Climate Services Partnership

Photo: Susanne Schuck-Zöller

IN THIS ISSUE

Welcome to the CSP newsletter April 2017 edition!

Welcome to 2017's spring CSP newsletter! As always, you will find news on activities, publications, and events collected from the climate services community.
Since the Fifth International Conference on Climate Services, ICCS5, is just a few weeks ago, you'll find much information around the event from page 3 on.

Moreover, we give thoughts and impressions related to the COP22 in Marrakesh in November 2016, by GERICS and from the Red Cross/Red Crescent Climate Centre, starting on page 8.
Spotlights are focussed on the African programmes SASSCAL and WASCAL (page 11, page 13), and on Ana Elisa Bucher from the World Bank (page 16).

As always, you will find various information on partner activities, recent publications and upcoming events.

Enjoy reading!

climate and societies

letter from the CSP Secretariat

The importance of climate change has risen up the public agenda in recent years, evidenced by the historic agreement in Paris in November 2015, and affirmed at the COP22 one year later.

Decision makers in urban communities and private companies often do not consider climate information as relevant for their area of responsibility, yet cities will increasingly be affected by climate change in most parts of the world. A crucial part in building up resilience against tropical cyclones is an early warning system, e.g. developed for the Philippines. Both examples demonstrate the relevance of climate knowledge and climate data for societies.

The Climate Services Partnership works in addressing these issues. For the fifth time since 2011, researchers, users, and providers in the field of climate services convened in order to exchange their experiences, and to discuss needs for further developments. The Fifth International Conference on Climate Services, ICCS5, took place in Cape Town, South Africa, from 28 February to 2 March 2017, with the conference theme being *Innovation in climate services and capacity building*.

The event reflected the range of sectors that deploy climate services, as well as the challenges that are to be dealt with in this still young field - as is depicted in the above examples that have been presented at the conference.

Just as important as generating information is, however, the transfer of knowledge and data. The essence of information needs to be distilled and brought to users in a way such that it is understandable, thus enabling them to act accordingly. Consequently, questions such as „Are statements by climate service providers clear?“ or „Do providers understand what users need?“ were addressed in the „Mutual learning“ sessions during the conference.

„Climate services“ is a relatively young field in applied sciences - processes are often new, trial and error is a common base of development. Failure is the unavoidable sibling of success, as learning by doing sometimes leads up a blind alley. The causes essentially need to be included in the analysis of what makes projects promising and what doesn‘t. In order to ensure that both, success and failure, foster the development of climate services, their evaluation plays a vital role.

The topics of the conference mirrored all these important aspects of climate services: the need for climate information, the necessity to update and analyse this need, the search for the best way of communicating climate information as well as of users‘ needs, the importance and challenge of evaluating climate services, and the collaboration with decision makers who often may not realise the importance of climate information for their work.

ICCS5 showcased the various activities that climate services are making in numerous areas, and that the challenge set by the Paris Agreement is one the climate services community has accepted, and is making progress in meeting.

Daniela Jacob

Director of Climate Service Center Germany (GERICS)

words on the ICCS5

a note from the CSP Secretariat

The Fifth International Conference on Climate Services, ICCS5, took place from February 28 until March 2 2017 in Cape Town, South Africa. It was jointly organised by the CSP secretariat at the Climate Service Center Germany (GERICS), Hamburg, and the Climate System Analysis Group (CSAG) at the University of Cape Town (UCT).
The beautiful setting close to Cape Town's Lagoon Beach did its part to make the conference a success, with a packed programme of oral and poster presentations, a market place perfect for networking, lively discussions, and interactive formats that helped including the participants' ideas.
In this edition, you will find a „words on the ICCS5" section, starting next page, with personal impressions and insights by Stephen Zebiak (International Research Institute for Climate and Society (IRI), USA), Chris Hewitt (Met Office, UK), and Jörg Helmschrot (SASSCAL programme), and with highlights and conclusions from side events. Further information and most of the presentations can be found online:
http://www.climate-services.org/iccs/iccs5/

We from the CSP secretariat are currently working on the preparation of the conference proceedings, which will summarize the main outcomes of the ICCS5. They will be published on the CSP web page - please keep an eye out!

Many thanks to all those who have evaluated the conference through our online survey - this helps very much in preparing the next ICCS.

Our special thanks goes to the main donor of the conference, the German Federal Ministry of Education and Research (BMBF), which financed the main share of the conference costs. We also thank the Stockholm Environmental Institute (SEI) and the World Bank (WB), who supplied additional funding. Without this financial support, neither the overall organisation of the event nor the participation of many scholars would have been possible.

We would like to thank all who have contributed with their time and input, their ideas, practical support, and enthusiasm - you have made the ICCS5 a great success.

Photos: Izidine Pinto, Susanne Schuck-Zöller

The ICCS5 in numbers:

210 participants	78 talks
13 parallel sessions	80 posters
5 plenary sessions	13 side events
3 keynote talks	30 market place stands

Results and reflections

by Stephen Zebiak (International Research Institute for Climate and Society, IRI, USA)

ICCS5 brought together a diverse set of researchers, service providers, intermediaries, users, and sponsors of climate services. It provided a rich agenda, surveying the field of climate services, from theory to action, throughout the world. As has come to be expected from ICCS's, ICCS5 offered ample opportunity to learn, question, challenge, and reflect on the evolving knowledge and experience in climate services.

A few points stood out for me. First, the attention to the users and uses of climate services as central to successful implementation is growing, and is much more widespread than was the case even a few years ago. Second, there is increasing appreciation for issues such as quality assurance, evaluation metrics, and operating standards for climate services. This reflects, I sense, a maturing field – one that is transitioning from primarily conceptual to more practical. Third, I found that the organizing theme of innovation resonated strongly throughout the conference; reflecting a widely-held belief that there is much more to be learned in designing and operating successful climate services, and we must continually promote and pursue innovation, accepting inevitable failures that will accompany it.

These and other findings of ICCS5 highlight a number of priority issues for future research and development efforts – providing valuable guidance for the CSRD Partnership, and no doubt, many other programs in directing their efforts over the coming years.

Personal statement

by Chris Hewitt (Met Office, UK)

We had a record number of participants at ICCS5 from the UK Met Office representing a range of climate service-related activities and interests. We all found the conference useful for exchanging experiences, discussing climate services outside of our own organisation, networking with different actors in the climate service arena, and helping us improve the development and delivery of our climate services. There are many challenges around improving engagement between the decision/policy-makers and the climate service providers and developers – it is an ongoing and exciting journey for all of us, and ICCS5 was a very useful stage of this journey.

Photo: Izidine Pinto

Personal statement

by Jörg Helmschrot (SASSCAL)

Networking between climate research, climate service providers and users is crucial to ensure that the competence of scientists supports the needs of providers and users. By convening climate scientists, service providers and users from different institutions and networks, the ICCS5 provided an essential platform for SASSCAL to exchange experiences and insights from a southern African perspective on innovation and capacity development in the domain of climate services. The conference helped to position SASSCAL as a regional player facilitating between climate science and service providers by communicating the needs of the end users and the potential impact of effective climate services in southern Africa.

words on the ICCS5

reports from side events

Side events

Several side events took place both during the ICCS5 days and on the shouldering days before and after the conference (these were located at the UCT). Below you find impressions from some of them; for more information, please have a look at

http://www.climate-services.org/iccs/iccs5/iccs-5-side-events/

Photo: Izidine Pinto

Interdisciplinary research priorities for climate services to inform socio-economic development

The side event aimed to inform a related „British Council Researcher Links" workshop at the same venue during the week following ICCS5, bringing together early career researchers from the UK and South Africa working across multiple disciplines.

In the beginning, an overview was given of the evolution of climate services, highlighting the need to think differently about the role of climate services in the context of socio-economic development. Moreover, the value of social science approaches to help improve the reach and effectiveness of climate services was emphasised.

Interactive exercises and discussions followed, including a practical exercise in which the group had to hypothetically start a climate service for a cider production company.

The session provided an opportunity for participants with diverse experiences and different disciplinary backgrounds to discuss their perspectives on research priorities for climate services. It was generally recognised that holistic and interdisciplinary approaches were essential to developing climate services effectively, as well as effective methods for engaging with different user communities. The research community will continue to have a vital role in the evolving climate services field.

(Joseph Daron, Met Office, UK)

http://www.metoffice.gov.uk/climate-guide

Towards subseasonal-to-seasonal (s2s) climate services

With a bit more of 20 participants, the event consisted of four talks and a discussion session to analyze ways to advance climate services at sub-seasonal scale.

The talks gave insights and overview of the different aspects and apporaches of the topic, which built a sound basis for the following debates.

The discussion session focused on one main question: "What's the next step in order to have s2s climate services?". In general, the participants agreed on the fact that predictive skill is a key component of s2s climate services and that it needs to be increased, but that the social component of these services is also important and requires to be further explored. The participants were particularly interested in knowing what the new products can offer beyond the classical 3-category probabilistic forecasts typical of seasonal predictions.

(Ángel Muñoz, IRI, USA)

http://s2sprediction.net/

Co-developing climate services: Brokering climate knowledge from scientists to decision makers and back

Roughly 25 people followed a set of interactive sessions, which formed a test bed for methods for the development of climate services in a collaborative way, illustrating the important role of knowledge brokers.

Successfully entering the field of adaptation and knowledge brokering with a panel discussion, the participants then were led through a group exercise. They were asked to develop three climate services, as different time scales had to be addressed (early warning, seasonal forecast, daily/weekly weather forecast). The outcome of the exercise was summed up in the following points:

- „A climate service is much more than just the information product." Both sides are equally important, development and quality of the product as well as perception of users' needs and as the flow of information between users and providers.
- Climate services are a dynamic and developing field. Knowledge brokering can be the facilitator that connects all relevant parties affected, decision makers, stakeholders, and researchers.
- Engagement and further development is still needed on the institutional side: climate services are not sufficiently seen as a ‚natural' and necessary part of the chain of policy making.

The side event ended with specific questions: „How can knowledge brokers carry out their role in a more visible and in a sustainable way, as actors who are recognized and embedded throughout the climate service value chains?", and „Who ultimately enhances climate services contribution to climate resilience and non-climate related benefits?"

... and the winner of the game was: early warning systems for the Nanighi community in Garissa County, Kenya.

(Maurine Ambani Kasuvu)

CKB: http://www.climateknowledgebrokers.net/

ALP on WeADAPT: https://www.weadapt.org/knowledge-base/adaptation-learning-programme

ALP on CARE Climate: http://careclimatechange.org/our-work/alp/

Photo: Izidine Pinto

Global climate services programs for climate resilient and smart development – achieving strategic synergies for implementation

This side event brought together representatives of several institutions investing in or coordinating climate services-related programmes. It explored current practices, strategies, challenges and lessons learned in implementing climate services programmes, as well as opportunities to increase coordination and knowledge-sharing toward achieving greater synergy and greater impact.

Discussion led to a set of recommended actions:

- Establish a set of shared principles that guide the design and implementation of programs enabling climate services for resilient development.

- Develop a set of common metrics for the monitoring and evaluation of climate services programmes.
- Create a mechanism for more regular and substantive dialogue, exchange of information, results, and learning among program sponsors and implementers.

The participants expressed interest in pursuing each of these actions, drawing wherever possible on relevant activities and current practices.

(Steve Zebiak, IRI, USA; Ana Bucher, WB)

https://iri.columbia.edu/
http://www.wmo.int/gfcs/

Clim-Health Africa, established in 2013, is a multi-stakeholder initiative bringing together Pan-African technical institutes and international partners to guide and strengthen the public health resilience of African countries and communities. Two side events were organised by ClimHealth Africa:

Climate and Health Consortium for Africa

ClimHealth Africa serves as the principle user-interface mechanism for engaging, guiding, and setting standards for the health community to access and use climate services in Africa. The side event was held to identify emerging climate-service issues, particularly related to responding to country needs in emergency management. Issues raised, which were taken up by the network in later planning sessions, included among others the overemphasis on the development of early warning systems, to the detriment of investments in underlying monitoring systems.

ClimHealth Africa Roundtable

ClimHealth Africa provides scientific leadership, capacity building, research, and policy support to help inform and support the health sector across Africa move from the current reactive to a proactive mode. In light of 5-years of progress, ClimHealthAfrica members convened a roundtable to consider the emerging needs for climate services, and how the network can better respond to the new global policy agendas for climate, sustainable development, and disasters. Participants reflected on the greater potential role for ClimHealthAfrica to help convene, communicate, and catalyst to support national partners.

Recommendations to shape ClimHealth Africa in 2017 and planned activities focused on, e.g., strengthening ClimHealth Africa engagement, with stronger outreach to national partners, and the improvement of resources, notably technical support for the countries.

(Joy Shumake-Guillemot)

http://www.climhealthafrica.org/

More details and information on the ClimHealth Africa as well as on other side events can be found in the conference proceedings, which will soon be published on the CSP web page.

Climate conference in Marrakesh: Was it ambitious enough ?

UN report highlights the insufficient aggregated effect of Nationally Determined Contributions

From the 7th to the 18th of November, the 22nd session of the Conference of the Parties (COP22) of the United Nations Framework on Climate Change (UNFCCC) was held in Marrakesh. This session, after a rapid entry into force process, served as the first session of the Paris Agreement (PA). The PA, which was the result of the COP21, after many years of negotiations and a first attempt in Copenhagen (COP15), is the agreement that will start to be implemented in 2020, after the period covered by its predecessor (and still waiting for its amendment), the Kyoto Protocol.

Photo: Imago

The agreement has three main goals: (a) limiting the mean temperature increase to well below 2ºC above pre-industrial levels (pursuing 1.5ºC); (b) increasing adaptation, foster resilience and lower greenhouse gas emissions development; (c) mobilizing finance resources which are compatible with climate resilient and low greenhouse gases development.

Different than the Kyoto Protocol, which included commitments on emission reduction targets, the Paris Agreement is based on „voluntary contributions" from the countries, and even when the agreement itself is binding, the contributions are not. The so called Nationally Determined Contributions (NDCs) are national plans that the countries, parties of the agreement, have to present to show their contribution to the three main goals of the PA. Countries (specially developed countries) were expected to also present their contributions in terms of means of implementation, such as finance, capacity building and technology transfer. These last three aspects are missing from most of the contributions presented until now.

Nationally determined contributions not necessarily aligned with climate science

Moreover, the NDCs are not necessarily aligned with the climate science. In May 2016, the UNFCCC secretariat presented the "Synthesis report on the aggregate effect of INDCs" based on the 161 INDCs (Intended Nationally Determined Contributions), representing 189 parties and the 95.7% of the global emissions. The report concluded that even when the INDCs were totally implemented, an increase in the average temperature ranging from 2.7ºC to 3.7ºC by year 2100 would be expected, a warming rate that would be far from the aim to keep increase in temperature at below 2ºC. Because of the insufficiency of the INDCs/NDCs, the Paris Agreement included an "ambition mechanism" which allows the parties to revise and improve the ambition of their contributions every five years.

This scenario, and the current negative effects of climate change, represent a lot of challenges, especially for developing countries and vulnerable communities. That is why the adaptation approach is so important, and this was confirmed by the 137 INDCs (out of 161) which have an adaptation component. Examples of the sectors included in the national plans are: water, agriculture, ecosystems and biodiversity, forestry, disaster risk reduction and energy. The mitigation component of the INDCs is more focused on energy.

Impacts in the Latin American region

The Latin American region, for example, which historically has had a low share in the emissions of greenhouse gases, is one of the most vulnerable regions in the world. The IPCC (2014) identified some negative effects of climate change which are

already impacting the region, such as: increase in mean temperature (between 0,7°C and 1°C), changes in precipitation patterns (rainfall) and flow of superficial water (runoff), increase in diseases, glaciers melting, sea-level rise, and others. Regarding mitigation, the region has also an incredible potential regarding the enhancement of renewable energies, efficient and clean transport systems, to avoid emissions from deforestation and degradation of natural ecosystems, among others. But even when the region takes advantage of its full mitigation potential, if at the global level emissions are not drastically reduced, the region will continue facing the negative effects of climate change.

Central America especially vulnerable

One example of the urgency of ambitious climate action is the Central American region. The region contributes less than 1% to the global greenhouse gas emissions, but 4 out of the 7 countries are in the top 15 of the yearly published Global Climate Risk Index[1]. Due to its geographical location, the region is affected by hurricanes every year, but this could become worse (more intense and more frequent events) due to climate change. For example, last 24th of November 2016, less than one week after the COP22 ended, Hurricane „Otto" formed in the Atlantic basin and made landfall on the Central American territories. Costa Rica has been hit for the first time by a hurricane since weather recordings began in 1851. The hurricane is recorded to be the latest in the hurricane seasons. Invaluable lives were lost and millions of dollars of losses are being accounted in the aftermath.

COP22 in Marrakesh: deadline for the rulebook 2018

After the entry into force process of the Paris Agreement, one of the big tasks of the COP22 was to set a good base to determine how the Paris Agreement would be implemented (modalities, procedures and guidelines included in the rulebook). Pre 2020 action (regarding mitigation, including the amendment of the Kyoto Protocol), finance and adaptation to climate change were also seen as the main topics of this COP - confirmed during the two weeks of negotiations- , therefore announcements of more ambitious actions and more financial resources to tackle climate change were also expected. But what Marrakesh left was some progress on the technicalities of the implementation of the agreement, the definition of 2018 as the deadline for the rulebook, and the announcement of U$ 81 million pledged to the Adaptation Fund.

The results of Marrakesh can be mentioned as good steps in the right direction, but for communities in the Central American region, for example, they are not ambitious enough in a world where ambitious climate action is needed now. That ambitious climate action, especially in the case of adaptation which faces a lot of uncertainties, requires science based information and services which enable informed decision making processes. Traditional and indigenous knowledge has also to be considered in order to reach a climate-resilient and low-carbon society.

(Tania Guillén Bolaños, GERICS; this article was originally published at the Earth System Knowledge Platform ESKP.)

http://www.eskp.de/

[1] The Global Climate Risk Index is published by Germanwatch. It analyses to what extent countries have been affected by the impacts of weather-related loss events like storms, floods, heat waves etc. There is data for each year and the period of 1996 - present.

Along with COP22:
Red Cross/Red Crescent Climate Centre events

At the end of the high-level event on El Niño at the UN General Assembly, the Climate Centre – on behalf of the International Federation of Red Cross and Red Crescent Societies (IFRC) – called for a radical shift in the humanitarian response to crises linked to El Niño and climate change.

"We need to invest at a much larger scale ahead of these crises, building resilience, and anticipating shocks," said Climate Centre Director Maarten van Aalst in an address. "We must truly bridge humanitarian, development and climate agendas", he added.

In its capacity as a member of the Netherlands Partners for Resilience (PfR), the Climate Centre contributed to the principal key message in the outcome document at the Asian Ministerial Conference on Disaster Risk Reduction in Delhi that also included 13 Red Cross Red Crescent National Societies and the IFRC.

Governments of Asia, the world's most disaster-prone region, should pursue a paradigm shift from disaster management to risk reduction, it said, "with a sense of urgency".

Again as a PfR member, the Climate Centre took part in an inter-agency forum in Manila on forecast-based financing and emergency preparedness for climate risks that called on governments to promote better use of data as part of "a unified plan to respond to extreme shocks and events".

The 2016 Development and Climate Days (D&C Days) event of which the Climate Centre is joint organizer – alongside the 'COP 22' UN climate talks in Marrakech – saw the first major engagement by the private sector, in the form of the 'We Mean Business' coalition of influential businesses and investors that was founded in 2014 and now works for a transition to a low-carbon economy.

Also running alongside COP 22, the Climate Centre gathered representatives from the National Societies of Armenia, Georgia, Kenya, Malawi and Nepal for a 'writeshop' to generate case studies charting their involvement with National Adaptation Plans (NAP). With the Danish Red Cross and the IFRC, the Climate Centre has been implementing a NAP engagement programme to ensure adaptation needs of vulnerable communities are embedded in development planning.

A new virtual reality game created by the Climate Centre that "puts users in the shoes of disaster managers" was on show at D&C Days and was reported on by the Thomson Reuters Foundation. Based on three years of real hydrological data from the flood-prone West African nation of Togo, the experience aims to "help users get a sense of how hard decision-making can be – and suggests how creating better prediction models and pre-authorizing aid might save money, time, and lives".

A workshop in Dar es Salaam brought together municipal authorities with multilateral partners including the World Bank, the Tanzanian and American Red Cross, and the Climate Centre to plan the future of an inter-agency programme to bolster flood resilience in the Tanzanian commercial capital.

The IFRC, the Climate Centre and the Liverpool School of Tropical Medicine in the UK joined forces to develop two easily adaptable teaching guides and interactive toolkits for adults and children in communities affected by mosquito-borne diseases. Amid spikes in dengue cases and the recent spread of the Zika virus, these have now been rolled out by Red Cross Red Crescent teams in the Americas, in Africa and in the Asia Pacific region.

(Alex Wynter, Red Cross/Red Crescent Climate Centre)

http://www.climatecentre.org/

community spotlight

Centre of Excellence in Climate and Environment Research and Capacity Building in West Africa - WASCAL

About us

West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) is an international institution committed to tackling the issue of climate change in West Africa. It was founded by West African countries in partnership with the German Federal Ministry of Education and Research (BMBF), with the goal of connecting regional partners, building capacities facilitating research and delivering climate services.

Our vision

WASCAL is dedicated to strengthening the human capacity related to climate change, and pooling the resources and expertise of West African states and other cooperating partners, to address the challenges of climate change, thereby enhancing the resilience of human and environmental systems to increased variability.

Our Research and Service Provision Programmes

The organisation has a Competence Centre situated in Ouagadougou, Burkina Faso. The centre which serves as the centre of excellence for climate service provision for West Africa, continues to develop qualitative and quantitative tools and models for bio-physical and socio-economic processes to analyze scenarios of the impacts of climate change.

The centre is structured in six research clusters namely: climate and weather, landscape dynamics, agricultural systems, markets and livelihoods; risk management and integrated assessment.

During phase one of the research programme (2013-2016) and the transfer phase (till March 2017), WASCAL and its German partners have, and continue to establish, first-class research and climate services infrastructures in the Sudanian savanna belt (Benin, Burkina Faso, Ghana). These include field laboratories, on-site ecological and agronomic field experiments, and hydro-meteorological stations for standard climate measurements.

Photo: WASCAL

The new 2017-2020 research plan draws the pathway to a service provision centre by the end of the period, key demand-driven climate and environmental services that are taken up by policy-makers, stakeholders, and smallholders. It is built around four flagship programmes including climate and environment services, resilient socio-ecological landscapes, sustainable intensification for food security, climate modelling and seasonal forecasting.

community spotlight

Centre of Excellence in Climate and Environment Research and Capacity Building in West Africa - WASCAL

Our Capacity Building Department

The Capacity Building Programme facilitates academic education amongst ten West African universities in association with German institutions. The activities focus on the training of Doctoral and Master's programmes in climate change thematic areas.

Photo: WASCAL

In 2016, hundred students received full scholarships to pursue postgraduate programmes in these universities, bringing the number of beneficiary students to 258 since its inception in 2012.

Later, in October 2016, 18 postgraduate students from within West Africa were also awarded with our theses grant scheme that helps students outside the WASCAL programme to facilitate their research.

Plans are extensively advanced to begin with short courses, seminars, workshops and summer schools for individuals, government agencies, scientists, and climate related outfits to take the opportunity of enhancing their climate change expertise.

(Nii Commney, WASCAL)

http://www.wascal.org/graduate-programmes/graduate-studies-programme/

http://www.wascal.org/

community spotlight

Southern African Science Service Centre for Climate Change and Adaptive Land Management - SASSCAL

A conversation with Jörg Helmschrot, Director for Science and Technology of SASSCAL

The world faces considerable economic, social and environmental challenges given the confluence of trends in climate change, population growth, agricultural expansion, deforestation, water scarcity and loss of biodiversity. Signs of escalating and compounded stresses resulting from these trends are evident at global, national and local levels and of particular relevance to Southern African countries, where global change induced scarcities severely affect socio-economic development.

The Southern African Science Centre for Climate Change and Adaptive Land Management (SASSCAL, www.sasscal.org) is a joint initiative of Angola, Botswana, Namibia, South Africa, Zambia, and Germany, responding to the challenges of global change. The overarching goal of SASSCAL is to improve the capacities for providing sound science-based solutions for current problems and future risks in the region, in particular regarding climate change and the associated demands concerning land management practices of local and regional players. The main objectives therefore are:

- to support trans-disciplinary, problem-oriented research in the area of adaptation to climate change and sustainable land management in order to improve the livelihoods of people in the region,
- to provide climate and land management related services and advice for policy, decision makers and stakeholders at national and regional level, and
- to develop capacities including technical and human resources development at scientific and non-scientific partner institutions.

SASSCAL started its operation in 2012 and integrates three integrated components, namely research, service provision and capacity development. Its Regional Secretariat was established in Windhoek, Namibia, but National Nodes were also instituted. Since 2016, SASSCAL conducts the full range of its functions and duties including (i) the coordination and administration of the research portfolio; (ii) ensuring scientifically-based service brokerage; (iii) developing capacity building instruments; and (iv) ensuring funding distribution and planning. The institution attained its legal status in October 2013 when it was registered in Namibia as a Section 21 Company, i.e. a non-profit company. The process of transforming SASSCAL into an international organisation is ongoing.

Photo: SASSCAL

The SASSCAL Research Portfolio of the ongoing first phase (2012-2017) consists of 88 research tasks and addresses research that is both contextually relevant and based on the most advanced science available. The research tasks, equally balanced in terms of national coverage, thematic areas and financial support, focus on identifying appropriate interventions within the five themes of climate: water, forestry agriculture, and biodiversity. Considering some regional and national differences in data availability and existing research infrastructures, the projects contribute substantially to various levels of research. These are ranging from base-data generation and fundamental research to applied sectoral research approaches up to integrated and interdisciplinary science for an improved understanding of the complexity of the southern African environment under the threat of global change. In December 2016, more than 70 research institutions, academic and non-/governmental institutions with more than 480 individuals were directly involved in SASSCAL research.

community spotlight

Southern African Science Service Centre for Climate Change and Adaptive Land Management - SASSCAL

Over the past four years, SASSCAL received notable recognition in the scientific community and contributed to strengthen the southern African research landscape through more than 80 peer-reviewed publications and more than 300 scientific presentations. SASSCAL is interacting with a diversity of research and non-research collaborators and stakeholders ranging from individuals to UN bodies.

Based on the research conducted, the service brokerage component of the first phase provided an appropriate range of information, data and knowledge-based services and products to a broad range of users and practitioners. A core service facility of SASSCAL is the Open Access Data Centre / Knowledge Exchange (OADC/KE). Operating as a data custodian, the OADC provides scientifically verified, harmonised and quality-controlled information, data and products that constitute the basis for the development of demand-driven services and products.

Photo: SASSCAL

The SASSCAL WeatherNet is the service 'flagship' of the OADC/KE. It consists of 144 automatic weather stations which are spread over the SASSCAL region. These stations are coupled with an online platform (www.sasscalweathernet.org) which makes climate data freely available in nearly real time. In addition, a number of products and services providing stakeholders with information on biodiversity (biodiversity observation network, BIOTA Database), land management (regional and national land use maps, fire mapping) and hydrological data (SASSCAL IS) were made available. The OADC/KE also developed a dashboard prototype, an online GeoTool and a rainfall app that allow SASSSCAL to inform and interact with citizen scientists.

Given the lack of sufficient expertise at academic and non-academic level, the human capacity development initiatives in SASSCAL are targeted at equipping scientists, technicians and experts of collaborating institutions with a conducive research environment to enable the provision of science-based services and products for scientifically sound decision making. Since 2012, 38 BSc students, 52 MSc-students and 4 PhD-students graduated. Currently, 13 BSc-students, 45 MSc-students, 41 PhD-students and 31 Post-Doc students are registered with SASSCAL. In addition, a significant number of non-SASSCAL-funded students at all graduate levels (49 BSc, 40 MSc, 16 PhD and 21 Post-Docs) are currently involved in SASSCAL research tasks.

With the successful implementation of the 88 research projects, the establishment of the OADC, the accomplished services and the founding of a research network and infrastructure, SASSCAL has been recognised as a reliable research partner. Numerous partnerships were established with international programmes and activities, providing a solid base for further collaboration. Given its reputation as a regional key institution in the field of climate change and adaptive land management, SASSCAL is also involved in various ongoing and upcoming research activities linked to H2020 (EU), CLIENT II and SPACES (both BMBF) as well as efforts linked to services provision (e.g. SAEON) and human resources development (e.g. SARUA).

community spotlight

Southern African Science Service Centre for Climate Change and Adaptive Land Management - SASSCAL

With continued support from the BMBF and the member countries, the next project phase (SASSCAL 2.0, 2017 – 2020) will build on the successful implementation and operation of an institutional and research infrastructure that was established during the first phase of SASSCAL.The objectives for SASSCAL 2.0 cover the strategic areas focusing on (i) the promotion of excellence and relevance in demand-driven research; (ii) the provision of a services brokerage platform for the generation of knowledge-based products and services; (iii) the production of a new generation of innovative knowledge workers through institutionalised capacity development instruments and programmes; (iv) investments in shared regional scientific infrastructure to improve and modernise the means of conducting globally competitive research; and (v) the positioning of SASSCAL as a platform to mobilise national, regional and global commitments to provide an enabling environment.

We currently finalise the SASSCAL 2.0 strategy which provides a strategic research framework to tackle these goals, and which is in alignment with the mandate of SASSCAL and addresses regional research needs and imperatives in the context of the 2030 Agenda for Sustainable Development, the Paris Agreement, the African Union's 2063 Vision and Action Plan, the African global change research initiatives, national policies as well as the various SADC action and development plans.

(Jörg Helmschrot, SASSCAL)

http://www.sasscal.org/

SASSCAL
Southern African
Science Service Centre for
Climate Change and
Adaptive Land Management

community spotlight

an interview with Ana E. Bucher, World Bank

Ana Bucher is a climate change specialist with the Environment Department of the World Bank.

Tell me a bit about the organization that you work for, the World Bank. When did it start working on Climate Change issues? In which way is it involved in the climate services community?

The World Bank (WB) engagement in climate change has grown exponentially in the last 6-8 years with an approximate 20% of its portfolio going to climate related topics. It has slowly expanded from specific operations on the ground to corporate commitments that now include requirements for climate and disaster risk, screening and tracking climate finance. In the last couple of years, the support for the development of weather and climate services has expanded to several regions and programmes including the Pilot Program for Climate Resilience of the Climate Investment Funds. Internally, a Community of Practice on Hydromet, Climate Services, and Resilience was recently established to provide a mechanism for sharing cutting edge thinking, lessons, and experiences from WB operations involving hydromet modernization, weather, water and climate services and resilience. The WB has also increased its engagement in supporting the development and modernization of country hydrometeorological services, which will hopefully lead into the establishment of effective climate services to local communities.

What were the greatest challenges (if there were any) in building up the collaboration with the climate services community?

The biggest challenges have been the learning and understanding of what climate services are, beyond the traditional roles that hydrometeorological services have had in the past, and what it means to have weather and climate services tailored to different users. In most of the countries we work with, the basic services of collecting hydrometeorological data, providing quality assurance, and developing products such as weather forecast are not yet fully established. Therefore, the notion of providing effective services for the farmers, energy providers, or long term planners are neither established nor functional. Thus, work needs to be done in parallel, with local institutions and policy makers where basic functionalities and objectives of a hydrometeteorological service are established and defined, but products and services are defined and tested with the end-users to ensure a successful cycle.

Moreover, while hydrometeteorological operations provide new opportunities to strengthen country capacity to develop and deliver climate information based services to users and communities, they are also technically complex and difficult to sustain. There is increasing recognition from partner countries of the value of investing in climate services which has translated into a notable uptake of this multisectoral agenda across the WB regions.

Photo: Ana Bucher

What do you see as the greatest strengths of the World Bank?

There is increasing recognition from partner countries of the value of investing in climate services, which has translated into a notable uptake of this cross-sectoral agenda across the WB regions. Thus, I believe the greatest strengths of the WB is the capacity to engage and leverage experts, policy makers, and communities in a range of climate related topics, including access to climate information, risk assessments, and set up of sustainable climate services that can enhance access to hydrometeorological information and decision support systems for climate dependent sectors.

community spotlight

an interview with Ana E. Bucher, World Bank

If you wanted to define climate services, how would you do that?

It is all about the value chain and how we connect users with information providers. Climate information can be generated and analyzed within specific research and national institutions. However, if the end users are not present to suggest, advise and determine the usability of the information and products, we are not developing services for the community. An effective climate service will allow information to be translated into climate-related actions by many.

What do you like most about work?

I am extremely interested in the translation of science into practical applications. Therefore, I truly enjoy the opportunity the WB provides me to meet and engage with a range of experts in different fields of climate change and how we can work together to enhance the translation of their work to evaluate impacts and determine actions in vulnerable sectors, such as agriculture. I am most interested in learning and sharing experiences on climate services and climate information systems useful to farmers and landscape managers.

http://www.worldbank.org/

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PRIMAVERA project

PRIMAVERA is a EU Horizon 2020 project which aims to improve the quality of climate information available for planning, adaptation and risk mitigation purposes.

What's PRIMAVERA about?

PRIMAVERA focuses on advancing climate model simulations to provide more robust answers to questions on how climate change could affect us in the future. An important objective of PRIMAVERA is to produce new, more robust and trustworthy projections of European climate for the next few decades, based on improved global models and advances in climate process understanding. As a result, the climate science and climate services communities should be better placed to address stakeholder-relevant questions such as: How will the risk of high impact events, such as heat waves, floods and droughts change over the next few decades and beyond?

To learn more about the project, you can view this short video.

How does this relate to me and my role?

To understand the impact of the new projections on users and stakeholders, we need to understand their requirements for climate information, and how they use such information. We are therefore establishing a community of practitioners, users and decision-makers, and would like to invite you to join this community.

Why take part?

Some benefits of user involvement include:

- Direct input to, and feedback on, PRIMAVERA science and activities, to ensure that the potential benefits of these new projections are optimally aligned to your needs for climate information for planning and adaptation purposes out to the mid-21st century.
- Opportunity to influence climate model design. The novel design of the PRIMAVERA project includes two series of climate model simulations. Once the first of these is complete, there is an opportunity for the community to review the outcomes in an end-user context, and influence the design of the second series of even higher-resolution, limited-area regional model simulations.
- Early access to, and potential to shape the design of, a User Interface Platform (UIP) to be constructed on the PRIMAVERA website (https://www.primavera-h2020.eu/). The UIP will host a range of material aimed at helping practitioners to view, use and understand PRIMAVERA outputs, and the benefits of these outputs to the user community.

How can I get involved/find out more?

- If you'd like to receive occasional updates on the progress of the project, please join our mailing list by contacting us at primavera_inquiries@bsc.es
- We would like to invite you to complete a short (approx. 10mins) online survey about user needs for weather and climate information. You can access the survey via this link: https://www.surveymonkey.com/r/Survey_Primavera
- To follow up the survey, we would like to invite a smaller group of practitioners to participate in more detailed 1-hour interviews to explore specific and more detailed suggestions you may have based on your individual requirements for climate information. The online survey allows you to opt into / out of this process. If you would prefer only to participate in the interview and skip the survey, please contact us directly.

- You could also participate in user focused workshops, the details of which will be confirmed in the coming months - stay tuned to our PRIMAVERA updates to find out more!

In recent years, understanding the relevance and usability of climate information has become a key research topic, increasing the number of activities exploring this subject directly with users. You might thus have recently been approached to complete other user surveys. Although summarized general findings of these activities are shared among the research community, we encourage you to also complete the PRIMAVERA survey, as these few minutes of your time will help us collect new insights and fine-tune our research to address your specific user needs.

If you have any questions about PRIMAVERA, please contact the team at primavera_inquiries@bsc.es.

(Dragana Bojovic, PRIMAVERA)

https://www.primavera-h2020.eu/

Climateurope Festival: an innovative activity to facilitate a dialogue among European climate science communities, funding bodies, climate service providers and users
5 - 7 April 2017, Valencia, Spain

The Climateurope project – www.climateurope.eu - contributes to the implementation of the European Roadmap for Climate Services. The project coordinates and supports Europe's knowledge base, to enable a better management of climate-related risks and opportunities and to create greater social and economic value. It is a five-year project started in 2015 and funded by the European Commission under the grant agreement 689029.

The project links different European research projects and initiatives. Among them are, for example, the Copernicus Climate Change Service, the European Research Area Network for climate services, the European Network of Earth System Modelling, and the Climate-KIC.

A series of events, including three festivals, is planned to create synergies between different European, national and international initiatives in the fields of Earth-system modelling and climate services. It enhances the transfer of information between suppliers and users of climate information.

A key objective of this first Climateurope Festival in April 2017 in Valencia was to discuss the advantages and challenges that climate services face within the sectors of water, ecosystems, agriculture, and food production. Furthermore, innovative small and medium-sized enterprises (SMEs) and start-ups in the field of climate services could make their business-case visible. Based on this, the potential for market development from climate services could be assessed.

Not just frontal presentations were held but also interactive formats were used, enabling the involvement of both presenters and audience.

The participants could share their experience and knowledge at the storytelling sessions and market place. It was a showcase how climate services are already being offered successfully and identify barriers or gaps, where there is still need for improvement, in order to deliver climate services better or more efficiently. Speed networking facilitated cooperation between different EU projects. „Climate Snack" brought together climate scientists and local food producers and discussed the most urgent issues on climate change.

Creative and inspiring presentations on how to tell the story of climate change visually or how to give a talk everyone will remember helped to improve the disseminating of scientific results in the future.

We are convinced that the Climateurope Festival has created new networks and has further engaged existing ones, supporting climate services at the European and national levels. We hope it inspired others to engage to better link science to society.

(Lola Kotova, GERICS)

http://www.climateurope.eu/events-climateurope/festival/

A new Climate Information Portal for Europe - CLIPC

At the end of November 2016, partners of the European research project 'Climate Information Platform for Copernicus' (CLIPC) finalised their development of an integrated web-platform of Climate Data Services.

This platform provides a single point of access for authoritative scientific data and information on climate variability and change, and the impacts of these. Information includes data from satellite and in-situ observations, climate models and re-analyses, transformed data products to enable assessments of climate change and impacts. It also provides a toolbox to generate, combine and compare climate impact indicators. Expanding climate data volumes are supported with a distributed, scalable system, based on international standards. Clear and extensive metadata and guidance is provided.

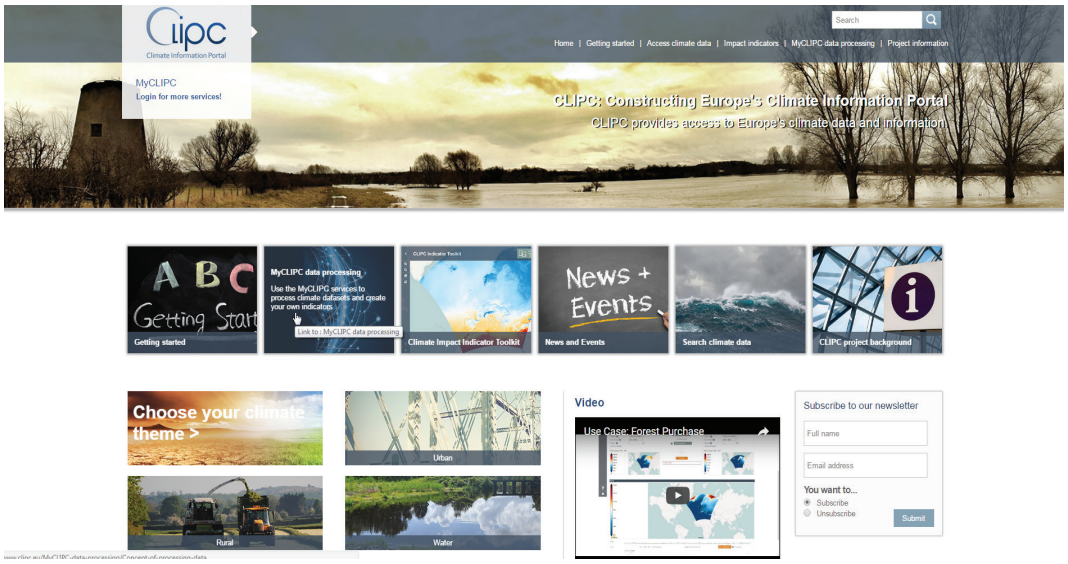
A unique aspect of CLIPC, using a method developed at GERICS, is expert-based confidence information of climate impact indicators for which a quantitative analysis is not always possible.

Special attention is placed on communicating information about the confidence users may have in the various data sets in a qualitative and transparent way. Despite the value and importance of this information, the CLIPC portal does not aim to replace expert consultancy – it is a decision-support system that still may require tailoring to satisfy specific user needs.

CLIPC offers many opportunities for further development and application of the portal as a whole, as well as selected individual components, dependent on future funding. The primary follow-up is related to the application of the portal in the Copernicus Climate Change Services (C3S), managed by ECMWF.

(Juliane Otto, GERICS)

http://www.clipc.eu/



European Space Agency (ESA) launches open data portal

Over the last thirty years a host of environmental satellites have maintained a constant watch on our planet. The Climate Change Initiative (CCI) is the flagship ESA programme that realises the potential of these missions, developing the long-term, high-quality global data needed to underpin climate monitoring and adaptation services.

The CCI open data portal went live in Autumn 2016 at http://cci.esa.int/. It is a single point of access for the key datasets from all the expert CCI project teams, covering: aerosol, cloud, fire, greenhouse gases, glaciers, ice sheets, land cover, ocean colour, ozone, sea ice, sea level, sea surface temperature, and soil moisture. All data is available for free under an open license.

For an overview of what's available, start at the CCI dashboard. To search for something specific, try the CCI data search tool. If you already know what you want, there is a direct ftp link; a wide range of other download methods is also supported (http, Wget, WCS, WMS, OPeNDAP…). For selected datasets, use the CCI viewer to explore further: browse maps, analyse data at a point or along transects, switch between multiple data layers, all via your web browser without the need to install any tools on your machine. For more detailed information and to contact the expert science teams, click through to the individual project sites.

Come and see how CCI data can support your climate services!

(Debbie Clifford, ESA)

http://m.esa.int/ESA

EUPORIAS Project Final Meeting
October 2016, Met Office, Exeter, UK

The EUPORIAS Project, funded for the past 4 years by the European Commission, had its final meeting to discuss the progress made with regard to:

- developing prototypes to provide working examples of ‚end-to-end' climate-to-impacts-to-decision-making services on the seasonal to interannual timescales;
- assessing and documenting knowledge gaps, vulnerabilities and user needs in important sectors through close collaboration with stakeholders;
- developing a set of tools and techniques tailored to the needs of stakeholders for calibrating, downscaling, and modelling sector-specific impacts.

The importance of close engagement between the developers and intended users, to co-produce climate services, was discussed. An extensive analysis of European users has been conducted including in-depth interviews and online survey, showing that reliability, usability, relevance and accessibility of climate forecast information creates barriers to the use of climate predictions. The project has created six prototype climate services for a range of sectors with close engagement with stakeholders.

Regional information is important for impact studies but challenges were discussed, including finding different trends from global compared to regional model projections, and improving the skill of seasonal predictions using downscaling. Tools to analyse, process, bias correct and downscale climate prediction data have been developed and discussions emphasised that good access and open access to data and tools is essential. Finally, a hydrological climate impact modelling example was shown, simulating seasonal river flow in Europe - interestingly with a higher skill than for precipitation.

This article is too short to fully cover the meeting or the project scope and instead provides some highlights. Project findings are being submitted to peer-reviewed publications, so watch this space.

(Chris Hewitt, Met Office)

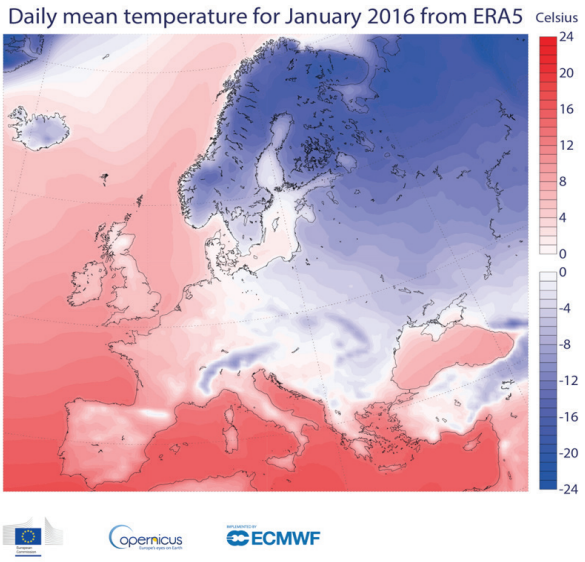
http://www.euporias.eu/

ERA5 -
New milestone in climate change monitoring

At the beginning of November 2016, the European Centre for Medium-Range Weather Forecasts (ECMWF) launched its most powerful global climate monitoring tool to date, ERA5. The publication of the first data of two-month period marks a milestone for climate reanalysis. This release is the beginning of a two-year journey which will progressively allow users to look back in time at the weather of the past 40 years.

Produced by the EU-funded Copernicus Climate Change Service (C3S) operated by ECMWF, this latest development in the ERA series improves on its predecessors through:

- Offering a much improved spatial resolution,
- Providing hourly estimates of atmospheric variables,
- Providing a consistent representation of uncertainties,
- Using more satellite observations,
- Giving access to all input observations.



Picture: ECMWF

ERA5 provides a new numerical description of the recent climate and contains estimates of atmospheric parameters such as air temperature, pressure and wind at different altitudes, and surface parameters such as rainfall, soil moisture content and ocean wave height. All ERA5 data products are open access and free to download, available to the public through the ECMWF Web Application Programming Interface (API).

Global climate reanalysis provides resources for understanding and monitoring the processes associated with climate change and for informing scenarios of future climate change. By making information such as this available, along with the tools and assistance to use it, C3S aims to help societal and business sectors such as insurance, energy and agriculture improve decision-making and planning regarding climate mitigation and adaptation.

(Eva Remete, ECMWF)

https://climate.copernicus.eu/sectoral-information-system

https://climate.copernicus.eu/climate-reanalysis

Climate and Agriculture Experts Gather for Technical Exchange - Climate Services for Resilient Development Partnership (CSRD)

In partnership with the Famine Early Warning Systems Network (FEWSNET) and the International Center for Tropical Agriculture (CIAT), CSRD launched its technical exchange program in Cali, Colombia. This inaugural technical exchange, "Tools of the Famine Early Warning System for Climate Analysis and Food Security," brought together professionals from agriculture and meteorological departments from seven countries of South and Central America. Participants exchanged information on their national priorities and programmes regarding climate services for agriculture and food security, and received training on the use of FEWSNET tools GeoCLIM and GeoWRSI during the week-long session (30 January to 3 February 2017).

A short video was produced to capture the event. In it, participants highlight the value of regional exchange, coordination, and sharing best practices for climate services. Please view it on the CSRD website at http://www.cs4rd.org/resources.html.

CSRD intends to continue the technical exchange series, covering topics in climate information, as well as sectoral uptake and use of services, tailoring, communication, and evaluation of climate services, among others. The technical exchanges will target primarily regional audiences and address regionally relevant topics. In addition to promoting knowledge exchange and building capacity, the exchanges are intended to support and strengthen regional communities of practice. The subject and setting for the next technical exchange event are currently being reviewed, and will be announced shortly. At that point we will be pleased to invite expressions of interest from the CSP community.

(Steve Zebiak, CSRD)

http://www.cs4rd.org

National Assessment on Climate Change in Germany recently published by GERICS

The Climate Service Center Germany (GERICS), together with the international publisher Springer, recently published a new scientific assessment. The study comprises the first ever collection and evaluation of all existing information about climate change in Germany . Thus the 5th IPCC Assessment Report is broken down to the national scale, enriched by additional information from „grey" literature, case studies and the authors' own scientific findings. The German language book „Klimawandel in Deutschland", edited by Guy Brasseur, Daniela Jacob and Susanne Schuck-Zöller is meant to present state-of-the-art scientific knowledge in terms of the expressions of climate change, its impacts, deriving risks and adaptation options. The main chapter is dedicated to impacts in different natural spaces and single economic sectors.

One of the main findings is: Even a global warming of up to 20 Celsius will affect all natural spaces, all geographic regions and all economic sectors in Germany. This means that all areas of life will feel the impacts and everybody in society will experience some kind of related consequence, and so must be prepared.

Guy Brasseur had initiated the project in his former role as Director of GERICS. He explains: "There will be a large number of challenges resulting from climate change even for Germany. Though they might be limited in size and therefore manageable on the first sight, we should not rule out the existence of feedback-loops that may exacerbate the effects. We need therefore integrative measures that reflect the systemic nature of the Earth system. And these measures, which require trans-disciplinary approaches must be urgently generated if we want to keep the negative consequences of climate change as small as possible."

Picture: GERICS

„An assessment of vulnerability against climate change has to be incorporated into every project planning, primarily long-term infrastructure investments", Daniela Jacob, present director of GERICS, adds. „What makes it even more complex, are the global linkages in almost every area. Global trade or for example global migration are issues, that don't know borders and mainly depend from global change. Therefore discussions on the international and European level are not only needed to mitigate global climate change but, as well, how to prepare for it."

Target group of the assessment are decision makers from politics, economy, business and administration.

It delivers all basic information in a compact, readable form and thus helps with decision making across all levels of society . The editors found 11 renowned scientists from important climate change research institutions in Germany to join the Editorial Board. The diversity of views is assured by a broad range of 126 authors from all over the country that represent a great variety of disciplines and methodologies.

Editors: Guy Brasseur, Daniela Jacob, Susanne Schuck-Zöller

(Susanne Schuck-Zöller, GERICS)

http://www.springer.com/de/book/9783662503966

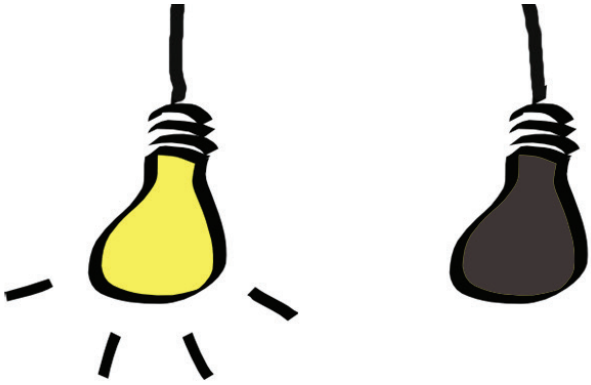
www.gerics.de/klimawandel_in_deutschland/

Energy sector:
Climate predictions as a remedy for blackouts

Blackouts - or the complete failure of electricity distribution – can be the result of weather-related causes or can be originated by technical failure, vandalism, or even damage by animals. Whatever the reason, blackouts have detrimental effects on human health and economy. Knowing how rain, wind or temperature are likely to be in the next months and seasons can help anticipate societal energy needs, and therefore, avoid mismatches between the demand and the supply of electricity that is leading to the feared blackouts.

Despite seeming paradoxal, having lights off is expensive. We are dependent on electricity for all aspects of our daily needs. Our basic infrastructure, from street lighting to communications and home appliances, is entirely reliant on a dependable electricity supply, and businesses, from retailers and offices to steelworks and food processors, would be useless without it.

Europe's electricity production mainly relies on thermal (48%) and nuclear (26%) sources, followed by renewable sources like hydro (12%) and wind (10%) (Eurostat 2015). Changes in the amount of rain, wind speed and temperature can affect not only the availability of renewable resources used for electricity generation, but also non-renewable energies. For instance, the reduced availability of water and the increased air and water temperatures can reduce the efficiency of cooling for thermal and nuclear power stations. According to the expert researcher at Électricité de France (EDF) Laurent Dubus, "imbalances can be due to strong variability in wind and solar generation, in particular in regions where these sources represent a large share of the total (Germany and Spain, for instance), so regions with high penetration rate of renewable energies would in principle be more prone to problems".



Picture: Barcelona Supercomputing Center

Anyway, it is important to keep in mind that "power systems are interconnected in Europe, so that energy can be exchanged between neighboring countries to avoid this type of situations", he says. In addition to the reduced availability of renewable resources, our ageing electricity transmission and distribution systems carry less electric current and operate less efficiently when air temperatures are higher. All this can result in reductions of electricity supply and also blackouts in the worst case.

How can climate predictions be used?

Uncertainty about how our climate is likely to be in the next months, seasons and years, makes it difficult to anticipate blackouts. And here is where climate predictions have a role to play. Climate predictions cannot be as specific as weather forecasts, which can tell you the exact temperature for tomorrow or how much rain to expect, but they can provide probabilistic information about the likelihood of experiencing wetter/drier or warmer/cooler than average weather for the upcoming months with accuracy.

Climate predictions offer a lot of opportunities for the energy sector. Laurent Dubus explains that because blackouts are instantaneous events, "climate predictions wouldn't help to ensure that there is no blackout, but they could help identify potential periods of imbalance which will then be addressed by immediate decisions". However, the use of climate predictions faces some limitations because probabilities are often not well-understood by the users. Francisco Doblas-Reyes, head of the Department of Earth Sciences at the Barcelona Supercomputing Center explains that "climate predictions will only be useful in areas where the quality of the prediction is enough to satisfy users' needs, the minimum level of quality depending highly on the decision to be made, the vulnerability and the variability of both the resource supply and the demand". However, the underlying idea on the suitability of climate predictions is that, even if you never know exactly what will happen in the next months to years, knowing the relative probability of different climate scenarios, allows smarter choices and much better decision-making.

To foster the use of climate predictions within climate-sensitive sectors, a strong focus should be put in co-production, which involves the collaborative interaction among those who produce climate predictions and those who (potentially) use them. "The co-production of relevant climate information is a challenge but also a great opportunity to make the system more resilient and cost-effective in the short term", points out Francisco Doblas-Reyes. He remained also positive when asked about his opinion regarding the future of climate predictions for the energy sector: "A promising future lies ahead", he says.

(Marta Terrado, Barcelona Supercomputing Center)

https://www.bsc.es/

News from the European Commission: Final results of the ERA4CS Joint Call - 26 projects selected to advance Climate Services in Europe

The selection procedure related to the ERA4CS joint call on „Researching and Advancing Climate Services Development" that was launched in spring 2016 successfully closed on 23 February 2017. The final list of selected projects has been released on the March 27.

A total budget of about 63 Mio EUR has been allocated for this call to support 3-year research projects. The projects will be financed by ERA4CS partners from 16 countries, plus co-funding from the European Commission. The overall objective of the call is to enhance user adoption of and satisfaction with climate services (including adaptation services). Improving the quality of climate services is also within the scope of this call.

Among the 54 pre-proposals submitted to Topic A - *Advanced co-development with users* - and 12 proposals to Topic B - *Institutional integration between 30 predetermined Research Performing Organisations (RPOs)* - in total 26 projects have now been selected.

The list of selected projects is available here:

http://jpi-climate.eu/joint-activities/joint-calls/2016finalresults

(Estelle Barrillon, European Commission)

ENHANCE project published results:
'Novel Multi-Sector Partnerships in Disaster Risk Management – Results of the ENHANCE project'.
Editors: Jeroen Aerts and Jaroslav Mysiak

The book presents the outcomes of the 4-year EU project ENHANCE, the core objective of which was to develop novel ways to enhance society's resilience to natural disasters. ENHANCE established and developed multi-sector partnerships between public, private and civil society actors, with an emphasis on the financial sector and focussing on 10 case studies which span the European continent and address a diverse range of risks and hazards. As natural catastrophes, such as floods, heatwaves or wildfires, are expected to become more frequent and intense in the future, the project highlights that mitigating their impacts through working partnerships and the dissemination of risk information is vital. Partnerships offer an effective method to overcome impacts of natural hazards, e.g. through improved information exchange.

The ENHANCE project has delivered concrete scientific and political results at the EU, national and local levels, with outcomes ranging from promotion of knowledge sharing to policy recommendations. All case studies provide good examples of how the project has developed and shared knowledge with stakeholders.

Beyond local and national levels, ENHANCE has contributed to several new European and international policy frameworks, among them the UN Sendai Framework for Disaster Risk Reduction 2015-2030.

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ENHANCE was carried out by 24 partners, including academic institutes, governmental sector, private companies and international organisations, from 11 European countries. The project received funding from the European Union's 7th Framework Programme under grant agreement No 308438.

The ENHANCE book is publicly available on the ENHANCE project website:

www.enhanceproject.eu/media_corner/15

(Riikka Pohjankoski, Arctik)

recent publications

selection of the latest publications from the CSP community

Title: The 'Pacific Adaptive Capacity Analysis Framework': guiding the assessment of adaptive capacity in Pacific island communities
Authors: Olivia Warrick, William Aalbersberg, Patrina Dumaru, Rebecca McNaught, Kate Teperman
Summary: Community-based adaptation (CBA) is becoming an increasingly popular approach to climate change adaptation in the Pacific islands region. Building adaptive capacity should be an important component of projects supporting CBA. The literature establishes that adaptive capacity is highly context and culture specific. However, to date, there has been little research into the factors and processes that enable adaptive capacity in Pacific island communities. This paper discusses the Pacific Adaptive Capacity Analysis Framework, a theoretical framework developed to guide assessment of adaptive capacity for the purposes of supporting CBA projects. The framework identifies seven broad factors and several sub-factors of Pacific-specific adaptive capacity: (1) human capital; (2) social capital; (3) belief systems, worldviews, and values; (4) resources and their distribution; (5) options for adaptation, livelihood, and food supply; (6) information and awareness; and (7) history of dealing with climate stress. The paper presents a case study of adaptive capacity from a community in the Solomon Islands and concludes that unlike many adaptive capacity determinants identified in the broader international literature, function-based (factors shaping ability to access and use resources) and cognitive (for example, values and belief systems) determinants are of particular relevance in the Pacific community social and cultural context. The key to building upon cognitive and function-based aspects of adaptive capacity is increasing the ability of people to liaise with external support organisations to plan and acquire resources for adaptation on their own terms.
Link: http://link.springer.com/article/10.1007/s10113-016-1036-x

Title: Dialogue for decision-making: unpacking the 'City Learning Lab' approach
Authors: Julie Arrighi, Bettina Koelle, Monica Coll Besa, Meggan Spires, Jess Kavonic, Dianne Scott, Aynur Kadihasanoglu, Sukaina Bharwani, Chris Jack
Summary: This paper reviews key themes related to the origins of the City Learning Lab process. We explore the global sociopolitical and environmental context, which catalysed the City Learning Lab in Southern Africa. The 'City Systems' section then focuses on the complexity and interconnected nature of city systems. Building on some of the key aspects that make city systems resilient, a literature review of 'Knowledge Creation in Complex City Systems' explores knowledge production and inclusive decision-making within a city context that reinforce resilience. Following that, the 'Adult Learning' section provides an in-depth review of how to maximize individual and collective learning. Finally, the paper concludes with a discussion of the 'City Learning Lab Process' which combines themes of previous sections into a model for research and city planning currently being tested in the five cities.
Link: http://climatecentre.org/downloads/files/RCCC_JA_wps%207%20City%20Learning%20Lab%20v2.pdf

Title: Forecasts, Financing & Acceleration of Humanitarian Logistics: From Supply Chain to Value Chain
Authors) Janot Mendler de Suarez, Pablo Suarez, Erin Coughlan de Perez, Dak Martin Doleagbenu
in: Supply Chain Management for Humanitarians: Tools for Practice
Summary: Given the up-until-the-disaster-strikes uncertainty of demand, and the event-driven supply chains, how can humanitarian logisticians overcome the coordination problems of orchestrating disaster preparedness activities across a complex networked system with greater agility (e.g. Christopher & Tatham 2011)? Forecasters, disaster managers, and people at risk need to build common ground in order to design smart forecast-based de-

cisions - as well as simple decision-based forecasts (Suarez 2009). While it would be desirable to accelerate supply chains by shifting from acting in response to an observed disaster to acting in response to a forecast with a high probability of leading to disaster, the humanitarian sector confronts many barriers to the effective use of forecasts.
Link: https://www.koganpage.com/product/supply-chain-management-for-humanitarians-9780749474683#region

Title: Scoping Study of Climate Information Needs for Chinese Water Sectors
Authors: Sarah Opitz-Stapleton, Han Jiarui, Lv Lili, Ye Qian, Jia Wei and Roger Street
Summary: The Chinese water sector is complex with multiple ministries, departments, river commisions and bureaus involved in management – from flood control and drought buffering to water allocation for urban use – at a variety of institutional scales. All water operations are impacted by weather events, and potentially by climate change, but not all stakeholders incorporate weather and climate information into their planning and operations. This study, conducted through the Climate Science for Service Partnership–China (CSSP) programme led by the UK Met Office, investigates the barriers, challenges and opportunities for translating weather and climate information products for different stakeholders within China's diverse water sector.
Link: http://planeight.org/wp-content/uploads/2017/01/CSSP_WaterSectorStudy.pdf

Title: A roadmap for rapid decarbonization
Authors: Johan Rockström, Owen Gaffney, Joeri Rogelj, Malte Meinshausen, Nebosja Nakicenovic, Hans Joachim Schellnhuber
Summary: Although the Paris Agreement's goals (1) are aligned with science (2) and can, in principle, be technically and economically achieved (3), alarming inconsistencies remain between science-based targets and national commitments. Despite progress during the 2016 Marrakech climate negotiations, long-term goals can be trumped by political short-termism. Following the Agreement, which became international law earlier than expected, several countries published mid-century decarbonization strategies, with more due soon. Model-based decarbonization assessments (4) and scenarios often struggle to capture transformative change and the dynamics associated with it: disruption, innovation, and nonlinear change in human behavior. For example, in just 2 years, China's coal use swung from 3.7% growth in 2013 to a decline of 3.7% in 2015 (5). To harness these dynamics and to calibrate for short-term realpolitik, we propose framing the decarbonization challenge in terms of a global decadal roadmap based on a simple heuristic—a "carbon law"—of halving gross anthropogenic carbon-dioxide (CO2) emissions every decade. Complemented by immediately instigated, scalable carbon removal and efforts to ramp down land-use CO2 emissions, this can lead to net-zero emissions around mid-century, a path necessary to limit warming to well below 2°C.
Link: http://science.sciencemag.org/content/355/6331/1269

upcoming events
in the climate and climate services community

March for Science
22 April 2017
Globally
On Sunday, 22 April 2017, in numerous cities all around the globe, demonstrations will take place in order to support science and to emphasize the importance of information and expertise for sound decision-making and for societies in general. Find your next March for Science under
https://www.marchforscience.com/

3rd European Climate Change Adaptation Conference 2017 (ECCA)
5 - 9 June 2017
Glasgow, UK
The theme of ECCA 2017 is '*Our Climate Ready Future*'. The conference will inspire and enable people to work together to discover and deliver positive climate adaptation solutions that can strengthen society, revitalise local economies and enhance the environment.
Organised by the 3 EU-funded projects IMPRESSIONS, HELIX and RISES-AM, ECCA 2017 is held in Europe but the focus is global, with presenters from 48 countries on five continents. ECCA's programme features three plenary sessions and 85 parallel sessions. More details on:
http://ecca2017.eu/conference/programme/

The **Hamburg University of Applied Sciences** (HAW) is announcing **several events**:

https://www.haw-hamburg.de/english.html

Founded in 2008, the International Climate Change Information Programme (ICCIP) http://www.iccip.net/ is a leading independent organisation in the field of information, communication and technology transfer on climate change daptation. ICCIP is running a major outreach exercise in 2017, which entails a number of scientific events and publications.

Call for papers: **„Symposium on Climate Change Impacts in the Urban Environment: Mitigation and Adaptation Options"**
26 - 27 June 2017
Mexico City
Further details and a flyer can be seen at:
https://www.haw-hamburg.de/en/ftz-als/events/mexico.html

World Symposium on Climate Change Impacts and Adaptation Strategies to Coastal Communities
5 - 7 July 2017
Samoa
Further details and a flyer can be seen at:
https://www.haw-hamburg.de/en/ftz-als/events/coastal2017.html

„North American Symposium on Climate Change and Coastal Zone Management"
10- 11 August 2017
Montreal, Canada
Further details and a flyer can be seen at:
https://www.haw-hamburg.de/en/ftz-als/events/montreal2017.html

World Symposium on Climate Change Adaptation" (WSCCA- 2017)
6 - 8 September 2017
Coimbra, Portugal
Further details and a flyer can be seen at:
https://www.haw-hamburg.de/en/ftz-als/events/portugal-wscca-2017.html

upcoming events
in the climate and climate services community

4th International Conference on Energy & Meteorology (ICEM)
27 - 29 June 2017
Bari, Italy

The 4th International Conference on Energy & Meteorology (ICEM) is a unique chance for the energy industry and the meteorological sector to connect, exchange knowledge, and work together. At the 4th ICEM, through targeted workshops, panel discussions with international experts, and brainstorming sessions, you will be able to plant the seeds for new business opportunities and interact with an international community of energy specialists, economists, scientists, and policymakers working at the thriving nexus of energy with weather and climate.
The conference theme for ICEM 2017 is: "Challenges in weather and climate services for energy"
http://www.wemcouncil.org/wp/icem2017/

European Climatic Energy Mixes (ECEM) Workshop to showcase the ECEM demonstrator
30 June 2017
Villa Romanazzi Carducci, Bari, Italy

How will energy supply meet demand?
This ECEM workshop brings together leading climate and energy scientists, industry practitioners and policy makers to showcase the recent developments of the ECEM demonstrator designed to assess how well energy supply will meet demand in Europe, focusing on the role of climate.'
Delegates will get the opportunity to meet sector experts as well as test-drive the demonstrator.
ECEM is part of the Copernicus Climate Change Service (C3S)
To register your interest email
lesley.penny@uea.ac.uk

Biodiversity and Health
in the Face of Climate Change
Challenges, opportunities and evidence gaps
27-29 June 2017
Bonn/Germany

A European Conference hosted by the German Federal Agency for Nature Conservation (BfN) and the European Network of Heads of Nature Conservation Agencies (ENCA), in co-operation with the Helmholtz-Centre for Environmental Research (UFZ) / German Centre for Integrative Biodiversity Research (iDiv).

Climate change poses significant challenges to biodiversity and human well-being in Europe. As the majority of Europeans live in urban areas and cities are often subject to exacerbated heat island effects, consequences of climate change may be experienced first in urban settings. Biodiversity, in turn, can provide health and climate change mitigation and adaptation benefits that can be actively fostered by nature-based solutions.
This joint European conference in Bonn will bring together experts from science, policy and practice to highlight and discuss the importance of biodiversity's contribution to human health in the face of climate change. In this context health is considered in its physical, psychological and social dimension, including socio-environmental equity. The aim of the conference is to increase knowledge, share experiences and foster nature-based solutions to meet the challenges of climate change and health issues.
Latest scientific findings on the impacts of climate change on European biodiversity and links to human health will be discussed. Furthermore, the implementation of nature-based solutions towards health and climate goals within cities and their surrounding areas will be outlined. Interactive sessions will focus on case studies of successful demonstration projects and lessons learned. Resulting discussions will lead to recommendations for creating synergies between ongoing policy processes, scientific programmes and practical implementation.

Programme and registration details follow soon.
For further information please contact
jutta.stadler@bfn.de

upcoming events
in the climate and climate services community

4th International Conference on Earth System Modelling (4ICESM)
28 August – 1 September 2017
Hamburg, Germany

The Max Planck Institute for Meteorology is pleased to announce the 4th International Conference on Earth System Modelling (4ICESM). The 4ICESM will advance discourse around four themes related to the World Climate Research Programme's Grand Science Challenges. Invited cross-cutting presentations on the history, philosophy and sociology of Earth system science and a conference keynote lecture will complement presentations and posters on each of the themes, as outlined below.
https://www.mpimet.mpg.de/en/science/4icesm/

Annual Meeting: European Conference for Applied Meteorology and Climatology
4 – 8 September 2017
Dublin, Ireland

The conference theme for the 2017 EMS/ECAC conference is 'Serving Society with better Weather and Climate Information'. There are a number of relevant sessions for climate services especially in the Engagement with Society part of the programme. See in particular the ES1 'Bringing Benefits to Society' sessions which include:

- ES1.3 Creating national and regional climate services in Europe through partnerships
- ES1.4 Evaluation and quality assurance of climate services – Methods, criteria and pitfalls
- OSA3.3/ES1.5 The Copernicus Climate Change Service implemented by ECMWF
- OSA3.4/ES1.6 Deriving actionable information from climate prediction on decadal to scenario time scales

Full details about EMS/ECAC 2017 are available here:
http://www.ems2017.eu/home.html.

The deadline for abstract submission is 21 April – see http://meetingorganizer.copernicus.org/EMS2017/sessionprogramme. The session convenors look forward to receiving abstracts from all those active in climate services including scientists, developers, providers and end-users.

5th International Conference on Reanalysis
13-17 November 2017
Rome, Italy

Lead organization(s): Copernicus Climate Change Service (C3S) and the World Climate Research Programe (WCRP)
Climate research has benefited over the years from the continuing development of reanalysis. The conference will bring together reanalysis producers, observation providers, numerical modellers and the user community to review current reanalysis activities and to discuss user needs for future reanalyses. Interested contributors are invited to submit an abstract and apply to receive travel support.
To register or for more information, visit the Copernicus Climate Change Service website
http://climate.copernicus.eu/events/5th-international-conference-reanalysis

surveys
online surveys in the climate services community

SEI - Stockholm Environmental Institute

As a follow up to the interesting sessions held at the ICCS5, SEI would very much appreciate input from climate service users, intermediaries and providers to this survey, which will inform the future direction of climate services. SEI will be happy to share the results with respondents in due course. Results and outputs will also be made available here (www.weadapt.org/using-climate-information).

PRIMAVERA

The project (see also page 18) would like to invite you to complete a short (approx. 10mins) online survey about user needs for weather and climate information. Please access the survey via this link: https://www.surveymonkey.com/r/Survey_Primavera

QA4Seas - University of Leeds

The Copernicus Climate Change Service (C3S) wants to understand the requirements of those using multi-model seasonal forecasts and invites you to complete a short (5-10 mins) online survey. The results from this survey will inform the evaluation and quality control of the seasonal forecasts products which will be freely provided by the C3S. The survey can be accessed under

https://wh.snapsurveys.com/s.asp?k=148301796517

Climate Services Partnership

about CSP

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 programmes 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 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: Tanja Blome, Daniela Jacob, María Máñez Costa, Irene Fischer-Bruns (all GERICS)

GERICS Climate Service Center Germany
An institution of Helmholtz-Zentrum Geesthacht

IRI

To subsrcibe or unsubscribe to the newsletter, email tanja.blome@hzg.de with the subject title „SUBSCRIBE: CSP newsletter“ or „UNSUBSCRIBE: CSP newsletter“