and quantifiable: lives are saved, communities are protected, and governments and businesses can take action to manage and mitigate risks. The ECAM theme for 2015 explores the end-to-end process of modern weather and flood risk forecasting. It will discuss optimizing use of observations and numerical weather prediction, through to the changing way meteorological information is presented to, and used by, forecasters, decision-makers and other end-users. The emerging concept of 'Big Data' and its application to operational meteorology will also be examined.

Link: www.ems2015.eu

Climate Week NYC

Date: September 21-27, 2015

Location: New York City, USA

Lead organisation(s): The Climate Group

About: Innovative leaders in business and sub-national governments will come together at Climate Week NYC, to showcase their transformational action and commitments to new low carbon economies. Using this high-profile international platform, they intend to leave national policymakers with no doubt that there is overwhelming demand for an ambitious global deal to be made at climate talks in Paris in December. With UN discussions on the Sustainable Development Goals taking place during the same week in New York City, Climate Week NYC 2015 will also provide a complementary opportunity to highlight how climate action and low carbon growth will benefit today's economy without compromising future generations.

Link: www.climateweeknyc.org/about-us/

Second International Conference on Global Food Security

Date: October 11-14, 2015

Location: New York, USA

Lead organization(s): Cornell University and Columbia University

About: The Second International Conference on Global Food Security aims to deliver state-of-the-art analysis, inspiring visions and innovative methods arising from research in a wide range of disciplines. The conference will address the food system activities of processing, distributing and consuming food, as well as food production from crop, livestock, tree, freshwater and marine sources; the availability, access, utilization and stability dimensions of food security; and the synergies and trade-offs between economic, environmental, health and social objectives and outcomes. The conference will thereby range across disciplines and spatiotemporal scales of analysis to span the drivers, activities and outcomes of food systems to encompass both contextualized and holistic treatments of the broad challenge of food security.

Link: www.globalfoodsecurityconference.com/