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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 in 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 Allyza Lustig at arlustig@iri.columbia.edu by **March 15, 2014**.

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

directions in climate services: messages from ICCS 3

letter from the CSP secretariat

Earlier this month, nearly 150 people from 35 countries assembled in Montego Bay, Jamaica for the third International Conference on Climate Services. After months of preparation, ICCS 3 was the signature international forum of the Climate Services Partnership for 2013, bringing a diverse audience of climate service researchers, service providers, users, and funders together to discuss current experiences, new ideas, and emerging issues in climate services.

In this context, ICCS 3 afforded a good opportunity to take stock of the current state of play in climate services development and to assess what is new. The conference and related side events provided a rich agenda focusing on different sectors, cross-cutting issues, and program initiatives. The various findings will surely inform the individual and collective work of our community, including the activities we organize under CSP. Here, I'd like to comment on just a few overarching messages from ICCS 3 that I think are particularly noteworthy.

One general message is that climate services are advancing at an amazing pace. Several participants remarked on the wealth of tools, projects, and programs presented at ICCS 3, relative to what was shared just a couple years ago when the first ICCS was convened. It's not just that our network of participating organizations and individuals has grown, though it has, we're also witnessing a dramatic increase in the number of new products, tools, resources, and program initiatives that have come online across a diverse and growing set of institutions over the last few years.

In many ways it is a greater challenge to keep abreast of important developments in climate services today than ever before, and this underscores the importance of what has been a focus for CSP from the outset – creating a medium for effective exchange of knowledge, information, and resources.

As for emerging issues, the ethics of climate services was the featured topic of discussion in a special side event in Jamaica. I previewed this topic in the last edition of this newsletter, noting that climate services ethics engages with both the direct and indirect consequences of service delivery, and how the interests of different stakeholders could and should be recognized in development and provision of climate services. At issue are questions of accountability, responsibility, quality assurance, and standards of good practice in the conduct of climate services.

While these questions have been largely absent in international climate services dialogue to date, the side event drew wide participation and interest. Clearly, many more members of our community have recognized the importance of these issues, and in some cases have actively been thinking about them, than any of us had imagined.

From the side event's discussion, two ideas emerged for further consideration; this includes standards for quality assurance in information provision and principles to guide the conduct of climate services provision. Participants recognized these as highly challenging topics for our community, yet overwhelmingly endorsed a proposal to organize a working group activity to address these issues. We are very excited to support this effort through CSP – and to work together with the Global Framework for Climate Services on this issue, who also have pledged support.

In terms of climate services demonstration projects, we were very impressed by recent progress made on the agricultural climate services in Jamaica, which was presented in a parallel session. Less than a year after the project began, the session highlighted its targeted climate products, focusing on drought-related risks, and associated farmer advisories and training programs were developed and implemented, with a process to elicit farmer feedback for evaluation and further refinement put in place. The session also highlighted plans for the development of value-added information on more specific agricultural risks and risk management strategies, new partner collaborations, and resourcing requests to support further service development.

The success of this project demonstrates what can be accomplished, even over a short period, when several key elements are in place, including: high-level governmental support and facilitating policy; an effective collaboration mechanism among key partner groups and agencies (meteorological and agricultural); institutional commitments to support the process; and access to relevant technical support. While unique to Jamaica, this experience also resonated with the broader community and is a prime example of experience that we can capture and make available through CSP.

In addition to pointing out these issues, I want to direct your attention to the ICCS Conference Report, which will be available on our website shortly, and will address overarching take-away points regarding several cross-cutting issues, including capacity building; stakeholder engagement; fostering good practice; investment in climate services; and prioritizing research. The relevance of these topics was reinforced by the many discussions of the conference, where similar questions arose time and time again. These five topics will be at the forefront of thinking about the future activities and directions of CSP, which will be developed over the coming months, and discussed in forthcoming issues of this report.

Coming out of ICCS 3, all signs are that this forum continues to be a valuable platform for knowledge sharing, new ideas, and partnership building. We already have a few early signals of interest for ICCS 4 so there will hopefully be a lot more to report on that front in the coming months.



the third international conference on climate services



“Nobody’s coming to climate services knowing the entire value chain from science to end-user, and so when we bring these multiple partners together, everybody has something to learn.”

-- Emily CoBabe-Ammann, UCAR

iccs 3 at a glance

The [third International Conference on Climate Services](#) (ICCS 3) took place in Montego Bay, Jamaica on December 4-6. The CSP secretariat was delighted with turnout and with participation in the event and very much appreciate the energy and enthusiasm of our sponsors, host organizations, session leads, speakers, trainers, and participants. We certainly learned a lot and enjoyed the range of rich discussion; we very much look forward to building on the lessons shared and generated in Jamaica.

A special thanks is due to the US Agency for International Development, the Climate Change Agriculture and Food Security theme of the CGIAR, and the National Oceanic and Atmospheric Administration for sponsoring the event. Thanks also goes to the local hosts, the Jamaican Meteorological Service and the Jamaican Ministry of Water, Land, Environment and Climate Change and to representatives from many other organizations for serving on the conference organizing committee.

Coverage of the conference, including video summaries of parallel sessions, is available on the conference blog, [here](#).

Presentations from the conference are found [here](#). The conference report will follow shortly.

ICCS by the numbers ...

- 145** participants
- 92** organizations
- 35** countries
- 16** parallel sessions
- 76** speakers
- 28** tools presented
- 4** tools training sessions
- 9** side events

Conference feedback is being gathered [here](#). Please do let us know what you think!

Looking forward to ICCS 4: Do you have thoughts about the next conference? Please be in touch.

the climate services partnership at UNFCCC COP

The CSP/USAID side event on climate services took place on 15 November, 2013 at the nineteenth session of the United Nations Framework Convention on Climate Change Conference of the Parties (UNFCCC COP 19). The event highlighted collaborative efforts to coordinate and implement climate services on local to global scales and was hosted at the US Center within Poland's National Stadium. It was also broadcast through the Center's website.

The side event began with a game on climate information for disaster risk management, which was facilitated by Pablo Suarez (Red Cross Climate Centre). The game provided a context for the rest of the day by demonstrating the difficulties and consequences faced by operational disaster risk managers in making decisions using climate information.

The Global Framework for Climate Services (GFCS) was represented by World Meteorological Organization's (WMO) Christian Blondin, who shared the advances made by the GFCS toward implementation of the Framework, the coordination of the World Health Organization (WHO), the Red Cross, the CGIAR research program on Climate Change, Agriculture, and Food Security (CCAFS), and national governments.

The CSP's approach to fostering these and other innovative collaborations was then presented by Hareesh Bhojwani of the International Research Institute for Climate and Society (IRI). Bhojwani also reviewed the CSP's knowledge management, evaluation, and coordination efforts to date,

CSP members Rachel Lowe (IC3) and Caspar Ammann (NCAR) co-convened a session "Translating Science into Action: Innovative Services for the Geo- and Environmental Sciences in the Era of Big Data" at the 2013 American Geophysical Union's [46th annual Fall Meeting](#) in San Francisco, United States, 9-13 December 2013.

Traditional post-processing of geo- and environmental-science data, such as climate projections, ensembles simulations, and downscaled model outputs often fail to address the needs of practitioners in various sectors. This is partially due to the lack of appropriate information and metadata; it is also partially explained by the lack of standardized strategies to compare, evaluate, and use such data appropriately. In an era of advancing technologies and analytical tools, Big Data is altering the way scientists study and analyze information. Novel tools are being developed to illuminate data quality, at multiple spatio-temporal scales, and develop decision-relevant applications.

including the case studies and other resources available on the CSP's website.

Jeffrey Spooner (Director of the Jamaican Meteorological Service [JMS]) followed with a description of the collaboration between the JMS, the Caribbean Institute for Meteorology and Hydrology (CIMH), the WMO, the Jamaican Rural Agriculture Development Authority (RADA), IRI, and others to develop a drought early warning system for smallholder farmers in Jamaica.

Edward Carr (University of South Carolina) then shared insight from the evaluations of climate services for smallholder farmers in Mali and India. He highlighted new approaches to address gender and other equity issues in climate services design and implementation.

The session was chaired by John Furlow (USAID), who ended the side event by explaining why climate services are important to development and adaptation. Furlow also highlighted recent work in Jamaica in coordination with the Jamaican government and the Inter-American Development Bank (IDB) to shape capacity building and equipment investments to better meet development needs.

The event provided several great examples of the work being led by members of the CSP, and exemplified the ways in which collaboration is critical to success at all scales of climate services implementation.

climate services at AGU

In the session, invited speakers presented innovative approaches for the quantitative evaluation of environmental and geoscience science data (e.g. observations, forecasts and projections) across multiple spatio-temporal scales and their use for applications. Speakers also shared strategies to more effectively present and disseminate evaluation results to decision makers for improved knowledge exchange between users and producers of climate information in climate-sensitive sectors (e.g., water, energy, health, agriculture, ecosystems).

The poster session featured papers from IC3 on the visualization and communication of probabilistic forecast information as well as statistical and dynamical modelling techniques to analyze the impact of climate on mortality in Europe, dengue in Thailand, and Chikungunya in Cambodia. A rainfall-runoff model for prediction of waterborne viral contamination in river catchments was also presented.

Details of the meeting and scientific program can be found at <http://fallmeeting.agu.org/2013/>

community spotlight

a conversation with Alicia Martins, Ministry of Agriculture, Livestock, and Fisheries, Uruguay



Alicia Martins, advisor to the Ministry of Agriculture, Livestock, and Fisheries in Uruguay, talks with us about her work and its relation to climate services.

Please describe your work in climate services.

I work as an advisor to the Ministry of Agriculture, Livestock, and Fisheries in Uruguay, where I help to implement projects related to sustainable intensive agriculture. Public policies need to include socially inclusive tools and technologies for family farmers to use to adapt in order to make their farms less vulnerable to climate-related impacts.

Climate services are important to reducing vulnerability and building resilience at the farm level, especially in the face of an increasing frequency of extreme events and rainfall variability throughout the country.

How does climate change and/or variability affect your country/region or the countries/regions you work in?

Due to an increase in agricultural prices, demand for land has increased and production systems have become more intensive. Climate variability is a huge risk for production sustainability and for Uruguay as a whole. Nearly 70% of Uruguayan exports depend on agriculture, and agriculture in Uruguay is climate dependent because production is rain fed. In the last severe drought in 2008, losses in the agricultural sector were around USD \$342 million.

Because of the multiplying effect, the impact on the entire economy was near USD \$1 billion..

How can climate services mitigate these impacts and/or take advantage of opportunities?

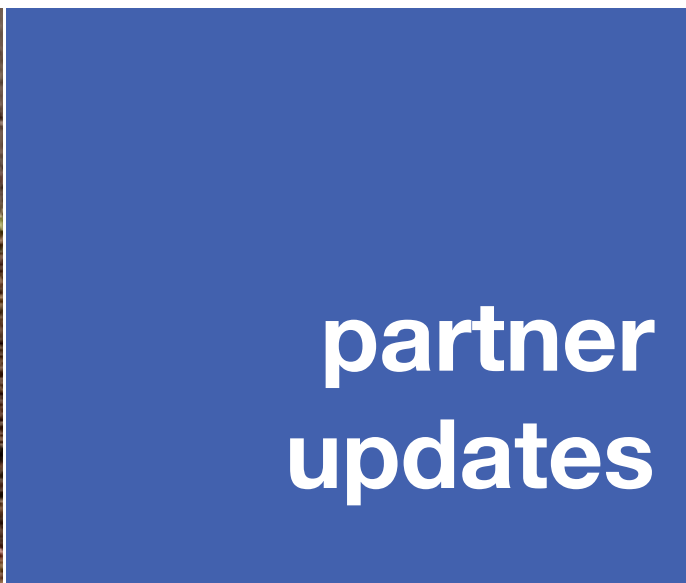
Improving our understanding of the climate system, and reducing uncertainties related to climate change, can help us to identify technologies that reduce vulnerability and create political arrangements to foster resilience. We need to improve tools and methods for better and more flexible adaptation to climate change. For example, we can improve decision making in early warning systems. We can also respond sooner to emergencies; issue better crop forecasts; offer better and cheaper climate index insurance for agriculture; provide better information to guide energy generation; and supply better information for decisions about food security and food safety, among other things.

“Improving our understanding of the climate system, and reducing uncertainties related to climate change, can help us to identify technologies that reduce vulnerability and create political arrangements to foster resilience.”

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

Climate information needs to be communicated in an easy way to both farmers and decision makers. We need to make an effort to integrate knowledge and data for better decision making at all segments of society.





CCAFS open call for concept notes

CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS). The CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS) is pleased to announce two open calls for concept notes. CCAFS is looking for concept notes that will:

- help develop CCAFS portfolio of work related to climate smart agricultural practices, specifically around the area of local adaptation planning processes, and scaling up and out approaches (Flagship 1).
- contribute to the resilience and adaptive capacity of agriculture through climate information services and climate-informed food security safety nets (Flagship 2).

Deadline for submission of the concept notes is 1 March 2014 at 5 pm CET.

Learn more and download the open calls here: <http://ccafs.cgiar.org/call-concept-notes-ccafs-flagships#.UqstH9JDvAh>

IRI/USAID new training webcasts for climate-resilient development

International Research Institute for Climate and Society (IRI), United States Agency for International Development (USAID). The IRI and the US Agency for International Development's Global Climate Change Office have jointly launched a webinar series on climate-resilient development. The webinar topics address some of the IRI's and USAID's most frequently encountered questions from development professionals. The webinar series was officially launched on December 4, 2013.

In each of the webinars, the scientists introduce themselves, the concepts behind their work, and demonstrate how climate services can inform development decision-making for improved outcomes. Topic include (1) general circulation models (GCMs) and how they are used to make climate forecasts and climate projections; (2) the terms and concepts used by the Intergovernmental Panel on Climate Change to describe certainty and uncertainty in climate-model projections of future change; and (3) key challenges around

the availability of and access to climate data, and how satellite data and weather station data have been combined to help resolve this challenge in Africa. The final segment of the webinar summarizes the main concepts presented and offers tips on how to deploy these concepts in climate-resilient decision making and planning.

Read more: <http://iri.columbia.edu/news/iri-usaids-new-training-webcasts-for-climate-resilient-development/>

DQ and CPT trainings for scientists in Southeast Asia

International Research Institute for Climate and Society (IRI). A series of workshops have recently been conducted in Lao PDR and Bangladesh as part of a two-year initiative led by the International Research Institute for Climate and Society (IRI) to help farmers in Indonesia, Lao PDR, and Bangladesh reduce their vulnerability to climate risks. Funding for the initiative is from the International Fund for Agricultural Development (IFAD).

In November, the Centre for Climate Risk and Opportunity Management in Southeast Asia Pacific (**CCROM - SEAP**) conducted a five-day data quality (DQ) training workshop for Lao PDR's Department of Meteorology and Hydrology (DMH) and the National Agriculture and Forestry Research Institute (NAFRI). The training targeted climate and agricultural research scientists, introducing them to DQ concepts and tools. Scientists were guided through exercises on developing a quality-controlled dataset to support climate analysis and the issuing of quality climate forecasts. IRI scientist Simon Mason followed up with an additional training in December to assist DMH scientists in using the Climate Predictability Tool (CPT) to analyze the dataset produced in the November workshop and produce seasonal climate information products for the agricultural sector.

Mason also conducted a five-day workshop for the Bangladesh Meteorological Department (BMD) in Dhaka. During the training, scientists were introduced to CPT functionality and use and guided through exercises using CPT for climate analysis. Participants also assessed forecast skill in the area



and identified next steps toward creating usable climate information for farmers.

Enhancing National Climate Services (ENACTS) launches Madagascar map room

International Research Institute for Climate and Society (IRI). Enhancing National Climate Services (ENACTS) aims to support decision-makers in climate-sensitive sectors by filling spatial and temporal gaps in existing climate observations and providing an array of derived products available to users online. In collaboration with national meteorological agencies, IRI has endeavored to combine satellite data with station observations in Ethiopia, Madagascar, Tanzania, and, in partnership with AGRHYMET, countries of the Permanent Inter-state Committee for Drought Control in the Sahel (CILSS). A similar approach is also being conducted in Uruguay. Through ENACTS, national meteorological agencies have also been supported in the development of their own virtual map rooms (Ethiopian Meteorology Agency map room [here](#), and Tanzanian Meteorological Agency map room [here](#)). The high-resolution gridded climatology and the publicly available web-based tools to analyze the data are the first of their kind in Africa. The Malagasy meteorological office launched its map room in December 2013 and can

be found [here](#). IRI develops the methodology for merging, works with local meteorological agencies to develop the data products, develops the software to adapt to local hardware, installs software, and trains local staff in-site for the use and maintenance of the different software, thus facilitating data analysis, visualization, and dissemination.

Water and Climate Education Program (WACEP): Short Courses in Climate Risk Management and Water Resources Management

International Research Institute for Climate and Society (IRI), University of the West Indies (UWI) - Centre for Resource Management and Environmental Studies (CERMES). The Water and Climate Education Program (WACEP) is a series of four courses presented jointly by Columbia University and the Centre for Resource Management and Environmental Studies (CERMES) of the University of the West Indies (UWI). The courses are developed through "Building Capacity to Manage Water Resources and Climate Risk in the Caribbean," a project funded by the Department of State (DOS) through the United States Agency for International Development (USAID), Higher Education for Development (HED), and The Energy and Climate Partnership for the Americas (ECPA). WACEP is meant to provide

participants with the knowledge and concepts necessary to manage water resources and risk related to climate change and variability. The courses are free of charge and will be taught at the University of the West Indies (UWI) campus in Barbados. WACEP will also be available online for participants joining the course remotely.

Course 1, Introduction to Water Sustainability and Climate, will be held from 13-24 January 2014. Course 2, Climate Information and Predictions from Seasons to Decades, will be held in February 2014. Course 3, Climate Information for Improved Water Management will take place in June/July 2014. Course 4, Water Planning and Policy for Climate Variability and Change, will take place in October 2014.

There are no prerequisites for this course, though it is recommended that the four courses be taken sequentially. Registration has closed for the first two courses, and will be open for Courses 3 and 4 this spring. Please note that this year's courses are only open to participants in the Caribbean, though they may open for other regions in the coming years. All participants must have some background (academic and/or professional) in either of both of climate science and water management. For more information, please visit www.waceponline.org, <http://www.climate-services.org/caribbean-climate-and-water-community-practice> or contact wacep@iri.columbia.edu

Quarterly Regional Climate Impacts and Outlooks US National Oceanic and Atmospheric Administration (NOAA).

In December 2013, NOAA's Regional Climate Services program released its latest round of quarterly regional climate impacts and outlooks. NOAA's National Climatic Data Center leads the production of these quarterly syntheses of climate impacts and outlooks for many regions of the United States and in partnership with Canada and Mexico. The syntheses highlight recent and current climate issues at regional scales, utilizing NOAA's monitoring and assessment capacity. This effort began in 2012 and now includes at least 10 unique regional prototypes, all produced collaboratively with partner organizations. The latest quarterly regional climate impacts and outlooks are available at www.drought.gov/drought/content/resources/reports.

IFRC at COP 19

International Federation of Red Cross and Red Crescent Societies (IFRC). The IFRC sent a 30-person delegation to COP 19 in Warsaw, comprised of 15 National Society members with an interest in climate and technical specialists from the IFRC secretariat and the Climate Centre. The IFRC's exhibition at the main COP 19 venue included videos, briefings on humanitarian issues, and educational games.

"It's vital for humanitarians to be involved in the COP discussions," said Walter Cotte, IFRC Under Secretary General, Program Services Division. "It offers an opportunity for our National Societies to work with their government counterparts on common objectives for climate-related issues. Climate change increases both the risk and consequences of disaster for millions of vulnerable people; spreading the knowledge and skills to deal with a crisis at a local level – while advocating for better disaster laws at a governmental level – will improve response and resilience among those most likely to be at the center of events."

The Development and Climate Days ("**D&C Days**") were hosted by the Climate Centre and brought together policy-makers, scientists and development practitioners. The Climate Centre and the [Global Environment Facility](#) also facilitated a program to showcase practitioners' field experience, and the Climate Centre and the [International Institute for Environment and Development](#) hosted several pioneering, game-based events to climate-change education and capacity building.

Read more: <http://www.climatecentre.org/site/news/482/ifrc-co-hosting-side-events-at-cop-19-ahead-of-critical-year-for-climate?type>

Ready! The potential of serious, fun games

International Federation of the Red Cross and Red Crescent Societies (IFRC). Using materials such as dice, beans, pencils, and paper, games designed to raise awareness about climate risk and management can be played with everyone from national-level policy makers to climate service users at the grassroots level. In Warsaw, approximately sixty COP19 participants from countries including Uganda, the Philippines, and Poland immersed themselves in the interactive experience.

Participants agreed that if the game were to be played among community members or decision makers, it would be an effective way to start discussions about the strength and value of their emergency preparedness plans. A full report on games work to date, originally prepared for CDKN and recently updated, is available [here](#).

Read more: <http://www.climatecentre.org/site/news/488/can-beans-and-dice-change-lives-the-potential-of-serious-fun-games?type>

IFRC at European Development Days

International Federation of the Red Cross and Red Crescent Societies (IFRC). This year's [European Development Days](#) (EDD13) gathered thousands of leaders, experts, and practitioners from international organizations, government, and the private sector to "shape a new development agenda" to eradicate poverty and promote sustainable development. EDD13 featured a prominent IFRC presence.

The Climate Centre and the Brussels-based [Red Cross EU Office](#) convened a session on climate-risk assessments, focusing on "how to link information to decisions, in practice and policy."

A presentation by Dr. Thorsten Klose, Senior Adviser for Disaster Risk Reduction and Climate Change Adaptation at the German Red Cross Red Cross, illustrated how an innovative fund, recently rolled out in Africa, linked with seasonal forecasts of extremes like floods and droughts enabled response to potential, not just actual, disasters – helping to mitigate them in advance.

Jane Madgwick, chief executive officer of [Wetlands International](#), one of the lead agencies in the [Partners for Resilience](#) alliance, demonstrated how partnerships created at the village level have brought significant benefits in the short term, and may be able to influence public policy in the long term.

Finally, a presentation from the Austrian Red Cross focused on local capacity building, citing the example of Croatia's national heat wave plan created to support vulnerable people, particularly the elderly.

Read more: <http://www.climatecentre.org/site/news/493/european-development-days-in-brussels-includes-brainstorm-on-climate-risk-assessments?type>

CCORAL garners international recognition
Acclimatise. The [Caribbean Climate Online Risk and Adaptation tool \(CCORAL\)](#) was recently recognized at an international risk management awards ceremony.

CCORAL, a web-based tool designed to help decision-makers in the Caribbean integrate climate resilience into their decision-making and planning processes, was developed by the [Caribbean Community Climate Change Centre](#) with technical support from [Acclimatise](#) and funding from the [Climate and Development Knowledge Network \(CDKN\)](#).

CCORAL helped Acclimatise to win Consultancy of the Year award at the [CIR magazine Risk Management Awards 2013](#). The award recognized "consultants that deliver real creative thinking and innovation to risk management."

Acclimatise CEO and CO-Founder John Firth was especially pleased that CCORAL had been recognized saying "This award is really an honor that we share with the Caribbean Community Climate Change Centre. It is fantastic that CCORAL has been recognized in this way and further underlines what a powerful tool it is for climate risk management in the Caribbean region."

The award follows a series of successes for CCORAL, which was referred to recently in the Jamaican parliament, with the minister for Water, Land, Environment and Climate Change, Robert Pickersgill, saying that the tool will be used "to assess the risk of community and national projects against specific climate change scenarios." The chairman of the Intergovernmental Panel on Climate

Change (IPPC), Dr. Rajendra Pachauri also praised CCORAL saying "The development of the... tool [is] an extremely important asset in assessing the risk from the impacts of climate change in the Caribbean region."

UNDP takes a holistic approach to L&D from climate-related disasters

United Nations Development Program (UNDP). The Warsaw International Mechanism, developed at the UNFCCC Conference (CoP19), calls policy-maker attention to issues of loss and damage (L&D) due to climate-induced extreme and slow-onset events. The mechanism was established as a compromise following much debate; the resulting document acknowledges that L&D "includes, and in some cases involves more than, that which can be reduced by adaptation" and agrees to strengthen support L&D without specifically defining the related financial issues.

UNDP has an extensive portfolio of activities in support of developing countries strengthening their resilience to climate impacts – both extreme and slow-onset. This includes the implementation of L&D-related projects and programs in five regions. The UNDP approach focuses on data management for L&D to assist vulnerable countries' endeavors to design strategic risk management interventions and to ensure that they have the necessary information and associated capacities for integrated planning and informed decision making.

To date, UNDP has supported the establishment of several national disaster L&D databases and published a [comparative review of national and regional databases](#). Further, UNDP has initiated an analysis of climate risk information in 17 countries and the findings inform the implementation of an integrated climate risk management program (ICRMP). The UNDP approach focuses on data management for L&D to assist vulnerable countries' endeavors to design strategic risk management interventions and ensure that they have the necessary information and associated capacities to enact integrated planning and informed decision-making.



Annual Italian Society for Climate Sciences (SISC) Conference 2013: Climate change and its implications on ecosystem services and society

Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC). The First Annual Conference of SISC (Italian Society for Climate Sciences) took place in Lecce, Italy, September 23-24, 2013. The conference, "Climate change and its implications on ecosystem services and society," involved scientists, researchers, and policy makers whose work connects with the climate system and its role in shaping environmental and socio-economic systems. SISC was established as interdisciplinary platform to converge traditional disciplines in a multidisciplinary arena. Scientific presentations were divided in plenaries, parallel, and poster sessions and addressed three main topics (Advances in Climate Science, Implications on ecosystem services, and Climate policy and economic assessments). The Proceedings of the Conference are available for download on the SISC website (www.sisclima.it).

Read more: www.sisclima.it/conference2013

Climate Knowledge Innovation and Community (KIC) joint meeting on adaptation services and land and water engineering for adaptation platforms

Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC). Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC) hosted the first joint meeting of the Adaptation Services (AS) and Land and Water Engineering for Adaptation (LWEA) platforms of the Climate KIC (<http://www.climate-kic.org/>) initiative in Bologna on 19 November. The goal was to provide a platform to introduce strategies, publicize existing project portfolios, and provide opportunities for ideation and partnership mapping.

Various presentations were made by CMCC members: Silvio Gualdi on "Climate Services from CMCC," Sergio Castellari on "Work in progress towards an Italian National Adaptation Strategy NAS," Jaroslav Mysiak on "Disaster risk: economic impacts and policy instruments," Fabio Eboli on "Macro economic tools for adaptation cost benefit assessment," and Jonathan Rizzi on "Climate risk and adaptation services in coastal zones." The city of Bologna, a CMCC collaborator, presented its ongoing work on the adaptation plan for the city.

The meeting closed with a summary of collaborative actions possible for AS and LWEA, including, for example, proposal evaluation and the identification of overlaps. Both groups agreed on the need to collaboratively focus their goals and strategies and communicate needs more broadly.

Read more: <http://cmcc.it/climate-kic2013/>
Contact: Eva.banosdeguisaisola@cmcc.it

The program for implementing GFCS at Regional and National Scales

Global Framework for Climate Services (GFCS), World Meteorological Organization (WMO). The "Climate Services Adaptation Program in Africa," launched on 15 October 2013, is the first multi-agency initiative to be implemented under the Global Framework for Climate Services (GFCS). The program, which received funding from Norway (USD 10 million), will help build integrated frameworks to develop climate services for

food security, nutrition and health, as well as disaster risk reduction in Malawi and Tanzania.

In the Pacific, the Caribbean, South Asia and the Arctic, GFCS is being implemented through a program funded by a grant of \$6 million CAD from Canada. The "Program for implementing GFCS at Regional and National Scales" aims to enhance resilience to climate variability and change in social, economic, and environmental systems. As a first step, a regional consultation is being planned for small island developing states in the Pacific from 30 March to 5 April 2014 in the Cook Islands.

Following the recommendations of the regional consultation for the Caribbean (May 2013), a national consultation for climate services was held in Belize last October. It brought together practitioners and decision-makers from government institutions, universities, and the private sector to identify appropriate mechanisms and networks to improve and sustain the flow of climate information for different users.

Read more: <http://www.gfcs-climate.org/>

CPT for Drought Forecasting

Latin American Observatory (OLE2), Caribbean Institute for Meteorology and Hydrology (CIMH), and the Central American Regional Committee for Hydrologic Resources (CRRH). The [Latin American Observatory \(OLE2\)](#), [Caribbean Institute for Meteorology and Hydrology \(CIMH\)](#), and the [Central American Regional Committee for Hydrologic Resources \(CRRH\)](#) are currently developing a collaborative effort to share data, products, and experiences related to drought forecasts via a new feature of International Research Institute for Climate and Society's [Climate Predictability Tool](#). Ultimately, the goal is to use the Standardized Precipitation Index (SPI) throughout Central America, the Caribbean, and Northern South America to evaluate the best configurations possible to produce drought forecasts usable by decision-makers in sectors such as food security, energy, and water resources.

Task Force on Seasonal Climate Predictions

National Institute for Space Research (INPE). The Ministry of Science, Technology, and Innovation (MCTI) of the Federal Government of Brazil has created a Task Force on Seasonal Climate Predictions (TFSCP), which includes climate researchers from the National Institute for Space Research (INPE)'s Center for Weather Forecast and Climate Studies (CPTEC), the Center for Earth System Science (CCST), the National Institute for Amazonian Research (INPA), and the Center for Monitoring and Early Warning of Natural Disaster (CEMADEN). The Task Force is responsible for reviewing and revising the methodology employed to generate seasonal climate predictions developed across MCTI's institutions. The group will also generate monthly climate outlooks, with focus on the key regions of the nation impacted by drought and other severe climate conditions.

The first National Conference on Climate Change Research

National Institute for Space Research (INPE). The first National Conference on Climate Change Research (CONCLIMA) took place from 9-13 September 2013 in São Paulo, Brazil. The conference brought climate scientists together from the three

largest climate change research programs in Brazil: the National Network on Global Climate Change Research (Rede CLIMA), the National Institute on Science and Technology on Climate Change (INCT-MC), and the FAPESP Research Program on Global Climate Change (PFPMCG). CONCLIMA highlighted the most recent results of climate change research in Brazil, covering a diverse range of work including the construction of the Brazilian Earth System Model (BESM), applied research in agriculture, energy, and water resources, as well as impact assessment and adaptation strategies.

Earth League Annual Workshop: The world under 2 - 4 degrees warming
Climate Service Center, Germany (CSC).

The Earth League, initiated by Climate Service Center, Germany (CSC), is planning its first annual workshop, to be timed with the release of the final section of the IPCC AR5 (WGIII), in late April 2014. The workshop will be held in Santa Fe, New Mexico (United States) and will address the emerging theme "The world under 2 - 4 degrees warming." At the workshop, Earth League members and international scientists working in research, policy, and in on-the-ground projects will come together to explore the impacts of and ways to prepare for a 2-4 degree temperature rise. More specifically, it will explore issues such as innovative approaches to integrated Earth system modeling, missing links in mitigation, and rapid urbanization. This highly interactive workshop aims to inform policy-makers, identify important new directions for research, and initiate short-term joint projects to realize the goals identified throughout the event.

Read more: <http://www.the-earth-league.org/>

Third Workshop of the EURO-CORDEX Initiative

Climate Service Center, Germany (CSC). The third Workshop of the EURO-CORDEX Initiative was held in October 2013 by the Climate Service Center, Germany (CSC). Approximately 30 experts in regional modeling came to Hamburg in order to discuss the latest model results, common methodologies, and joint publications. Results from EURO-CORDEX are part of the Fifth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC AR5) and will be used throughout Europe as input for impact models. In EURO-CORDEX, an ensemble of high-resolution regional climate simulations is generated in order to better assess the development of future climate in Europe. This ensemble is steadily growing and will be freely available by the end of this year.

Read more: www.euro-cordex.net

IMPACT2C: Quantifying projected impacts under 2°C warming

Climate Service Center, Germany (CSC). IMPACT2C is a 4-year research project, which started in October 2011 and aims to quantify projected impacts under 2°C warming. The project is funded by the European Commission's 7th Framework Program and is coordinated by the Climate Service Center (CSC), Germany.

The project's goal is to adopt a clear and logical structure within climate and impact modeling, vulnerabilities, risks, and economic costs, as well as potential responses within a pan-European, sector-based analysis. IMPACT2C includes case studies for some of the world's most vulnerable regions: Bangladesh, the Nile and Niger river basins, and the Maldives.

Because stakeholder involvement is a high priority in IMPACT2C, several

upcoming meetings are planned for 2014 to reveal and apply the stakeholder needs for interpreting the scientific results of the project. Policy briefing, as one dissemination tool for IMPACT2C results, was initialized and introduced at the COP19 Side Event ("Urban Action Global Scenarios for 2°C: feasibility, implication and impacts") in Warsaw in November 2013. Similarly, in November the third General Assembly took place in Rome hosted by ENEA.

News and updates for the IMPACT2C project can be found here: www.impact2c.eu

CATALYST-Local Winter Academy for disaster risk reduction and climate change adaptation

Climate Service Center, Germany (CSC). Together with several partners ([Society-Economy-Ecology-Consulting \[seeconsult\] GmbH](#); the Research Program on Climate Change [PINCC] of the [Autonomous University of Mexico \[UNAM\]](#); the German [United Nations University Institute for Environmental and Human Security](#); [University of Guanajuato](#), Mexico; the [Integrated Assessment Society \[TIAS\]](#), Germany), the Climate Service Center, Germany (CSC) organized the "CATALYST-Local" Winter Academy with participants from across Europe and Mexico. The academy was implemented in the Guanajuato State in Mexico and took place from 1-13 December 2013. Students and post-doctoral researchers learned from experienced trainers and local communities about both the theory and practice of disaster risk reduction and climate change adaptation. This training event was successful in informing participant research activities and increasing their practical knowledge about the possibilities for and limits to the implementation of the theory at the community level.



recent publications

the latest publications from the CSP community

Title: Climate simulation and change in the Brazilian climate model

Authors: Paulo Nobre, Leo S. P. Siqueira, Roberto A. F. de Almeida, Marta Malagutti, Emanuel Giarolla, Guilherme P. Castelão, Marcus J. Bottino, Paulo Kubota, Silvio N. Figueroa, Mabel C. Costa, Manoel Baptista Jr., Luiz Irber Jr., Gabriel G. Marcondes

Summary: The response of the global climate system to atmospheric CO₂ concentration increase in time is scrutinized employing the Brazilian Earth System Model Ocean–Atmosphere version 2.3 (BESM-OA2.3). Through the achievement of over 2000 years of coupled model integrations in ensemble mode, it is shown that the model simulates the signal of recent changes of global climate trends, depicting a steady atmospheric and oceanic temperature increase and corresponding marine ice retreat. The simulations demonstrate the model's potential to contribute to the international efforts on global climate change research, sparking interest in global climate change research within the Brazilian climate modeling community, constituting a building block of the Brazilian Framework for Global Climate Change Research.

Link: <http://journals.ametsoc.org/doi/abs/10.1175/JCLI-D-12-00580.1>

Title: EURO-CORDEX: new high-resolution climate change projections for European impact research

Authors: Daniela Jacob, Juliane Petersen, Bastian Eggert, Antoinette Alias, Ole Bøssing Christensen, Laurens M. Bouwer, Alain Braun, Augustin Colette, Michel De'que', Goran Georgievski, Elena Georgopoulou, Andreas Gobiet, Laurent Menut, Grigory Nikulin, Andreas Haensler, Nils Hempelmann, Colin Jones, Klaus Keuler, Sari Kovats, Nico Kro'ner, Sven Kotlarski, Arne Kriegsmann, Eric Martin, Erik van Meijgaard, Christopher Moseley, Susanne Pfeifer, Swantje Preuschmann, Christine Radermacher, Kai Radtke, Diana Rechid, Mark Rounsevell, Patrick Samuelsson, Samuel Somot, Jean-Francois Soussana, Claas Teichmann, Riccardo Valentini, Robert Vautard, Bjo'rn Weber, Pascal Yiou

Summary: A new high-resolution regional climate change ensemble has been established for Europe within the World Climate Research Program Coordinated Regional Downscaling Experiment (EURO-CORDEX) initiative. The first set of simulations with a horizontal resolution of 12.5 km was completed for the new emission scenarios RCP4.5 and RCP8.5 with more simulations expected to follow. The aim of this paper is to present this data set to the different communities active in regional climate modelling, impact assessment and adaptation.

Link: http://pubman.mpdl.mpg.de/pubman/item/escidoc:1818740:3/component/escidoc:1818739/10.1007_s10113-013-0499-2.pdf

Title: Assessing the robustness of projected precipitation changes over central Africa on the basis of a multitude of global and regional climate projections

Authors: Andreas Haensler, Fahad Saeed, Daniela Jacob

Summary: It is well accepted within the scientific community that a large ensemble of different projections is required to achieve robust climate change information for a specific region. For this purpose we have compiled a state-of-the-art multi-model multi-scenario ensemble of global and regional precipitation projections. This ensemble combines several global projections from the CMIP3 and CMIP5 databases, along with some recently downscaled regional CORDEX-Africa projections. Altogether, daily precipitation data from 77 different climate change projections have been analyzed.

Link: <http://link.springer.com/article/10.1007%2Fs10584-013-0863-8>

Title: Expansion of dengue transmission area in Brazil: The role of climate and cities

Authors: Christovam Barcellos, Rachel Lowe

Summary: This research examines the spatial and temporal patterns of the recent expansion of dengue transmission area in Brazil (2001-2012) with the aim of identifying pathways and constraints to dengue diffusion. Long-term permanence of disease transmission depends on the existence of a favourable climate, abundant population and connectivity. Large and warm cities sustain and spread dengue viruses, for which specific dengue control measures must be developed. The concentration of outbreaks along climate transition fringes indicates a boundary between two transmission regimes and raises awareness to the effects of ongoing climatic and socio-economic changes.

Link: <http://onlinelibrary.wiley.com/doi/10.1111/tmi.12227/abstract?deniedAccessCustomisedMessage=&userIsAuthenticated=false>

Title: Relative importance of climatic, geographic and socio-economic determinants of malaria in Malawi

Authors: Rachel Lowe, James Chirombo, Adrian M Tompkins

Summary: Malaria transmission is influenced by variations in meteorological conditions, which impact the biology of the parasite and its vector, but also socio-economic conditions, such as levels of urbanization, poverty and education. This, in turn, impacts human vulnerability and vector habitat. Climate information was found to improve the estimation of malaria relative risk in 41% of the districts in Malawi, particularly at higher altitudes where transmission is irregular.



This highlights the potential value of climate-driven seasonal malaria forecasts.

Link: <http://www.malariajournal.com/content/12/1/416>

Title: Field of dreams or dream team? Assessing two models for drought impact reporting in the semiarid Southwest

Authors: Alison M. Meadow, Michael A. Crimmins, Daniel B. Ferguson

Summary: This paper reports on a formal evaluation of Arizona DroughtWatch, an experimental drought impact monitoring system that relies on volunteer impacts observers. The authors found several weaknesses in the public-participation reporting-system model including: participation was reduced because of participants' over-commitment and time constraints, consultation fatigue, and confusion about the value of qualitative impact reports. The authors recommend that professional resource agency personnel provide the backbone of drought impacts monitoring to ensure that decision makers receive the high-quality, consistent information they require. Professional observers can also help attract volunteers who consider access to high-quality data an incentive to visit the Arizona DroughtWatch site and who may be more likely to participate in impacts monitoring if they see examples of how the information is being used by decision makers.

Link: <http://journals.ametsoc.org/doi/abs/10.1175/BAMS-D-11-00168.1>

Title: Minimum standards for local climate-smart disaster risk reduction

Authors: RCCC, IFRC, The Netherlands Red Cross, Climate and Development Knowledge Network (CDKN)

Summary: The minimum standards for local climate-smart disaster risk reduction were developed as a practical checklist to help local community leaders and disaster risk reduction practitioners ensure their risk reduction efforts are climate-smart and contribute to climate change adaptation. That is, these efforts should consider the future risk patterns induced by a changing climate, often including rising uncertainties. The minimum

standards are not idealized solutions but rather practical approaches to implement DRR activities in a way that is achievable by communities with relatively limited external support.

Meanwhile, the minimum standards can also support national actors to integrate achievable community-level action on DRR into national adaptation and climate risk management strategies. National strategies that consider the minimum standards will be able to go to scale and, as donors increasingly require programs to consider climate-related risks, the minimum standards can help establish that strategies are realistic and do indeed go beyond business as usual.

Link: <http://www.climatecentre.org/downloads/File/Minimum%20Standards/Minimum%20Standards%20for%20climate-smart%20DRR%20%202.0%20NOV%202013.pdf>

Title: Assessing and managing climate change risks in supply chains

Authors: Acclimatise, Halcrow

Summary: The Environment Agency's 'Climate Ready Support Service' has developed a five-step framework to help businesses understand and manage the risks that severe weather and our changing climate present to the increasingly complex supply chains of UK companies. Funded by the Environment Agency's [Climate Ready Support Service](#) and prepared by [Acclimatise](#) and [Halcrow](#), this guidance will help businesses to identify new risks and opportunities that our changing climate could bring to their supply chain. It will help them work out how to increase the resilience of their supply chains by making targeted changes to their supply chain operations. For further information contact climateradyevidence@environment-agency.gov.uk

Link: http://a0768b4a8a31e106d8b0-50dc802554eb38a24458b98ff72d550b.r19.cf3.rackcdn.com/LIT_8917_dc87d8.pdf

upcoming events

in the climate services community

European Space Agency Lesson-writing Competition

Lead organization(s): European Space Agency

Date: 31 January 2014, deadline for submissions

Location: international

About: Participants from all over the world are invited to take part in the LearnEO competition to develop lessons on the use of earth observation (EO) space techniques. The themes of the lessons must be chosen within earth science in the broadest sense (e.g. oceanography, geodesy, biology, atmospheric, and cryospheric sciences). Lessons can focus on topics ranging from remote sensing application to illustration of processes.

Web link: <http://www.learn-eo.org/competition.php>

International Conference on Subseasonal to Seasonal Prediction

Lead organization(s): US National Oceanic and Atmospheric Administration (NOAA)

Date: February 10-13, 2014

Location: NOAA Center for Weather and Climate Prediction, College Park, Maryland, United States

About: The conference will bring together the research community, operational centers, and the applications community interested in forecasts on subseasonal and seasonal timescales. Topics will include: 1) relevant phenomenon for subseasonal to seasonal predictions and their predictability; 2) predictions of extremes; 3) initialization and perturbation methods; 4) design of forecast systems, bias correction, verifications, and quantification of uncertainty; 5) approaches to integrate S2S forecasts into applications.

Web link: http://www.wmo.int/pages/prog/arep/wwrp/new/S2S_project_main_page.html

CLARR 2014 - International Conference on Regional Climate Adaptation and Resilience Towards Climate Adapted and Resilient Regions

Lead organization(s): Federal Ministry of Education and Research, Germany

Date: 24-25 February 2014

Location: Hamburg, Germany

About: The CLARR 2014 conference seeks to foster an exchange between the discourses on resilience and adaptation to climate impacts.

Web link: <http://clarr2014.nordwest2050.de/>

Climate Impact Research and Response Coordination for a Larger Europe (CIRCLE-2) Adaptation Frontiers Conference on European Climate Change Adaptation: Research and Practice

Lead organization(s): Climate Impact Research and Response Coordination for a Larger Europe (CIRCLE-2), the European Commission, the Seventh Framework Program

Date: 10-12 March 2014

Location: Lisbon, Portugal

About: The conference aims to share the results of 10 years of European cooperation in climate change impacts, vulnerability and adaptation research, and to pave the way for the development of new research in support of climate change adaptation in Europe in the next decade.

Web link: <http://www.circle-era.eu/np4/611.html>

ADAPTtoCLIMATE

Lead organization(s): Department of the Environment (Cyprus), National Technical University of Athens, National Observatory of Athens

Date: 27-28 March 2014

Location: Filoxenia Conference Center, Nicosia, Cyprus

About: At this conference, participants will have the opportunity to exchange knowledge, views, and ideas on climate change impacts, vulnerabilities, and adaptation. The conference will include oral and poster presentation sessions.

Web link: <http://adapttoclimate.uest.gr/>

Association of American Geographers (AAG), Annual Meeting

Date: 9-13 April 2014

Lead organization(s): Association of American Geographers (AAG)

Location: Tampa, Florida, United States

About: This session seeks a critical engagement with the institutional governance of climate change adaptation by focusing on how adaptation policies are shaped, framed and ultimately implemented. Specifically, what conceptual approaches and governance mechanisms are most influential and why; what challenges/benefits do different scales of governance present; and how, or to what extent, is climate science used as decision support.

Web link: <http://www.aag.org/cs/annualmeeting>

Earth League Annual Workshop: The World Under 2 – 4 Degrees Warming

Lead organization(s): Earth League, Climate Service Center, Germany (CSC)

Date: 23-25 April 2014

Location: Santa Fe Institute, New Mexico, United States

About: Earth League members and international scientists working in research, policy, and in on-the-ground projects will come together to explore the impacts of and ways to prepare for a 2-4 degree temperature rise.

Web link: <http://www.the-earth-league.org/>

Adaptation Futures 2014

Lead organization(s): Earth System Science Center of the National Institute for Space Studies (CCST-INPE), UNEP's Program of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA)

Date: 12-16 May 2014

Location: Fortaleza, CE, Brazil

About: The conference will bring together researchers, policy makers, and practitioners from developed and developing countries to share insights into the challenges and opportunities that adaptation presents, and to share strategies for decision making from the international to the local scale. Early birds registration: 20 March 2014

Web link: <http://adaptationfutures2014.ccst.inpe.br/>

Third Lund Regional-Scale Climate Modeling Workshop

Lead organization(s): World Climate Research Program (WCRP)

Date: 16-19 June 2014

Location: Lund, Sweden

About: The aim of the workshop is to review the overall and specific developments and progress in regional

climate modelling over the last five years, to discuss pertinent open issues and challenges, and to provide input for new developments on the field.

Web link: <http://www.baltex-research.eu/RCM2014/>

Society for Risk Analysis Europe Annual Meeting

Date: 16 - 18 June 2014, **abstract deadline:** 31 January 2014

Location: Istanbul, Turkey

About: The special theme of the conference is "Analysis and Governance of Risks beyond Boundaries." The conference aims to emphasize that risks are able to travel through the virtual boundaries labeled as "regions," "territories," and "countries," It also aims to promote recent scientific novelties in risk reduction and enhance inter-disciplinary approaches to develop new strategies in both evaluating and coping with well-known and less-known risks.

Web link: <http://www.sraeurope.org/home.aspx?pag=1252>

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

Date: 6-10 October 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).

Web link: <http://www.ems2014.eu/home.html>

