

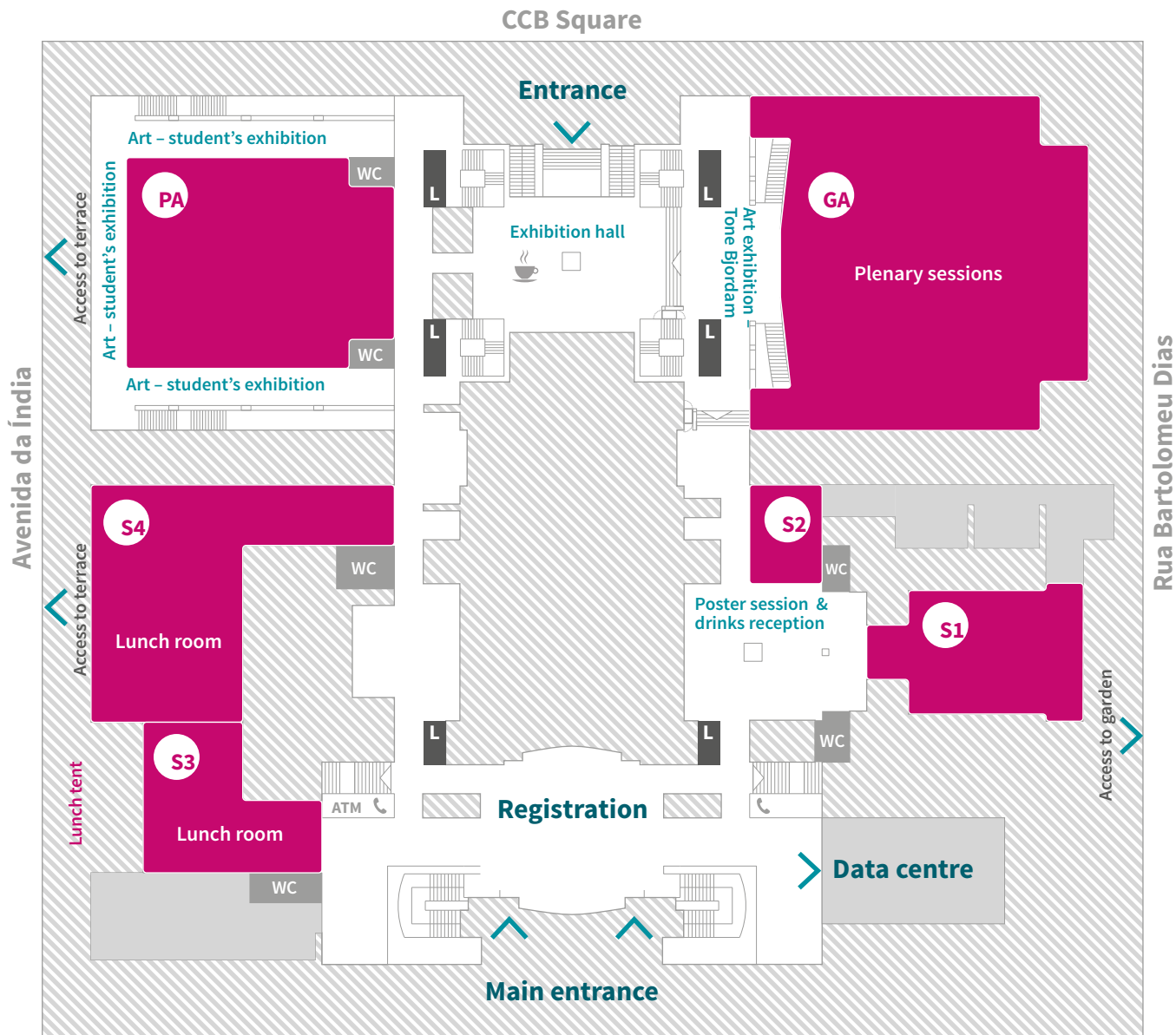


WORKING TOGETHER TO PREPARE FOR CHANGE

European Climate Change Adaptation Conference 2019

28-31 MAY 2019 | CENTRO CULTURAL DE BELÉM, LISBON

First floor



S3 Lunch room

S4 Lunch room

Accessibility

If you have reduced mobility, please use the garage on the side of the river, accessed by Av. da Índia.

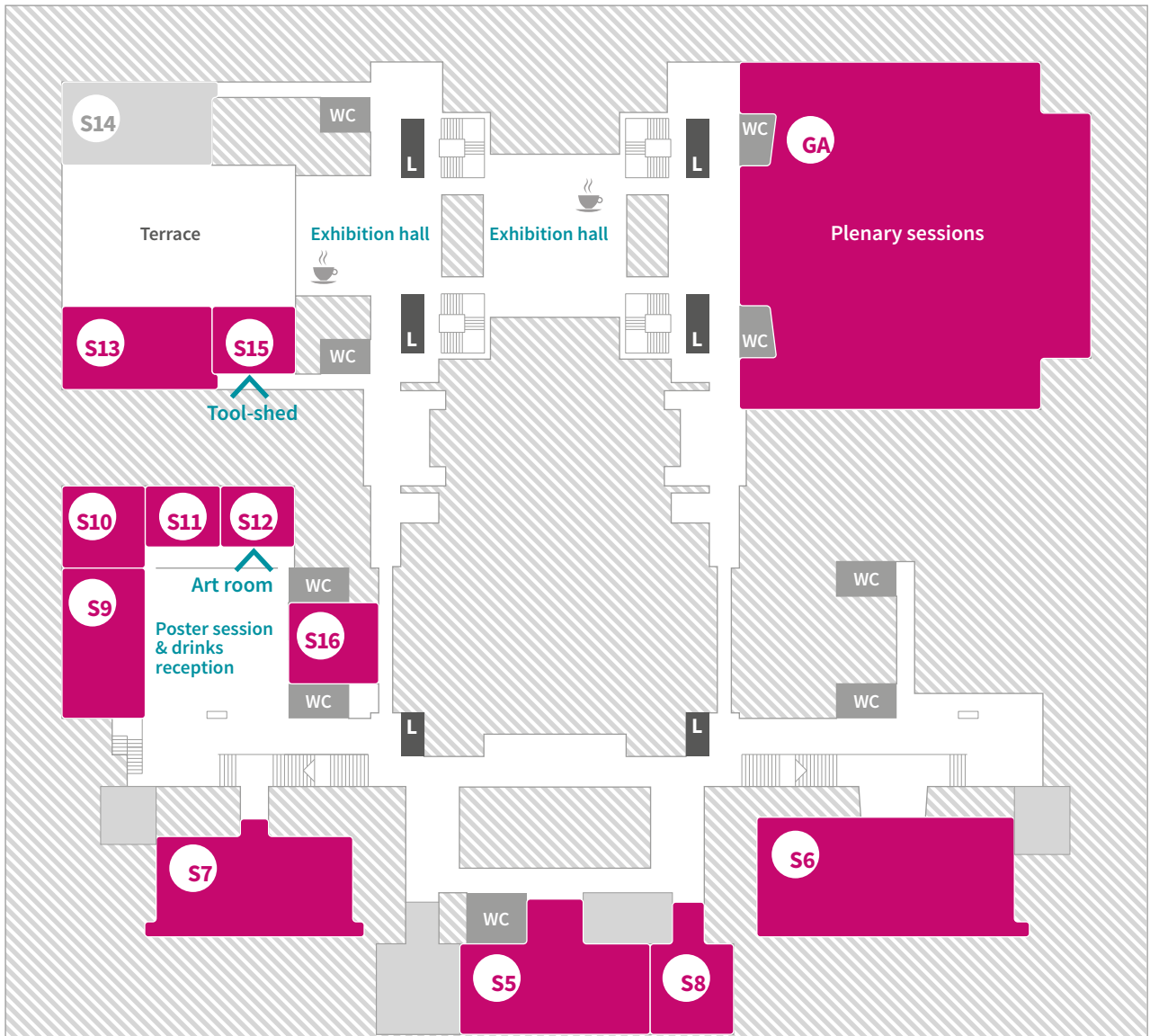
Helpline: (+351) 213 612 666

Presentations

Please bring your presentation to the **Data centre** at least **4 hours** before your session.

Cloakroom: on Floor zero

Second floor



Information

- @ECCA2019 www.ecca2019.eu
- Network: ECCA2019 | Password: Time2Adapt!
- Rui.Veras@iwahq.org | Press officer
- appdoevento.pt/ecca2019 | Conference app

ECCA app



- S15** Tool-shed
- S12** Art room



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CCB — CENTRO CULTURAL DE BELÉM — CCB

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Welcome to ECCA 2019!

Mário Pulquério

Hosted for the first time in southern Europe, the 4th European Climate Change Adaptation (ECCA) conference brings together researchers, policymakers and practitioners from Europe and beyond to discuss recent advances on climate change adaptation, find solutions and inspire collective action to increase Europe's resilience.

This is the first major conference to focus on harmonisation and collaboration between climate change adaptation (CCA) and disaster risk reduction (DRR). Why is this relevant? Both aim to reduce the negative impacts of climate change and disasters on the natural environment, human society and economies by anticipating risks and uncertainties, and addressing vulnerabilities (Mitchell *et al.* 2010). However, historically each field has developed independently with different actors and institutions, focusing on differing time horizons, research methodologies and different policy frameworks. This can lead to suboptimal strategies and duplicated effort. The past few years have been sobering in demonstrating the urgent need to take action, with this year's annual World Economic Forum Global Risk Report ranking extreme weather events and failure of climate change mitigation and adaptation as the two most likely risks to society in the next 10 years.

Three key international agreements – the Paris Agreement, Sendai Framework for DRR and the Sustainable Development Goals – provide opportunities to increase the coherence and collaboration between these two areas. The need to rapidly further integration of these two communities was reinforced in the Rome Declaration of Stakeholders, an output of the European Forum for DRR (November 2018), and in the evaluation of the European Strategy on Adaptation to Climate Change.

Achieving the 2030 goals and targets of these international agreements will only be possible through a collaborative effort from all sectors of society across all governance levels, both public and private. ECCA 2019 provides a common space for dialogue between the actors, where collaborations can be forged, solutions found and actions defined for Europe to move steadily towards a resilient path for the short and longer term. Thus, it is with great pleasure that I welcome you to Lisbon to prepare for the next decade.

Conference chair

University of Lisbon



Chair of Executive Committee

European Commission,
Directorate-General for
Research and Innovation



 @dgsoerensen

Diogo de Gusmão-Sørensen

When it comes to climate change, we live in a world that is increasingly full of difficult messages, and with an increasing number of diverse messengers. Negative messages, fake news and alternative facts are very likely to have been a leading cause in turning cognitive dissonance into a lifestyle. It is perhaps not all that surprising that as a result we now have a recognised new form of behavioural disorder caused by climate change – solastalgia – characterised, amongst other things, by chronic distress. Mental health is of course but one chapter in a long list of issues related to climate impacts on human, animal and plant health – many of which we still know little or nothing about.

Climate and health is a good example of two communities coming together to address an important challenge that demands the breaking of the silo-mentality that can sometimes be found in research communities. The European Union has long promoted a user-driven, cross-sector, multidisciplinary set of actions that continue to drive its research and innovation framework programmes on climate action. These actions have, over the years, been used as mechanisms to deliver ECCAs. Breaking barriers has long been a tradition of ECCA, and this year is no exception – climate change and disaster risk reduction, together at Europe's largest climate adaptation conference. In 2019, ECCA also sets a new standard by attracting the support of a Member State – Portugal, and its capital city, Lisbon – for which we are very grateful indeed.

My generation (X) have thus far made use of individual carbon budgets that are already entirely at odds with the budgets available to Millennials and Generation Z if we are to avoid a 1.5°C or even a 2°C world. Their budgets will be around 1/8th that of ours – and this matters because right now, there just isn't another way other than reducing global greenhouse gas emissions. Our children seem to know something is wrong, reason why they have begun taking to the streets and protest around the world. In 2015, we invited schoolchildren to come to ECCA – and they did surprise us with their incredible sense of awareness and sharp minds. ECCA will continue to welcome schoolchildren to its conferences, and I ask you to actively engage with them here in Lisbon.

We need to ensure that we maintain an active dialogue with the next generations (and this needs to include their school curricula), so that they are not seeking for answers on our streets, but learning about their planet's climate challenges and solutions in the classroom. A basic understanding of climate change, and how it is likely to affect them during their lifetime, is surely now a fundamental requirement for every schoolchild in Europe and around the world.

I started my message by highlighting the perils of poor strategies on how we communicate the climate challenges ahead of us. IPCC have been mastering the art of communicating climate change for decades, and its latest special report on 1.5 °C has given us the starkest messages on impacts yet. This report (and all that preceded it) together with very recent developments in earth system models, place an enormous sense of urgency on us and are the clearest illustration yet that we need to continue to support the underpinning climate science that allows us to advance adaptation science and our understanding of our planet.

ECCA is all about creating opportunities to learn, share, network, promote action and enact change, by using the very latest best available knowledge. ECCA 2019 is brought to you by the PLACARD, BINGO and RESCCUE projects funded under Horizon 2020 – the European Union’s latest Research and Innovation Framework Programme. It has been a pleasure to work with these incredibly talented, innovative and engaging teams, and we are deeply grateful for their commitment to ECCA – thank you.

Let us all be the agents of change that we are now required to be, and may ECCA 2019 play an important role in helping us with these challenges, enabling us all to offer, seek and drive the knowledge, information and solutions we need.



Photo by Vita Marija Murenaite on Unsplash

Portugal's Minister of
the Environment and
Energy Transition



João Pedro Matos Fernandes

Welcome to Lisbon!

It is with great pleasure that Portugal hosts the 4th European Climate Change Adaptation Conference. We are fully convinced that this edition will be a landmark in European adaptation, providing an enabling field for cooperation and knowledge sharing. That is why the Portuguese Ministry of Environment and Energy Transition joined the initiative of the three organizing projects, since its beginning: PLACARD, BINGO and RESCCUE. We hope you enjoy it!

We consider most appropriate to foster these initiatives in order to deal with the challenges induced by climate change in the territories and its respective environmental, social and economic dimensions. IPCC's Special Report **Global Warming of 1.5°C** makes it clear that we are already observing the impacts of climate change aggravated by the fact that there isn't still a global response to assure the Paris Agreement goal to limit global warming well below 2°C.

Adaptation to climate change isn't a mere environmental topic dealt by a limited community, but a central aspect of our societies with direct influence in all its dimensions. This is particularly true to countries most affected, as it is the case of Portugal and other southern countries within the European context, as it is sustained in most of research work and recent studies.

It is therefore crucial to find innovative and effective ways to assure the integration of adaptation issues into our daily routines and into planning on all sectors of society. This must be done in an integrated manner in order to potentiate the benefits to sustainable development and poverty reduction, reducing inequalities.

Photo by Fulvio Ambrosanio on Unsplash

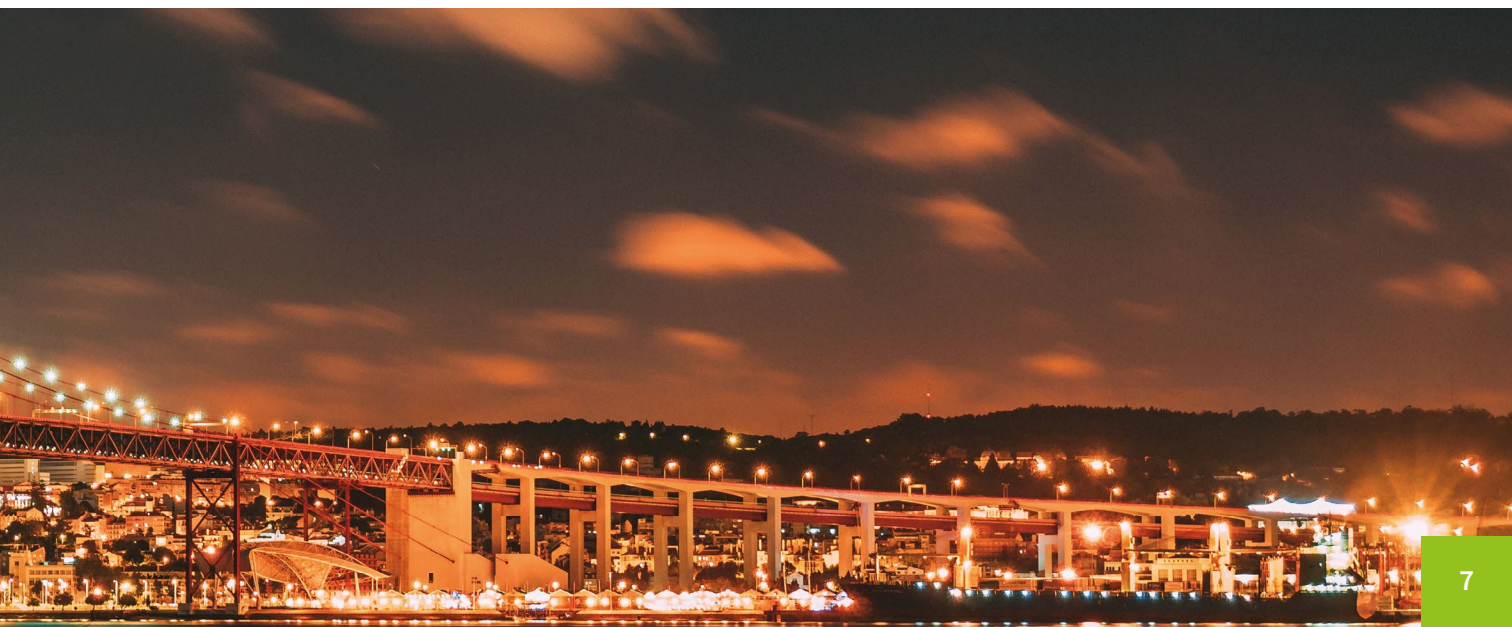


The challenge ahead requires a close articulation between science, practices and policies, so we welcome the efforts to bring these different actors to the Conference. We hope new bridges shall be established, many solutions improved, and put in place.

Let me say that climate change represents for Portugal a double challenge: a mitigation challenge, because we are fully committed to reach carbon neutrality in 2050 and an adaptation challenge, because we want to reduce our vulnerability to extreme weather events such as heat waves and droughts, associated to forest wildfires and desertification. We also have a very vulnerable coastline to erosion intensified by sea level rise and have been affected by several storms with strong winds and heavy rainfall, so we can consider we have almost the full picture in terms of negative impacts.

Although climate change impacts all sectors of activity, water management is at the centre of our adaptation concerns. In recent years, drought events in Portugal have become more frequent and more intense. Therefore, there is a sense of urgency in dealing with this issue. This is also a great opportunity to promote water transition, based on awareness raising for saving water, promotion of efficient use of this scarce resource and promotion of water circularity, through reutilization.

Conscious of the challenges, Portugal has adopted its first National Adaptation Strategy in 2010. This strategy was revised in 2015 (ENAAC 2020) and presently we are in position to adopt our National Adaptation Action Plan for 2030 (P-3AC) aiming at implementation of concrete measures and monitoring its effectiveness.





Fernando Medina

Climate change is real, it is no longer an issue of a distant future, but something happening this very moment. The evidence is overwhelmingly clear and so is the scientific consensus.

As urban areas continue to grow their impact on the climate increases. Cities occupy only 2% of the world's landmass but they consume over 2/3 of the world's energy and are responsible for more than 70% of global CO2 emissions. As Mayor of a European capital and coastal city, I am fully aware of the challenges of a changing climate, but also of our responsibility and ability to win the world's fight against climate change.

For the past decade, we have been strongly engaged in building a sustainable future for Lisboa where green is part of an active governance. As never before, Lisbon is investing in urban green infrastructure as a climate adaptation tool, opening five green corridors with more than 200 hectares of new green spaces, an increase of over 10% in a decade, and planting more than 60.000 trees to tackle urban heat island effect. Until 2021, the increase will reach almost 20% of new green, with a significant impact on the quality of life in the city today and its environmental sustainability for future generations.

A greener future with an economy based on creativity and innovation, leaving no one behind and focusing on environmentally sustainable activities and, last but not least, based on human dignity, openness and tolerance as key values of our society. We know that this will only be achieved by building our policies on state-of-the-art scientific knowledge, learning from our peers and from scientific experts across Europe.

The European Climate Change Adaptation (ECCA 2019) conference in Lisboa takes place at a key moment for the city, providing an excellent opportunity to raise awareness to the issue of climate change and address global resilience, as well as a forum to exchange ideas and knowledge on how we can collectively improve our policies and fight climate change.

Lisboa, European Green Capital 2020, aims to become one of the most sustainable cities in Europe but also one of the best to live, work and study.

I hope you are able to enjoy our amazing Atlantic sea views, our heritage, culture and people.

Welcome to Lisboa!

Mayor of Lisbon





Contents



12	ECCA 2019
13	Schedule
14	Conference themes
25	Tuesday 28 May
27	11:15 Tuesday
46	14:00 Tuesday
66	16:15 Tuesday
85	Wednesday 29 May
87	11:15 Wednesday
106	14:00 Wednesday
126	16:15 Wednesday
145	Thursday 30 May
147	09:00 Thursday
165	11:15 Thursday
187	Poster session & drinks reception
218	Side events
218	JPI Climate – Climate services: state of affairs, relevance for users and the way forward
220	French Environment and Energy Management Agency (ADEME)
223	Young people @ECCA
224	Art programme
226	Plenary session moderator
227	Social events
228	Excursions
231	Organisers
232	Committees
237	Sponsors
242	About ECCA
244	Contact



ECCA 2019

Centro Cultural de Belém (CCB), Lisbon

28–31 May, 2019

Climate change is considered by many to be the challenge of the 21st century. The urgency and severity of this challenge call for integrated ways of looking at responses to reduce the risks associated with environmental and social stressors, and ensure a secure future for humans and ecosystems. Adapting to climate change requires a coordinated and synergistic approach from a diverse range of actors across sectors, as well as questioning assumptions about the drivers of risk, vulnerability and environmental change.

A cooperative approach allows us to improve learning and knowledge exchange in order to deliver optimal solutions. Interaction and collaboration with the disaster risk reduction (DRR) community is a critical element in improving climate change adaptation (CCA), as the communities share similar goals and activities. Bringing the two groups together is particularly important in relation to the goals and targets of the three major international agreements: Paris, Sendai Framework for DRR and the Sustainable Development Goals.

The 4th ECCA builds on past conferences that took place in Hamburg (2013), Copenhagen (2015) and Glasgow (2017), and aims to:

- Provide a space that facilitates a dialogue among a diverse range of actors from academia, government, business and community on the multiple aspects of climate change adaptation.
- Promote the communication and knowledge exchange between researchers, policymakers and practitioners.
- Find integrated solutions and inspire action.
- Support ongoing efforts to enhance the coherence and synergy between CCA and DRR research, policy and practice.
- Discuss key challenges and solutions in cities.
- Provide a stage for presenting European's excellence on Research & Innovation for CCA.
- Inform the next European funding framework for Research & Innovation.




The biennial European Climate Change Adaptation conference is convened by projects that have received funding from the European Union's Horizon 2020 Research and Innovation Framework Programme.

Schedule





Monday 27 May

	13:00–17:45	19:00–21:00
	Side event: JPI Climate & Climateurope	Reception at Lisbon City Hall Praça do Município, 1100-038 Lisbon
		




Tuesday 28 May

09:00	10:45	11:15	13:00	14:00	15:45	16:15	18:00–20:00
Opening plenary		Parallel session		Parallel session		Parallel session	Poster & drinks reception Centro Cultural de Belém

Wednesday 29 May

09:00	10:45	11:15	13:00	14:00	15:45	16:15	19:30–23:30
Business plenary		Business parallel session		Parallel session		Parallel session	Conference dinner at Fábrica XL in LX Factory R. Rodrigues de Faria 103, 1300-501 Lisbon
							

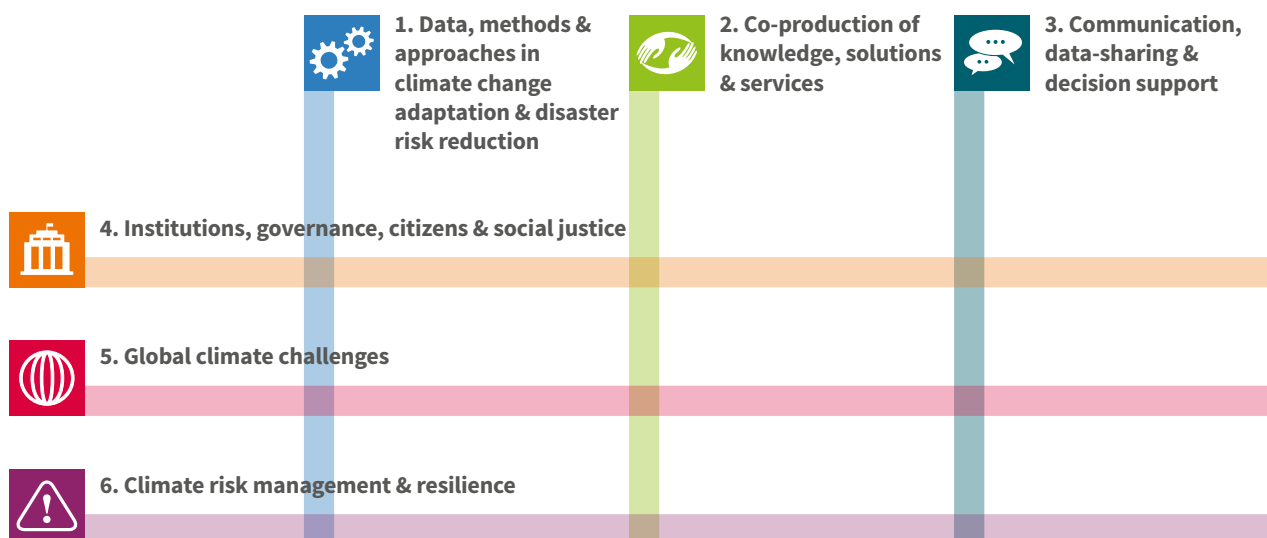
Thursday 30 May

09:00	10:45	11:15	13:00	14:00	
Parallel session		Parallel session		Closing plenary	

Friday 31 May

09:00	
Full & half-day excursions – departing from CCB	

Conference themes



1. Data, methods and approaches in climate change adaptation and disaster risk reduction

What are the examples on using seasonal forecasting and regional climate change projections in climate change vulnerability and risk assessments? What is the evidence of the impacts and risks of climate change? How should we evaluate the success of adaptation options?

SP004 Unfolding the potential of climate services for climate change adaptation
11:15 Tuesday | Room S5

SP013 Advances in climate risk assessment: Measuring with impact chains
14:00 Tuesday | Room S13

SP023 Adaptation pathways – from trailblazing to trail guide: Learning from practical implementation of adaptation pathways approach and shaping a guide/standard
11:15 Wednesday | Room S9

SP025 Adaptation decision-making for uncertain futures: practical application of scenarios
11:15 Wednesday | Room S2

SP027 Science in support of EU disaster risk reduction policies in the area of weather and climate extreme events
14:00 Wednesday | PA

-
- SP039** Adaptation pathways for climate-resilient development
09:00 Thursday | Room S5
-
- SP043** Understanding practice, progress and lessons learned in adaptation – approaches to monitoring, reporting and evaluation at national level and the way forward
11:15 Thursday | Room S1
-
- SP048** Participatory approaches to develop warning systems for natural hazards and a scientific based regional adaptation plan (PIAAC-AMAL). Cases of the Nordic countries and Southern Portugal region
11:15 Thursday | Room S13
-
- SS001** Downscaling to characterise local challenges for climate change adaptation
11:15 Tuesday | Room S8
-
- SS002** Understanding climate trends and their implications for adaptation and risk management
11:15 Tuesday | Room S2
-
- SS008** Climate change and the economy: from assessing to better planning for the future
14:00 Tuesday | Room S9
-
- SS009** Fine resolution climate modelling and downscaling to support adaptation
14:00 Tuesday | Room S10
-
- SS010** Methodological frameworks and decision supporting tools for climate change adaptation
14:00 Tuesday | Room S11
-
- SS016** From floods to droughts: water-related impacts of climate change
16:15 Tuesday | Room S9
-
- SS018** Economic evaluation for risk management and decision support
16:15 Tuesday | Room S11
-
- SS019** Scenarios, pathways and impact modelling for sectoral adaptation
16:15 Tuesday | Room S13
-
- SS022** Economic impacts of climate change and climate change adaptation
11:15 Wednesday | Room S16
-
- SS024** Methods and tools in climate services
14:00 Wednesday | Room S7
-
- SS026** Adapting to a changing climate in agriculture, fisheries and coastal planning
14:00 Wednesday | Room S10
-
- SS028** Exploring the potential of quantitative methods and modelling approaches
14:00 Wednesday | Room S13

SS030 Adaptation to river and coastal flooding

16:15 Wednesday | Room S2

SS032 Characterising risks of extreme climate events for informing adaptation

16:15 Wednesday | Room S8

SS033 Climate scenarios, seasonal forecasts and hydrological modelling

16:15 Wednesday | Room S10

SS042 Managing climate change risk

09:00 Thursday | Room S13

SS043 Measuring progress in climate change adaptation

09:00 Thursday | Room S16

SS047 Urban climate adaptation

11:15 Thursday | Room S10

Tool-shed sessions

TS004 Climate Tagger – a suite of software tools to help organizations in the climate and development streamline and catalogue their data and information resources

14:00–14:30 Tuesday | Room S15

TS008 Assessment of vulnerability to climate change employing regional indicators in an interactive mapping tool for Finland

16:15–16:30 Tuesday | Room S15

TS012 Clim2power web application – translating climate data into power plants operational guidance

12:45–13:00 Wednesday | Room S15

TS017 Taiwan climate change projection information and adaptation knowledge platform

15:30–15:45 Wednesday | Room S15

TS019 Climate-fit.city: Your one-stop shop for urban climate data and services

17:15–17:45 Wednesday | Room S15



2. Co-production of knowledge, solutions and services

What are the examples of co-production of knowledge? How can we improve communication and knowledge exchange between researchers, policymakers and practitioners? How can we involve citizens to improve and implement adaptation solutions?

SP002 Science, policy, people, place and practice in developing Coastal Adaptation Plans: a hands-on, place-based collaborative workshop.

11:15 Tuesday | Room S1

-
- SP003** Knowledge integration as science based-decision making for adaptation strategies
11:15 Tuesday | Room S9
-
- SP008** Learning in and from transdisciplinary practice: Navigating the research-to-practice interface across scales.
14:00 Tuesday | Room S1
-
- SP012** Climate change and cities: Second Assessment Report of the Urban Climate Change Research Network
14:00 Tuesday | Room S8
-
- SP014** Resilient historic communities
16:15 Tuesday | Room S1
-
- SP019** User expectations for a European climate prediction system
11:15 Wednesday | Room S5
-
- SP021** The Copernicus Climate Change Service (C3S) and its role in supporting climate change adaptation and downstream service development
11:15 Wednesday | Room S7
-
- SP029** Arts-based methodologies for youth leadership, empowerment and meaningful engagement in climate change
14:00 Wednesday | Room S5
-
- SP035** EU LIFE programme: Supporting integration and co-production of climate change adaptation in small and medium-sized municipalities across the EU
16:15 Wednesday | Room S7
-
- SP038** Decision-making options for managing risks
09:00 Thursday | PA
-
- SS003** Co-production of sector-based tools and adaptation strategies
11:15 Tuesday | Room S10
-
- SS011** Examining the challenges of co-designing climate services
14:00 Tuesday | Room S16
-
- SS015** Co-development of integrated mitigation and adaptation responses
16:15 Tuesday | Room S8
-
- SS020** Knowledge co-production and brokerage for climate services
16:15 Tuesday | Room S16
-
- SS025** Mobilising local or traditional knowledge for adaptation planning
14:00 Wednesday | Room S9
-
- SS029** Sourcing climate services to enhance planning and investment
14:00 Wednesday | Room S16
-
- SS034** Analysing co-production and transdisciplinarity frameworks in climate services
16:15 Wednesday | Room S11
-

SS035 Facing up to the challenges of co-producing climate adaptation and services
16:15 Wednesday | Room S16

SS040 Climate services and methods for hydrology and flood control
09:00 Thursday | Room S8

SS041 Co-production of knowledge for urban adaptation and planning
09:00 Thursday | Room S11

SS046 Climate services and methods for agriculture and food production
11:15 Thursday | Room S8

SS048 Climate services and methods for heat and health in urban areas
11:15 Thursday | Room S16

Tool-shed sessions

TS005 International knowledge exchange on climate adaptation with the Climatescan platform
14:30–15:00 Tuesday | Room S15

TS011 Toolbox Climate Resilient City
12:25–12:45 Wednesday | Room S15

TS022 Making It Local: Using the Place Standard tool for climate adaptation
11:15–12:30 Thursday | Room S15



3. Communication, data-sharing and decision support

What tools are available to access useful and credible climate data, information and knowledge on climate vulnerability and risk? Are current tools adequate for supporting decisions at different levels? How can communication brokering be improved and lead to action? What is the role of education?

SP007 Advancing ‘Search & Discovery’ for climate action: Exploring the potential of linked open data and artificial intelligence approaches
14:00 Tuesday | Room PA

SP024 Exploitation in CCA & DDR – clustering and discussion
11:15 Wednesday | Room S10

SP028 Understanding the landscape of adaptation platforms in Europe – improving complementarities and connecting needs and practices
14:00 Wednesday | Room S1

SP033 How CCA and DRR communities use strategic narratives for joint purposes: preparedness, accessing funding, improving health & ecosystem-based services
16:15 Wednesday | Room S1

SP041 Increasing climate resilience of infrastructure systems using new data and visualisation, analytics, and decision support tools
09:00 Thursday | Room S10

SP046 Tools and data for climate resilient cities
11:15 Thursday | Room S9

SS006 Approaches, decision-support tools and data needs for adaptation at the urban and regional scale
11:15 Tuesday | Room S16

SS007 Dealing with the challenges of relevance and communication in climate information
14:00 Tuesday | Room S2

SS017 Novel approaches to gaming, decision-support tools and products for adaptation
16:15 Tuesday | Room S10

SS023 Decision-support platforms and tools for climate adaptation and disaster risk reduction
14:00 Wednesday | Room S2

Tool-shed sessions

TS001 An IMPREXive serious game
11:15–11:45 Tuesday | Room S15

TS003 Understanding Europe's risk landscape with the European Climate Risk Typology
13:00–14:00 Tuesday | Room S15

TS015 Fun activities to understand climate downscaling and adaptation decision
14:45–15:15 Wednesday | Room S15

TS016 The ClimateChangePost: a knowledge broker on climate change and adaptation with a special focus on 'Europe in a changing climate'
15:15–15:30 Wednesday | Room S15

TS020 BRIGAD tools: practical support for innovators to get from an idea to a signed deal
09:00–10:30 Thursday | Room S15

TS021 BINGO Online Portfolio of Adaptation Measures
10:30–10:45 Thursday | Room S15

TS023 Search and discovery of climate adaptation and disaster risk reduction landscape
12:30–13:00 Thursday | Room S15

TS024 Mapping governance of adaptation to climate change to support decision-making
13:00–13:20 Thursday | Room S15



4. Institutions, governance, citizens and social justice

How can we enhance institutional collaboration? Are there new ways to increase coherence and communication from the local to European scale? How can we increase trans-boundary collaboration and solutions? Are there innovative ways to involve the private sector?

SP005 How can we avoid coastal emergencies through better governance?
11:15 Tuesday | Room S6

SP006 Making socially just adaptation a reality – from concepts to policy and practice
11:15 Tuesday | Room S7

SP011 Monitoring adaptation in cities: Considerations for equity and justice
14:00 Tuesday | Room S7

SP015 Adaptation reporting and infrastructure operators – sharing practical experience and promoting best practice
16:15 Tuesday | Room S5

SP018 Supporting and further strengthening institutional coordination between and capacities of CCA and DRR communities – recommendations and ways forward
11:15 Wednesday | Room S1

SP020 National Adaptation Strategies and Plans: sharing experiences and discussing actual challenges opportunities
11:15 Wednesday | Room S6

SP026 Sustainable finance and the road to climate change adaptation
11:15 Wednesday | Room S13

SP031 The governance of climate adaptation and natural hazards in Alpine countries: lessons learnt on multi-level governance and mainstreaming
14:00 Wednesday | Room S8

SP034 Transnational cooperation in climate change adaptation and disaster risk reduction in Europe: challenges, gaps and lesson learned
16:15 Wednesday | Room S5

SP036 New developments in risk governance: exploring risk attitudes and preferences for climate adaptation
16:15 Wednesday | Room S9

SP037 Standards on climate change adaptation: a new opportunity for businesses and services
16:15 Wednesday | Room S13

SP040 Connecting the dots: Challenges and opportunities of place-based adaptation from a regional perspective in the UK and Ireland
09:00 Thursday | Room S9

SP047 How to make CCA partnerships work? Adaptive governance reflections on the CCA cross-border and cross-authority partnership 'EU LIFE C2C CC'
11:15 Thursday | Room S11

SS005 Challenges, roles and responsibilities in climate risk governance
11:15 Tuesday | Room S13

SS012 Recognising and engaging citizens for more equitable and effective adaptation
16:15 Tuesday | PA

SS013 Mainstreaming, adaptation policy and governance
16:15 Tuesday | Room S2

SS021 Climate adaptation planning and the role of standards at the local and urban scale
11:15 Wednesday | Room S11

SS036 Experiences and lessons in multilevel governance of adaptation and risk management
09:00 Thursday | Room S1

SS044 Challenging traditional boundaries in adaptation and disaster risk reduction
11:15 Thursday | Room S2

Tool-shed session

TS002 Open Forums for the understanding of mindsets facing climate change and social vulnerability to adaptation measures
11:45–13:00 Tuesday | Room S15

5. Global climate challenges

What are the roles of climate change adaptation and disaster risk reduction in facing this century's societal challenges? What are the solutions to improve the coherence and coordination between climate change adaptation / disaster risk reduction / Sustainable Development Goals? What are the implications of not adapting? What are the consequences of exceeding 2°C and what can be done?

SP001 Tipping points in a 2°C world: risks and adaptation options
11:15 Tuesday | Room PA



-
- SP009** Loss and Damage from climate change: science, practice and policy propositions for tackling adaptation limits
14:00 Tuesday | Room S5
-
- SP016** Climate change impacts and risks at global warming of 1.5°C to 4°C: latest research findings
16:15 Tuesday | Room S6
-
- SP022** The water-energy-land nexus under climate change: from adaptation and mitigation case studies to services, products and implementation challenges.
11:15 Wednesday | Room S8
-
- SP042** Bridging the health adaptation gap: insights from UNEP's Adaptation Gap Report 2018
11:15 Thursday | PA
-
- SS031** Adapting to high-end and dangerous climate change
16:15 Wednesday | Room S6
-
- SS039** Climate change adaptation and sustainable development
09:00 Thursday | Room S7
-



6. Climate risk management and resilience

What are the best practices for the implementation of adaptation and risk reduction measures in different sectors and at cross-sectoral? What good examples exist on the implementation of integrated approaches in dealing with climate-induced hazards and disasters? What can we learn from the implementation of specific adaptation case-studies? What are current and needed innovative solutions to increase climate resilience in cities?

-
- SP010** Nature based solutions – governance, business models and financial mechanisms for climate change adaptation and DRR
14:00 Tuesday | Room S6
-
- SP017** Infrastructure adaptation: preparing the energy sector for a changing climate
11:15 Wednesday | GA
-
- SP030** Understanding disaster and climate change resilience to enhance resilience decision-making across scales-insights from the Flood Resilience Alliance
14:00 Wednesday | Room S6
-
- SP032** Extreme wildfire events: addressing the challenges faced by national governance and management systems across Europe
16:15 Wednesday | PA
-
- SP045** The insurance value of nature – ecosystem-based solutions to increase the resilience against climate change and natural disasters
11:15 Thursday | Room S7
-

SS004 Financing climate change adaptation and post disaster reconstruction
11:15 Tuesday | Room S11

SS014 Climate adaptation and resilience options across risks and sectors
16:15 Tuesday | Room S7

SS027 Environmental, social and economic benefits of Nature Based Solutions
14:00 Wednesday | Room S11

SS037 Preparedness and assessment approaches for increasing climate related risks
09:00 Thursday | Room S2

SS038 Assessment methods and approaches for climate vulnerability and resilience
09:00 Thursday | Room S6

SS045 Assessing adaptive capacity and building climate resilience
11:15 Thursday | Room S6

Tool-shed sessions

TS006 Subsidence in urban areas measured by InSAR (Sentinel1) related to flooding
15:00–15:15 Tuesday | Room S15

TS007 RESCCUE RAF App – climate change Resilience Assessment Framework tool for urban areas
15:15–15:45 Tuesday | Room S15

TS009 XDI Globe – Intelligence on your assets vulnerability to climate change impacts. Multiple assets, multiple locations. Sophisticated analysis, easy interface
16:30–17:45 Tuesday | Room S15

TS010 Exploring your city's risk interdependencies with the Risk Systemicity Questionnaire
11:15–12:25 Wednesday | Room S15

TS013 HAZUR Resilient Systems, a holistic approach to face climate change impacts
13:00–14:00 Wednesday | Room S15

TS014 Engage YOUTH in climate change adaptation
14:00–14:45 Wednesday | Room S15

TS018 Improving resilience through advanced cybertechnologies
16:15–17:15 Wednesday | Room S15

TS025 The Clarity Climate Services Information System – a screening tool for urban areas and infrastructure projects
13:30–14:00 Thursday | Room S15



PELA CULTURA DO ESPÍRITO
O DOMÍNIO DA FORÇA

Tuesday 28 May

Europe is at risk – adapting to extremes

Climate change is considered by many to be the challenge of the 21st century. The urgency and severity of this challenge call for integrated ways of looking at responses to reduce the risks associated with environmental and social stressors, and ensure a secure future for humans and ecosystems. A cooperative approach allows us to improve learning and knowledge exchange in order to deliver optimal solutions. This is particularly important in relation to the goals and targets of the three major international agreements: Paris, Sendai Framework for DRR and the Sustainable Development Goals.

Speakers

João Pedro Matos Fernandes

Prior to becoming Minister of the Environment, João Pedro Matos Fernandes was President of the Governing Board of water management company Águas do Porto, EM. His work has involved senior roles at a number of ports in Portugal and Mozambique. As administrator of Quatenaire Portugal, he coordinated several projects focused on urban and organisational strategy, spatial planning and environmental issues. João Pedro is also a visiting professor at the Universities of Oporto, Lisbon and Naples.

Fernando Medina

Fernando Medina has been the Mayor of Lisbon since 2015, focusing on a shift from a car to a people-centric approach, and investing in public transportation and affordable housing. He is also the president of Lisbon Metropolitan Area. Fernando was an advisor to the Portuguese Investment Agency and the Institute of Innovation and Training, and a Member of the Ministry of Education's Working Group for the Portuguese Presidency. He was an advisor on Science, Technology and Education before holding his first political appointments as Secretary of State for Employment and Vocational Training, and Secretary of State for Industry and Development.

Opening plenary

09:00–10:45

Grande Auditório

Live performance:

Tone Bjordam and Marten Scheffer – Scenarios

Exhibition opening:

Art for change – students from Antonio Arroio Art School, Lisbon



Portugal's Minister of the Environment and Energy Transition



Mayor of Lisbon

**European
Commissioner for
Humanitarian Aid and
Crisis Management,
European Commission**



Christos Stylianides

Christos Stylianides has been with the European Commission since 2014. He has been a Member of the European Parliament and has twice been appointed Government Spokesperson of the Republic of Cyprus where he was responsible for the management of the Government's communication strategy, and was the head of the Government's centralised Press and Information Office. Christos has served as a Member of the Cyprus House of Representatives, during which time he was as Vice-Chair of the Committee on Foreign and European Affairs, and a member of the Committee on European Affairs, the Committee of Internal Affairs, and the Committee of Employment and Social Affairs. He has been a member of the OSCE Parliamentary Assembly and was elected Member of its Bureau in 2012.

**Head of the Climate
Service Center
Germany (GERICS)**



Daniela Jacob

Climate scientist Prof. Dr. Daniela Jacob is Head of GERICS, a scientific organisational entity of Helmholtz-Zentrum Geesthacht, and visiting professor at Leuphana University, Faculty of Sustainability. She holds a PhD in meteorology, was Lead Author of the 5th Assessment Report of the Intergovernmental Panel of Climate Change (IPCC) and Coordinating Lead Author for the IPCC Special Report Global Warming of 1.5°C. Her research interests focus on regional climate modelling, the hydrological cycle, and adaptation to climate change.

**Director of
International,
Mainstreaming and
Policy Coordination,
Directorate-General
for Climate Action (DG
CLIMA), European
Commission**



Yvon Slingenberg

Yvon Slingenberg is responsible for International climate negotiations and mainstreaming of climate issues in EU policies. She has been Senior Advisor in the Cabinet for Climate Action and Energy, in charge of issues related to the EU Emissions Trading System (EU ETS), Effort Sharing and land-use, energy efficiency and renewable energy sources. Yvon was Head of Unit in the Directorate General for Climate Action of the European Commission, and was previously closely involved in the negotiations on the 2020 climate & energy package. She has also led the chemicals policy unit and negotiated the new chemicals legislation (REACH), worked in the Cabinet on environment and climate issues, been part of the European Commission's Task-force for the World Summit on Sustainable Development, and taken part in international climate negotiations.

SCIENCE PRACTICE SESSION

Tipping points in a 2°C world: risks and adaptation options

Manuel Carmona Yebra (Belgium) 1; Liviu Stirbat (Belgium) 1

1 – Directorate-General for Climate Action – European Commission

The 2018 article on Trajectories of the Earth System in the Anthropocene (Steffen *et al* 2018), highlighted that certain tipping points could occur between 1°C and 3°C warming, e.g. Greenland ice sheet melting, ice-free Arctic summers, Alpine glaciers melting, West Antarctic ice sheet melting and the disappearance of coral reefs. The article investigated the possibility of a ‘point of no return’ beyond which global climate would enter a ‘hothouse’ scenario triggering dangerous and irreversible trends. In the face of such situation, it is also necessary to identify the opportunities, procedural conditions and required capacities for the emergence of ‘positive tipping points’ in social-ecological system able to divert human development from such catastrophic trajectories. For this purpose, new transformative science-policy approaches and solutions are needed – as conventional ones may not be sufficient. The proposed session would focus on the potential consequences and responses to tipping points being reached even under a 2°C world, the uncertainty in tipping point modelling and the possible risks to the European continent in particular. It would also explore possible adaptation options and limitations and seek to motivate new research to help narrow down the huge uncertainties associated with tipping point modelling.

Presenters

Manuel Carmona Yebra | Policy Officer – Adaptation to Climate Change, Directorate-General for Climate Action, European Commission.

Mrs Nacira Boulehouat | Head of Unit for Disaster Risk Reduction, European Voluntary Humanitarian Corps, Directorate-General for European Civil Protection and Humanitarian Aid Operations, European Commission.

Prof. Richard Betts | Chair in Climate Impacts at the University of Exeter and Head of Climate Impacts Research at the Met Office Hadley Centre (UK). Leader of the EU-financed HELIX (High-End Climate Impacts and Extremes) project.

Prof Tim Lenton | Director of the Global Systems Institute of the University of Exeter.

Mr Paul Watkiss | Stakeholder relations leader of EU-financed project COACCH.

Dr J. David Tàbara | Associate Senior researcher working on knowledge integration for sustainability at the Autonomous University of Barcelona (UAB) and at the Global Climate Forum.

Prof Dr Ricarda Winkelmann | Junior Professor of Climate System Analysis at the Potsdam Institute for Climate Impact Research (PIK).

START OF SESSION



SP001

11:15 Tuesday

Room PA

Keywords: tipping points, adaptation, DRR, high-end climate change, feedback loops

SP002



11:15 Tuesday

Room S1

Keywords: coastal adaptation, decision-making, place, people, science-policy-practice interface

SCIENCE PRACTICE SESSION

Science, policy, people, place and practice in developing coastal adaptation plans: a hands-on, place-based collaborative workshop.

Larissa Naylor (United Kingdom) 1; Bill Parker (United Kingdom) 2; Joeseeph Hagg (United Kingdom) 3; **Kellie Fisher** (United Kingdom) 4; James Fitton (United Kingdom) 5

1 – University of Glasgow, School of Geographical and Earth Sciences and NERC Coastal Climate Change Adaptation Knowledge Exchange Fellow; 2 – Chair, Local Government Association's Coastal Special Interest Group; 3 – Science & Skills Manager, Adaptation Scotland; 4 – FCRM Senior Advisor, Coastal Partnerships & Strategic Overview Team; 5 – Aalborg University

Combining both academic rigour and hands on experience this session seeks to build and share knowledge and develop practical confidence in a range of approaches to manage coastal social-ecological systems in a time where coasts are increasingly dynamic where the boundaries between land and sea are more fluid and increasingly need to be redrawn for communities to live with a changing coast. In this dynamic zone is where some of the effects of climate change are being keenly felt around the globe and where adaptation to climate change is increasingly urgent.

Storms such as Hurricane Sandy and Typhoon Mangkhut well-illustrate the challenges faced and a new United Kingdom Climate Change Adaptation Sub-Committee 2018 report on coastal erosion has stated that, 'Current approach to protecting England's coastal communities from flooding and erosion not fit for purpose as the climate changes (CCC, 2018. Managing the coast in a changing climate).

This interactive session where participants will first hear five, short (5 minute) scene-setting examples across the science-policy-practice (i.e. people and place) interface that show academic and practice-based evaluations of opportunities and barriers to delivery of an adaptive coastal zone. Real life examples from England and Scotland will then be used as a focus of an interactive workshop with participants, so that participants can share their experiences of working across the science-policy-practice (and community) interface to develop innovative solutions to barriers and find opportunities to develop/deliver adaptation actions with the communities and ecosystems direct impacted by a changing coast. The session will encourage dialogue between those working in this area to better support those who are directly affected, as well as improve communication and knowledge exchange between researchers, policymakers and practitioners.

A substantial part of the session will be used to discuss and distil a set of main messages around innovative solutions that encourage more proactive, coastal climate change adaptation.

Presentations

Hansom, Fitton, Rennie, Naylor | 1. Science – Building the scientific basis for coastal adaptation // Evidence to inform/underpin coastal adaptation planning

Dr. Larissa Naylor | University of Glasgow | 2. Policy

Dr Joe Hagg | Adaptation Scotland | 3. Community engagement to support adaptation planning

Bill Parker | Chair, Local Government Association's Coastal Special Interest Group | 4. People

Kellie Fisher | Flood and Coastal Risk Management Senior Advisor, Environment Agency, England | **Dr Larissa Naylor** | University of Glasgow | 5. Place

SCIENCE SESSION

Understanding climate trends and their implications for adaptation and risk management

Chair | Emma Gaitán Fernández | Climate Research Foundation, Spain

Report on recent studies that have dissembled climate time series (observed and projected) into their component parts to analyse regime shifts and other non-linear features, including analysis of trends, extremes and non-climate information that may be of importance for designing adaptation.

Complex System predictability beyond structural collapse and memory loss: unveiling dynamic mechanisms shaping unprecedented regimes, disruptive transitions and extremes

Rui A. P. Perdigão (Portugal) 1,2

1 – Climate Change Impacts, Adaptation and Modelling group (CCIAM), CE3C, Universidade de Lisboa; 2 – Meteoceanics Interdisciplinary Centre for Complex System Science

Regional and global warming is a two-speed process: implications for risk management

Roger Jones (Australia) 1; **Jim Ricketts** (Australia) 1

1 – Victoria University Melbourne



SS002

11:15 Tuesday

Room S2

Keywords: climate trends, communication, extreme events, observed climate, precipitation variability, regime shifts

OC007

OC008

OC009

Extreme temperatures changes from 1950 to 2018 in 5 Mediterranean cities: trend analysis from E-OBS time-series data

Ana Oliveira (Portugal) 1; António Saraiva Lopes (Portugal) 2; Samuel Niza (Portugal) 3

1 – MIT Portugal, Instituto Superior Técnico, Universidade de Lisboa; 2 – IGOT – Instituto de Geografia e Ordenamento do Território/Centro de Estudos Geográficos, Universidade de Lisboa; 3 – IN+, Instituto Superior Técnico, Universidade de Lisboa

OC010

Communication of future regional climate trends – what is needed to facilitate decision-making processes?

Lotta Andersson (Sweden) 1; Lars Bärring (Sweden) 1; Torben Koenigk (Sweden) 1; Grigory Nikulin (Sweden) 1; Gustav Strandberg (Sweden) 1; Shiyu Wang (Sweden) 1; Renate Wilcke (Sweden) 1

1 – SMHI

OC011

PIRAGUA – Climate Change Adaptation Strategies for the Pyrenees' Water Resources with an Impact on the Territory

David Haro-Monteagudo (Spain) 1; Santiago Beguería (Spain) 1; José Miguel Sánchez (France) 2; Iñaki Antigüedad (Spain) 3; Marc Pons (Andorra) 4; Jean-Phillippe Vidal (France) 5; Yvan Caballero (France) 6; Javier Lambán (Spain) 7; María Del Carmen Llasat (Spain) 8; Pere Quintana (Spain) 9

1 – Estación Experimental de Aula Dei – Consejo Superior de Investigaciones científicas (EEAD-CSIC); 2 – Centre National de la Recherche Scientifique (CNRS); 3 – Universidad del País Vasco/ Euskal Herriko Unibertsitatea (UPV/EHU); 4 – Observatori de la Sostenibilitat d'Andorra; 5 – Institut National de Recherche en Sciences et Technologies pour l'Environnement et l'Agriculture (IRSTEA); 6 – Bureau de Recherches Géologiques et Minières (BRGM); 7 – Instituto Geológico y Minero de España (IGME); 8 – Universitat de Barcelona; 9 – Observatori de l'Ebre

OC012

Assessing precipitation variability across scales: limitations and new perspectives for climate change adaptation

Isabel De Lima (Portugal) 1; Shaun Lovejoy (Canada) 2

1 – Civil Engineering Department, University of Coimbra, Portugal; 2 – Physics Department, McGill University, Montreal, Canada

SCIENCE PRACTICE SESSION

Unfolding the potential of climate services for climate change adaptation

Jaroslav Mysiak (Italy) 1; **Stefano Bagli** (Italy) 2; **Elisa Delpiazzi** (Italy) 1; **Ghislain Dubois** (France) 3; **Isadora Jimenez** (Spain) 4; **Adriaan Perrels** (Finland) 5; **Marta Bruno Soares** (United Kingdom) 6; **Alberto Troccoli** (United Kingdom) 7; **Giulio Zuccaro** (Italy) 8; **Filip Lefebvre** (Belgium) 9

1 – Euro-Mediterranean Centre on Climate Change and Ca' Foscari University Venice;
2 – GECOsistema srl; 3 – Tec Conseil; 4 – Barcelona Supercomputing Center; 5 – Finnish Meteorological Institute; 6 – University of Leeds; 7 – University of East Anglia; 8 – Università di Napoli Federico II; 9 – Vito

Climate variability and change pose sizeable economic, social and environmental risks. Climate services (CSs) catalyse economic and societal transformations that not only reduce these risks and/or improve societal resilience, but also unlock Europe's innovation potential, competitiveness and economic growth. Over the past several years, climate services have grown in numbers, quality and sophistication, stimulated not at least by the EU Research programmes (FP7 and H2020), Copernicus Climate Change Services (C3S), and the World Meteorological Organisation's Global Framework for Climate Services (GFCS). The European Union made sizeable investments in frontline systems enabling modern meteorological services as a contribution to the Europe 2020 strategy for smart, sustainable and inclusive growth.

As a part of European efforts to catalyse the potential of climate services for more efficient natural resource management and improved disaster risk management and resilience, the development of climate services has been promoted through H2020 Research programme. Climate services hold promise for better informed and evidence-based management of climate risks, i.e. better adaptation and disaster risk reduction. To live up to these expectations, climate services need to be based on thorough understanding of and respond to the needs and requirements of decision and policy makers who cope with and adapt to climate variability and change. The most successful climate services are those that have been co-designed and co-developed with the intended users, galvanising mutually beneficial learning. Business viability of climate services is boosted by making explicit the value or benefits drawn from their use. This is not an easy task and no single, one-size-fits-all methodology exists to reveal the value of the information embedded in climate services. In this session we will summarise the results and expected impacts of the frontline climate services developed in the context of more than ten H2020 funded research and innovation projects. It also sets out to summarise the insights gained and identify good practice examples for co-development and co-assessment of climate services, formulation of viable business and marketing strategies, and communication of uncertainty and risk.



SP004

11:15 Tuesday

Room S5

Keywords: climate services, risk assessment, co-assessment, co-development, business and market

Presentations

1. Climate services for climate-resilient water resource management and adaptation in winter tourism sectors

Dubois Ghislain (a), Fred Hattermann (b), Christiana Photiadou (c), María-José Polo (d), and Alberto Troccoli (e)

(a) Tec Conseil, (b) Potsdam Institute for Climate Impact Research, (c) Swedish Meteorological and Hydrological Institute, (d) University of Cordoba, Spain, (e) University of East Anglia.

2. Implementing European climate services for the energy sector: assessing the value they bring

Alberto Troccoli (a), Dubois Ghislain (b), Clare Goodess (a), Isadora Jimenez (c), María-José Polo (d), Athanasios Votsis (e)

(a) University of East Anglia, (b) TEC Conseil, (c) Barcelona Supercomputing Center, (d) University of Cordoba, (e) Finnish Meteorological Institute

3. Innovative climate services for agriculture and irrigation

Stefano Bagli (a), Alessandro Dell'Aquila (b), Christoph Gornott (c)

(a) GECOSistema srl, (b) Italian National Agency for New Technologies, Energy and Sustainable Economic Development, (c) Potsdam Institute for Climate Impact Research

4. Climate services for climate risk management and urban adaptation

Giulio Zuccaro (a), Mattia Leone (a), Jaroslav Mysiak (b), Filip Lefebvre (c), Athanasios Votsis (d), Reija Ruuhela (d) Christian Witt (e)

(a) Università di Napoli Federico II, (b) Euro-Mediterranean Centre on Climate Change and Ca' Foscari University, (c) Flemish Institute for Technological Research, (d) Finnish Meteorological Institute, (e) Charité – Universitätsmedizin Berlin

5. Participatory approaches to support the co-development of climate services in Europe: experiences and lessons across European sectors

Marta Bruno Soares (a), Elisa Calliari (b), Sebastien Bruyere (c), Clare Goodess (d), Denis Havlik (e), Tracy Irvine (f), Isadora Jimenez (g), Mattia Leone (h), Elena Mihailescu (a), Josep Maria Solé (i), Marta Terrado (g), Alberto Troccoli (d), Nele Veldeman (j)

(a) University of Leeds, (b) University College London and Euro-Mediterranean Centre on Climate Change, (c) TEC Conseil, (d) University of East Anglia, (e) Austrian Institute of Technology GmbH, (f) Oasis Hub Ltd, (g) Barcelona Supercomputing Center, (h) Università di Napoli Federico II, (i) Meteosim SL, (j) Vito – Vlaamse Instelling voor Technologisch Onderzoek n.v

6. Assessing the value created through deploying climate services

Elisa Delpiazzi (a), Francesco Bosello (a), Clare Goodess (b), Isadora Jimenez (c), Jaroslav Mysiak (a), Alberto Troccoli (b), Nele Veldeman (d), Ilaria Vigo (c)

(a) Euro-Mediterranean Centre on Climate Change and University Ca' Foscari, (b) University of East Anglia, and World Energy and Meteorology Council, (c) Barcelona Supercomputing Center, (d) Vito – Vlaamse Instelling voor Technologisch Onderzoek n.v.

7. Market development and business models for climate services

Adriaan Perrels (a), Francesca Larosa (b), Tracy Irvine (c), Jaroslav Mysiak (b)

(a) Finnish Meteorological Institute, (b) Euro-Mediterranean Centre on Climate Change and University Ca' Foscari, (c) Oasis Hub Ltd

Visualisation and communication of uncertainty and risk

Isadora Christel-Jiménez (a), Dubois Ghislain (b), Jaroslav Mysiak (c), Josep Maria Solé (d)

(a) Barcelona Supercomputing Center, (b) TEC Conseil, (c) Euro-Mediterranean Centre on Climate Change and University Ca' Foscari, (d) Meteosim SL

SCIENCE PRACTICE SESSION

How can we avoid coastal emergencies through better governance?

Camille Manning-Broome (United States of America) 1; James Butler (Australia) 3; Lisa Danielson (France) 2; Sandy Bisaro (Germany) 4

1 – Center for Planning Excellence; 2 – OECD; 3 – Commonwealth Scientific and Industrial Research Organisation; 4 – Global Climate Forum

Coastal regions are amongst the most vulnerable geographies in the world to the impacts of climate change, due to their inherent exposure to the combined effects of sea level rise, flooding and intense storm events. These impacts are already being experienced, with unprecedented costs to livelihoods and economies, and are likely to escalate in scale and unpredictability. How governance systems identify, prepare for and respond to these risks is critical. Around the world, different approaches are emerging to manage current crises, anticipate forthcoming emergencies, and cover the escalating financial costs from limited public purses. In some regions governments and the private sector have been reacting to recurring emergencies, while in others the slower onset of coastal impacts has allowed time for adequate preparation.



SP005

11:15 Tuesday

Room S6

Keywords: collaboration, emergency, coast, governance, sea level rise

This session explores governance approaches from both ends of the spectrum, and thus aims to answer the question: ‘how can governments and other stakeholders avoid falling into reactive coastal emergencies?’ In the Mississippi Delta of Louisiana, USA, subsidence and erosion rates are exacerbated by sea level rise and more intense hurricanes. Following Hurricanes Katrina and Rita in 2005, innovative governance emerged to adapt to emergencies, but has become entirely reactive as a consequence of federal and state politics and funding mechanisms, exacerbated by ongoing inundation of coastal communities. In the European nations of Germany, France and the UK, the onset of coastal emergencies has been slower, allowing governance mechanisms to be designed and trialled in a proactive, anticipatory mode, within different political contexts.

In this session we investigate governance models and experiences of their relative efficacy from the USA, Germany, France and the UK. We present two frameworks that are used to design governance processes, both reactive and anticipatory. From Louisiana, USA we present the Three Emergencies construct, which defines the different levels of emergency (i.e. real, conceptual and existential) and diagnoses governance approaches and responses. From Europe we introduce the OECD’s 2019 approach, which examines how countries approach sharing costs and responsibilities for coastal risk management, and how this encourages or hinders anticipatory risk-reduction behaviour by different actors. We present two case studies from Louisiana, and two from Europe, which illustrate the policy and political challenges faced by coastal regions, and the efficacy of the different approaches. In the discussion session we will invite participants, both policy and research, to reflect on the experiences and governance models, and consider their strengths and weaknesses.

Presenters

1. Camille Manning-Broome | Center for Planning Excellence, USA

2. James Butler | CSIRO, Australia

3. Sandy Bisaro | Global Climate Forum, Berlin, Germany

4. Lisa Danielson | Organisation for Economic Co-operation and Development, Paris, France

SCIENCE PRACTICE SESSION

Making socially just adaptation a reality – from concepts to policy and practice

Aleksandra Kazmierczak (Denmark) 1; **Katharine Knox** (United Kingdom) 2; **Diana Reckien** (Netherlands) 3; **Kit England** (United Kingdom) 4

1 – European Environment Agency; 2 – Katharine Knox Consulting; 3 – University of Twente; 4 – Climate Ready Clyde

Climate change is recognised as a socio-economic as well as environmental problem, due to its wide-ranging impacts. However, the social justice implications of climate change impacts, adaptation planning and implementation have only recently begun to be considered. They include:

- Differential social vulnerability of nations and communities to climate impacts;
- The fairness and equity of adaptation responses to climate change in practice;
- The adequacy of climate adaptation and wider socio-economic policies in addressing climate injustice when setting the framework for action.

Climate impacts are not evenly distributed across European society. More vulnerable groups, including people on the lowest incomes, who generally contribute least to greenhouse gas emissions, tend to be among the most affected. The elderly and those in poor health can be worst affected by heatwaves. Those on low incomes are less likely to have flood insurance and have fewer resources to deal with the impacts of flooding. How do we ensure recognition of social vulnerability in policy and practice, and that the uneven impacts of climate change are addressed to ensure fair, just adaptation?

In practice, issues of procedural and distributional justice associated with implementing adaptation options are only starting to emerge. Purposeful socially-just adaptation actions are rare. At local level, adaptation is usually a responsibility of local authority environmental departments, often disconnected from disaster risk reduction. Collaboration with other departments, including health and social care, and other sectors, from emergency services to the voluntary and community sector, is needed. How can practitioners address social justice in adaptation planning and implementation?

In EU and national policy, the need to protect vulnerable people is recognised. However, operationalising this policy is a different matter. How do recent European policy developments, e.g. the EU Adaptation Strategy Evaluation and the Urban Agenda for the EU address social justice in adaptation? How are vulnerable groups treated in the National Adaptation Strategies of EU countries? How do we support greater inclusion of social justice in adaptation policy frameworks across all governance levels?



SP006

11:15 Tuesday

Room S7

Keywords: social justice, social vulnerability, adaptation, policy, governance

This session aims to provide varied perspectives covering policy, research and practice on social justice in climate change adaptation responses. Discussion will consider:

- How can we make social justice a reality in climate change adaptation?
- What are the drivers and barriers to achieving this in practice?
- How can we better work together across research, policy and practice to address it?

Presenters

1. **Katharine Knox** (chair) | Katharine Knox Consulting

2. **Aleksandra Kazmierczak** | European Environment Agency

3. **Diana Reckien** | University of Twente

4. **Kit England** | Climate Ready Clyde

SCIENCE SESSION



SS001

11:15 Tuesday

Room S8

Keywords: climate data, ensembles, extreme events, RCMs, statistical downscaling, urban flooding

Downscaling to characterise local challenges for climate change adaptation

Chair | João Pedro Nunes | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Showcase of recent research on climate data downscaling, and provision of regional and local climate information of interest and importance for designing adaptation solutions to cope with a changing climate, at various scales.

OC001

Impact of climate change in the marine environment of the Iberian Peninsula

Mariana Bernardino (Portugal) 1; **Claudia Lucas** (Portugal) 1; **Marta Gonçalves** (Portugal) 1; **Carlos Guedes Soares** (Portugal) 1

1 – CENTEC – Center for Marine Technology and Ocean Engineering, IST, Lisbon, Portugal

OC002

The Norwegian Climate Data Store

Hege Hisdal (Norway) 1; **Wai Kwok Wong** (Norway) 1

1 – the Norwegian Water Resources and energy Directorate (NVE)

OC003

Decadal-to-climate change in the RESCCUE project: Extreme scenarios from downscaled CMIP5 multi-model ensemble

Emma Gaitán (Spain) 1; **César Paradinas** (Spain) 1; **Javier Pórtolles** (Spain) 1; **Darío Redolat** (Spain) 1; **Robert Monjo** (Spain) 1; **Carlos Prado** (Spain) 1; **Luis Torres** (Spain) 1; **Jaime Ribalaygua** (Spain) 1

1 – Climate Research Foundation

What can we say about future climate in Europe at different global warming levels based on regional climate model scenarios?

Erik Kjellström (Sweden) 1; Grigory Nikulin (Sweden) 1; Gustav Strandberg (Sweden) 1; Helena Martins (Sweden) 1

1 – Swedish Meteorological and Hydrological Institute

Storage – Discharge – Frequency curves to assess required sponge capacity; flood resilient urban planning and design in Taoyuan

Frans Van De Ven (Netherlands) 1; Toine Vergroesen (Netherlands) 2; Wenxing Zhang (Netherlands) 3; Hsuan-Yu Lin (Taiwan) 4; Wen-Shiang Chung (Taiwan) 4; Chen-Wuing Liu (Taiwan) 5; Jin-Jing Lee (Taiwan) 5; Yueh-Tan Lee (Taiwan) 5

1 – Deltares / TU Delft; 2 – Deltares; 3 – TU Delft / Deltares; 4 – Sinotech Engineering Consultants, LTD; 5 – Taoyuan Government, Department of Water Resources

A simulation framework for updating IDF curves under the potential effects of climate changes in Naples (Southern Italy)

Roberta Padulano (Italy) 1; Guido Rianna (Italy) 1; Alfredo Reder (Italy) 1

1 – CMCC Foundation Euromediterranean Center on Climate Change

SCIENCE PRACTICE SESSION

Knowledge integration as science based–decision making for adaptation strategies

Mária Máñez Costa (Germany) 1; Van Der Keur Peter (Denmark) 2; Celliers Louis (Germany) 1; Eulalia Gomez (Germany) 1

1 – Climate Service Center Germany – Helmholtz Zentrum Geesthacht; 2 – GEUS

Adaptation strategies to reduce the negative effects of climate change are needed at every institutional level. The development of these strategies is a complex process involving variety of actors from scientist and policy makers to civil society members. It is important to understand how different knowledge is created and distributed among the different stakeholders and governmental levels to effectively implement adaptation across socioeconomic sectors. Despite the fact that an increasing amount of scientific, institutional and traditional knowledge is being produced, the integration of transdisciplinary knowledge is still in its infancy. Knowledge integration represents an opportunity to enhance decision making and facilitate the implementation of climate change adaptation measures. Integrating transdisciplinary knowledge increases the usability of climate information.

OC004

OC005

OC006



SP003

11:15 Tuesday

Room S9

Keywords: knowledge integration, participatory modelling, drought and flood management, urban development

There are three aspects of knowledge integration that need to be considered. Firstly, how to integrate existing scientific knowledge into science, secondly how to integrate societal knowledge into science, and thirdly how to integrate knowledge from different disciplines within and into each other.

This session is oriented to explore different approaches and methods that contribute to overcome the barriers and limitations in scientific and local knowledge integration. Approaches such as stakeholder's participation, participatory modelling or policy learning techniques will be explored. The aim of the session is to analyse the advantages and disadvantages of different methods and approaches as well as to examine novel projects and cutting-edge science in the field of knowledge integration and climate change adaptation strategies. The session is designed to be participative to enhance the exchange of information between scientist, decision-makers and planners in the field of climate change adaptation and risk reduction.

Presentations

Peter van der Keur

Louis Celliers, María Máñez

Eulalia Gómez | Assessing the long-term resilience of Nature Based Solutions in the Medina aquifer to adapt to droughts

María Máñez Costa and Daniela Jacob | Learning from the south on drought management: Conditions for successful policy learning

SCIENCE SESSION

SS003



11:15 Tuesday

Room S10

Keywords: collaborative modelling, governance, managed retreat, multi-model-ensembles, risk management, water management

Co-production of sector-based tools and adaptation strategies

Chair | Torsten Grothmann | University of Oldenburg

Account of participatory research focused on the development of transdisciplinary methodologies and the co-production of tools to assess long-term climate impacts and vulnerabilities in the water, agriculture, nature-based tourism and coastal management sectors.

OC013

Assessing long-term resilience of hydropower production in Switzerland: A transdisciplinary research approach

Luise J Fischer (Switzerland) 1,2; Heini Wernli (Switzerland) 1; David N. Bresch (Switzerland) 2

1 – Institute for Atmospheric and Climate Science, ETH Zürich; 2 – Institute for Environmental Decisions, ETH Zürich

Co-constructing a tool for assessing the risk of climate change impacts on water: integration of multi-model ensemble and expert knowledge

Laura Woltersdorf (Germany) 1; Fabian Kneier (Germany) 1; Carina Zang (Germany) 2

1 – Goethe University Frankfurt; 2 – International Centre for Water Resources and Global Change (UNESCO)

OC014

Assessing local climate adaptation and science information needs coincident with hydroclimate variability in a snow-fed river system

Kelley Sterle (United States of America) 1; Benjamin Hatchett (United States of America) 2; Loretta Singletary (United States of America) 1; Greg Pohll (United States of America) 2; Wesley Kitlsten (United States of America) 3

1 – University of Nevada, Reno; 2 – Desert Research Institute; 3 – U.S. Geological Survey

OC015

The CLIMALERT project: Climate alert smart system for sustainable water and agriculture

Cláudia Pascoal (Portugal) 1; Giorgio Pace (Portugal) 1; Fernanda Cássio (Portugal) 1; Sérgio Lopes (Portugal) 1; Luís Gonçalves (Portugal) 1; Isabel Trigo (Portugal) 2; Célia Gouveia (Portugal) 2; Vicenç Acuña (Spain) 3; Sergi Sabater (Spain) 3; Andreas Marx (Germany) 4; Reimund Schwarz (Germany) 4; Christian Kuhlicke (Germany) 4

1 – University of Minho; 2 – Portuguese Institute for Sea and Atmosphere – IPMA ; 3 – Catalan Institute for Water Research -ICRA; 4 – Helmholtz Centre for Environmental Research – UFZ Leipzig

OC016

Co-development of strategies for sustainable adaptation in the nature-based tourism sector in Norway

Eivind Brendehaug (Norway) 1; Stephanie Mayer (Norway) 2

1 – Western Norway Research Institute; 2 – NORCE Norwegian Research Centre, Bjerknes Centre for Climate Research, Norwegian Centre for Climate Services

OC017

Time to make room for water and start planning for retreat?

Gunnel Göransson (Sweden) 1; David Bendz (Sweden) 1; Per Danielsson (Sweden) 1; Jim Hedfors (Sweden) 1; Arianit Kurti (Sweden) 2; Jonas Löwgren (Sweden) 3; Signild Nerheim (Sweden) 4; Lisa Van Well (Sweden) 1

1 – Swedish Geotechnical Institute; 2 – RISE Research Institutes of Sweden; 3 – Linköping University; 4 – Swedish Meteorological and Hydrological Institute

OC018

SS004



11:15 Tuesday

Room S11

Keywords: adaptation finance, bonds, climate services, floods, insurance, risk transfer

SCIENCE SESSION

Financing climate change adaptation and post disaster reconstruction

Chair | Oleksandr Sushchenko | Helmholtz Centre For Environmental Research – UFZ

Collection of experiences targeting innovative finance and asset management tools for building resilience in climate change adaptation and post-disaster recovery and reconstruction operations, for both individuals and business.

OC019

Distributional effects of floods and flood policies: Microeconomic evidence from Germany

Miguel Tovar Reanos (Germany) 1; **Daniel Osberghaus** (Germany) 1

1 – Centre for European Economic Research (ZEW)

OC020

Promoting flood risk reduction: The role of insurance in Germany and England

Swenja Surminski (United Kingdom) 1; Annegret Thieken (Germany) 2

1 – London School of Economics; 2 – Universität Potsdam

OC021

Increasing Flood Resilience Through Innovative Finance: Utility of Bonds?

Aparna Shrivastava (United Kingdom) 1; Zinta Zommers (United Kingdom) 1

1 – Mercy Corps

OC022

Whole-of-life value of urban Green Infrastructure: state-of-the art

Linda Romanovska (Australia) 1

1 – University of New South Wales, Sydney, Australia

OC023

Adaptation Finance Ecosystem in The Netherlands

Bituen Hidalgo (Netherlands) 1

1 – Hidalgo Consultancy

OC024

Discourse analysis on index-based insurance for climate change adaptation and private sector: Lessons from international initiatives operating in sub-Saharan Africa

Nella Canales (Sweden) 1; Adis Dzebo (Sweden) 2

1 – Stockholm Environment Institute; 2 – Stockholm Environment Institute

SCIENCE SESSION

Challenges, roles and responsibilities in climate risk governance

Chair | Robbert Biesbroek | Wageningen University & Research

Report on recent studies that analyse multi-level climate risk governance mechanisms, drivers and challenges, including those associated with the roles and responsibilities of multiple types of sectoral actors, across several European countries and regions.

Strengths and weaknesses in climate change adaptation governance – a comparison across six European regions

Henk-Jan Van Alphen (Netherlands) 1; **Eduard Interwies** (Germany) 2; Stefan Görlitz (Germany) 2

1 – KWR; 2 – Intersus

Collaborative governance in Dutch flood risk management, an historical analysis

Emma Avoyan (Netherlands) 1

1 – Emma Avoyan

Am I responsible? Finding a shared optimum for flood risk management in between public and private actors

Magdalena Rauter (Austria) 1; Sven Fuchs (Austria) 1; Thomas Thaler (Austria) 1; Maria Kaufmann (Netherlands) 2

1 – University of Natural Resources and Life Sciences, Vienna (BOKU); 2 – Radboud University, Nijmegen

Enhancing the governance of local climate change adaptation: success factors and recommendations to overcome implementation barriers in small Austrian municipalities

Wolfgang Lexer (Austria) 1; Therese Stickler (Austria) 1; **Daniel Buschmann** (Austria) 1; Reinhard Steurer (Austria) 2; Judith Feichtinger (Austria) 3

1 – Environment Agency Austria; 2 – University of Natural Resources and Life Sciences Vienna; 3 – Centre for Social Innovation (ZSI), Vienna



SS005

11:15 Tuesday

Room S13

Keywords: climate services, collaborative governance, flood risk management, polycentricity, responsibility sharing, strategies

OC025

OC026

OC027

OC028

OC029

Exploring the critical mechanisms to integrate flood risk management and sector specific objectives in England

Lydia Cumiskey (United Kingdom) 1; Sally Priest (United Kingdom) 1; Frans Klijn (Netherlands) 2

1 – Flood Hazard Research Centre Middlesex University; 2 – Deltares

OC030

Climate services supporting DRR and CAA under a post-2015 agenda

Roger Street (United Kingdom) 1; Carlo Buontempo (United Kingdom) 2; Jaroslav Mysiak (Italy) 3; Eleni Karali (Greece) 4; Mário Pulquério (Portugal) 5; Virginia Murray (United Kingdom) 6; Rob Swart (Netherlands) 7

1 – Environmental Change Institute, University of Oxford; 2 – Copernicus Climate Change Service, ECMWF; 3 – Euro-Mediterranean Center on Climate Change and Ca' Foscari University of Venice; 4 – Directorate of Natural Environment Management and Biodiversity, Department of Protected Areas; 5 – CE3C – Centre for Ecology, Evolution and Environmental Changes Faculdade de Ciências, Universidade de Lisboa; 6 – Extreme Events and Health Protection, Public Health England; 7 – Wageningen Environmental Research

SCIENCE SESSION

SS006



11:15 Tuesday

Room S16

Keywords: adaptation planning, built environment, climate services, knowledge brokering, tools, visualisation

Approaches, decision-support tools and data needs for adaptation at the urban and regional scale

Chair | André Oliveira | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Presentation of research and application studies bringing together experiences on collaboration, knowledge brokering, and the development and use of tools and services to support adaptation decision-making at the urban and regional scale, including dealing with various data and knowledge needs.

OC031

Guidelines designed for win-win collaboration between researchers and non-researchers stakeholders

Adriana Bruggeman (Cyprus) 1; **Maria João Freitas** (Portugal) 2,3; Tone Merete Muthanna (Norway) 4

1 – The Cyprus Institute; 2 – LNEC; 3 – Collaborative Consulting; 4 – Norwegian University of Science and Technology

The climate services chain: From data to policy and action

Eva Boon (Netherlands) 1; Hasse Goosen (Netherlands) 1; Kim Van Nieuwaal (Netherlands) 1; Marit Heinen (Netherlands) 1

1 – Climate Adaptation Services (CAS)

Convenient decision support tool for local government: framework and case study in the water management sector

Chae Yeon Park (Korea, Republic of) 1; Dong Kun Lee (Korea, Republic of) 1; Jiyeon Kim (Korea, Republic of) 1

1 – Seoul National University

Exploring the utility of Bayesian belief networks for climate adaptation decision making: Insights from Glasgow, UK

Eleanor Murtagh (United Kingdom) 1

1 – University of Strathclyde

Guiding municipalities through the jungle of climate change adaptation

Anna Jonsson (Sweden) 1; Caroline Weidbo (Sweden) 1; Magnus Rödin (Sweden) 1; Jacob Von Oelreich (Sweden) 1; Aino Krungård (Sweden) 1

1 – Swedish Meteorological and Hydrological Institute, SMHI

Estimating climate change resilience through high-resolution ecosystem service mapping in Manchester, UK

Fraser Baker (United Kingdom) 1

1 – Manchester Metropolitan University

TOOL-SHED SESSION

An IMPREXive serious game

Arnal Louise (Belgium) 1; **Eggen Bernd** (United Kingdom) 3; **Gallo Florian** (United Kingdom) 3; **Hananel Cedric** (Belgium) 2; **Katrien Witpas** (Belgium) 2

1 – ECMWF; 2 – ARCTIK Communication for Sustainability; 3 – MET OFFICE UK

Serious games are a powerful tool to engage the audience and communicate complex topics. As part of the EU Horizon 2020 project IMPREX, we have developed a serious game to communicate the water-related challenge of living in a changing climate.

OC032

OC033

OC034

OC035

OC036



TS001

11:15 Tuesday

Room S15

Keywords: serious game, communication, hydrological extreme, flood, forecasting

Beyond the gaming aspect, the IMPREXive serious game is also a communication tool to engage stakeholders and climate services users, and convey the IMPREX key messages, beyond the project's lifetime.

In this game, the player is the protagonist of an interactive story, driven by challenges, exploration, and problem-solving. Acting as the head of a flood forecasting institute, the player's role is to manage the actions of two teams (the forecasters and the decision-makers) and make sequential decisions based on a variety of information (e.g. hydrological forecasts, situation on the ground, etc.). The aim of the game is to take decisions that will ultimately lead to positive results on the ground (i.e. protecting a fictitious town from flooding).

This game was created to: 1) highlight the value of hydrological forecasts for decision-making in the water sector, 2) underline the complexities behind forecast-based decision-making at the local scale, and 3) provide a doorway for players wanting to know more about IMPREX.

Web address: <http://arctik.tech/imprex/index.php#>

TOOL-SHED SESSION

TS002



11:45 Tuesday

Room S15

Keywords: climate change consciousness, social vulnerability, social transformation, diversity, climate change

Open Forums for the understanding of mindsets facing climate change and social vulnerability to adaptation measures

Jorge Sánchez-Cruzado (Spain) 1; **Conchi Piñeiro** (Spain) 1

1 – Altekio, S.Coop.Mad

Open Forum is a methodology for creating interactive and multi-agent group conversations to discuss around a topic, where different viewpoints are expressed to explore the diversity of experiences affecting people, groups and communities. It offers an opportunity to deepen understanding of challenges and barriers for social transformation in different levels.

This methodology was developed in the Deep Democracy and Process Work fields: "Process Oriented Open Forum lie between business meetings and large, open, emotional meetings. The Open Forum is more dramatic than standard business meetings, yet more linear than the ongoing world work group processes." (The Deep Democracy Of Open Forums, p.24, Arnold Mindell).

The setting consists of a group session up to 100 participants facilitated by 2 to 4 experts in working with diversity, conflict transformation and emotional facilitation.

Open Forums can contribute to unfold consciousness around climate change in public, collective or group settings. The process commences with invited speakers who speak for a few minutes on a designated topic and participants are then invited to contribute their thoughts, feelings and experiences related to the issues being explored (Process Work Ireland). As a result, a broad set of different perspectives and viewpoints are brought to the field, helping to understand what are the key facts of social-economic transformation towards climate change adaptation. It also helps to understand social vulnerability to adaptation measures and which facts need to be considered before applying certain measures, considering a just transition.

Altekio has run a number of Open Forums around the topic of climate change, addressing the questions: How do you relate with climate change? How do we live climate change? How does climate change affect me? How do we collaborate in a climate change scenario?

TOOL-SHED SESSION

Understanding Europe's risk landscape with the European Climate Risk Typology

Vasileios Latinos (Greece) 1

1 – ICLEI Local Governments for Sustainability

This session will explore a digital tool supporting the phase of risk and vulnerability assessment, as part of an integrated approach to planning and implementing an adaptation strategy.

The European Climate Risk Typology is an interactive online map that helps to visualise, describe, compare and analyse climate risk in European cities and regions. It was produced as part of the RESIN project (2015-2018) by the University of Manchester, in collaboration with other research partners and the cities of Paris, Bilbao, Bratislava and Greater Manchester.

After a brief introduction to risk assessment as part of an integrated approach to adaptation planning, we will present this online tool and demonstrate its functionality and capabilities in a short exercise. Participants will use the classification and indicators provided by the typology to assess the climate risk characteristics of a number of example regions, identifying possible links between them. This will lead into a discussion how this tool could support risk and vulnerability assessment as part of developing an adaptation plan.

Web address: www.resin-cities.eu/resources/risk-typology/



TS003

13:00 Tuesday

Room S15

Keywords: decision support tools, integrated planning and implementation, risk assessment, vulnerability

START OF NEXT SESSION

SP007



14:00 Tuesday

Room PA

Keywords: knowledge management, visualisation, taxonomy, linked data, artificial intelligence

SCIENCE PRACTICE SESSION

Advancing 'search & discovery' for climate action: exploring the potential of linked open data and artificial intelligence approaches

Julia Barrott (United Kingdom) 1; Martin Kaltenböck (Austria) 2; Denise Recheis (Austria) 3; Sukaina Bharwani (United Kingdom) 1; Tiago Capela Lourenço (Portugal) 4

1 – Stockholm Environment Institute; 2 – Semantic Web Company; 3 – REEEP; 4 – Climate Change Impacts, Adaptation and Modelling group (CCIAM-cE3c), University of Lisbon

The recognition of and need to address the impacts and opportunities of climate change has seen a huge increase in the generation of data, information and knowledge relevant for climate change adaptation and disaster risk reduction in recent years. And as the impacts on sectors and business becomes clearer, the number and diversity of actors and organizations actively engaging with and producing relevant knowledge in these fields is growing.

This presents two key problems for finding relevant content: firstly, relevant knowledge and related actors are scattered across numerous personal, project, organizational, network and platform websites, making it difficult to know where to go to find the information needed; and secondly, the abundance of knowledge and data and the diversity of language with which it is described (owing to the different producers) makes it difficult to filter content to find what is relevant.

This session will bring together data, information and knowledge producers, users and managers in climate change adaptation and disaster risk reduction to discuss ways forward to address these issues as a community. This discussion will be guided by presentations on understanding user needs and the digital infrastructure that can meet the needs of knowledge managers to address these issues, with a particular focus on the potential of linked open data, taxonomies, and semantic and Artificial Intelligence technologies. Open-access tools – the Climate Tagger and the PLACARD Connectivity Hub – will also be presented that showcase how the broad adoption of these technologies can maximize the accessibility, discoverability and uptake of data and knowledge in a way that helps drive users back to websites hosting this content.

Climate Tagger is an open-source taxonomy-based tool that can be used to facilitate automated analyses of textual information by tagging such content consistently and reliably. Returned tags are based on a purposely-developed taxonomy, currently describing the areas of renewable energy, energy efficiency and climate mitigation. The Connectivity Hub can extend the Climate Tagger to include taxonomies for CCA and DRR, with a vision that increased use of standardized language to describe data by knowledge managers will improve search and discoverability of relevant content.

This session is primarily aimed at the information and knowledge management community, including: information, data and knowledge professionals; owners and developers of web-based platforms (urban, national, regional, global) and knowledge/data portals; and their funders. It will be of particular interest to those exploring how digital innovation (such as Linked Open Data or artificial intelligence approaches) can enhance communication, collaboration and decision-making support for climate adaptation and disaster risk reduction, and to those exploring how advances in artificial intelligence might be leveraged to support climate action. Proposed format for the session Four short presentations will introduce the audience to the subject matter. These will be followed by a workshop that will allow attendees to: delve deeper into these topics with relevant experts; provide input into the further development of these approaches for the wider benefit of the CCA and DRR communities; express interest in and explore ways to continue a collaboration amongst the information and knowledge management community; and discuss ways forward for this community to better support climate action.

The presentations will introduce the audience to:

- the idea of Linked Open Data and how it could benefit the CCA and DRR communities by supporting enhanced learning, communication, and collaboration;
- the Climate Tagger tool, including the motivation behind it and how it facilitates automated tagging of textual information for enhanced information and knowledge management;
- the PLACARD project's work on the development of taxonomies for CCA and DRR to support better communication and information and knowledge management;
- the potential of semantic technologies (including artificial intelligence) for supporting and expediting progress in CCA and DRR; and
- the PLACARD Connectivity Hub 'search and discovery' tool: what it is and how it works to benefit stakeholders and the owners of knowledge platforms and data portals.

Presenters

1. **Martin Kaltenböck** | Semantic Web Company

2. **Julia Barrott** | Stockholm Environment Institute: Taxonomy for DRR & CCA

3. **Denise Recheis** | REEEP: The Climate Tagger

4. **Sukaina Bharwani** | Stockholm Environment Institute: PLACARD Connectivity Hub

SP008



14:00 Tuesday

Room S1

Keywords: collaboration, transdisciplinarity, research impact, global development, coproduction

SCIENCE-PRACTICE-SESSION

Learning in and from transdisciplinary practice: Navigating the research-to-practice interface across scales

Amir Bazaz (India) 1; Georgina Cundill-Kemp (Canada) 2; Margot Curl (United Kingdom) 3; **Jesse Demaria-Kinney** (Switzerland) 4; Blane Harvey (Canada) 5; Bettina Koelle (South Africa) 6

1 – Indian Institute for Human Settlements, India); 2 – International Development Research Centre, Canada; 3 – Red Cross Red Crescent Climate Centre, United Kingdom); 4 – PlanAdapt, Switzerland; 5 – McGill University, Canada); 6 – Red Cross Red Crescent Climate Centre, South Africa

There is a growing recognition that responding to complex and dynamic systems-scale problems requires multiple perspectives. Adaptation researchers have therefore begun adopting innovative and strategic partnerships to adequately address the problems they aim to confront. Transdisciplinary research linking research and practice is seen by many as a key means of enabling effective responses but is also known to be challenging to undertake (Cundill *et al* 2018). This panel will reflect on the challenges of applying collaborative, transdisciplinary and use-oriented models of research at two levels:

- At the programmatic level, where partners must negotiate priorities and ways of achieving anticipated outcomes;
- At the level of implementation, where researchers and practitioners aim to co-produce responses that can translate into meaningful actions.

Drawing on recent experiences from five large-scale transdisciplinary research initiatives on adaptation and resilience, this session showcases the experiences of researchers and practitioners from the Global North and South. Using a combination of short presentations and interactive activities, it will introduce strategies used by programme members to navigate the challenges of collective action at these two scales, and will also examine how cross-scale interactions supported learning and problem-solving.

Ultimately the session will offer participants the opportunity to reflect on the specific opportunities, and potential pitfalls of participating in transdisciplinary research partnerships aiming to influence adaptation policy and practice. It will provide concrete strategies for addressing the pitfalls identified, and will identify priorities for future inquiry into these processes. The session will be closed with a presentation of the recent ‘Principles for effective collaboration and learning in consortia’ publication that we have produced with input from BRACED, CARIAA, FCFA, PLACARD and other large consortia, to compare and complement the session’s outcomes with our previous work in this area.

Researchers, practitioners and funders looking to increase understanding of the value of, and challenges inherent in, collaboration in high quality transdisciplinary adaptation research. Given that this type of collaborative model is increasingly funded and favoured to seek solutions to deal with complexity, it is timely to explore the challenges and lessons learned from these types of collaborations. The session will share empirical evidence, personal experiences, and practical guidance from international adaptation research initiatives and provide a critical reflection on how to maximise research impact through collaboration across scales. The interactive format will provide a change of pace from sessions focused solely on presentations.

SCIENCE SESSION

Dealing with the challenges of relevance and communication in climate information

Chair | Emiliano Ramieri | Thetis

Showcase of recent work dealing with the importance of producing actionable scientific evidence and the challenges associated with communicating climate information, and assuring its relevance for both private and public stakeholders.

UK newspapers' narratives of climate change impacts and adaptation strategies: Few recommendations for individual households

Rachel Harcourt (United Kingdom) 1; **Wandi Bruine De Bruin** (United Kingdom) 1,2; **Suraje Dessai** (United Kingdom) 1; **Andrea Taylor** (United Kingdom) 1

1 – University of Leeds; 2 – Carnegie Mellon University

Strategies to develop researcher-stakeholder relationships with the goal of co-production in climate adaptation

Renee Mcpherson (United States of America) 1; **Emma Kuster** (United States of America) 2; **Mike Langston** (United States of America) 3; **Atherton Phleger** (United States of America) 2; **Derek Rosendahl** (United States of America) 2; **April Taylor** (United States of America) 4

1 – University of Oklahoma; 2 – South Central Climate Adaptation Science Center; 3 – U.S. Geological Survey; 4 – The Chickasaw Nation



SS007

14:00 Tuesday

Room S2

Keywords: climate change beliefs, communication, co-production, media, narratives, transformation

OC037

OC038

OC039

Co-producing nature-based solutions in cities: model processes in Genk, Glasgow and Poznan

Niki Frantzeskaki (Netherlands) 1; **Katharina Hölscher** (Netherlands) 1; Marleen Lodder (Netherlands) 1; Daan Sillen (Netherlands) 1

1 – DRIFT, Faculty of Social and Behavioral Sciences, Erasmus University Rotterdam

OC040

Communicating uncertainty in seasonal climate forecasts: Lessons from the EUPORIAS project

Andrea Taylor (United Kingdom) 1; Suraje Dessai (United Kingdom) 1

1 – University of Leeds

OC041

Picturing resilience: analysis of newspaper images of 2011 floods in Brisbane, Australia

Anne M Leitch (Australia) 1; Erin Bohensky (Australia) 2

1 – Griffith University; 2 – CSIRO Australia

OC042

Effects of extreme weather experience on climate change belief

Daniel Osberghaus (Germany) 1; Carina Fugger (Germany) 2

1 – Centre for European Economic Research (ZEW); 2 – Center for European Economic Research (ZEW)

SCIENCE PRACTICE SESSION

SP009



14:00 Tuesday

Room S5

Keywords: loss and damage, attribution, finance, climate politics, climate risk management

Loss and Damage from climate change: science, practice and policy propositions for tackling adaptation limits

Elisa Calliari (United Kingdom) 1; Lisa Vanhala (United Kingdom) 2; Reinhard Mechler (Austria) 3

1 – University College London (UCL), Euro-Mediterranean Centre on Climate Change (CMCC); 2 – University College London (UCL); 3 – International Institute for Applied Systems Analysis (IIASA)

2018 was marked by a number of particularly severe climate-related extreme events across the globe, well in line with IPCC findings showing that the frequency, intensity and severity of climate-related hazards are being adversely shaped by anthropogenic climate change. Increasingly, evidence is emerging that risks linked to those hazards have the potential to significantly affect lives and erode livelihoods across the globe, as well as push vulnerable people, communities and countries to

their physical and socio-economic adaptation limits. Is climate change thus leading to instances ‘beyond adaptation’? The UNFCCC’s Loss and Damage (L&D) policy discourse has given voice to these concerns over the last 3 decades, yet concepts, methods and tools as well as directions for policy and implementation have remained contested and vague.

This session presents state-of-the-art research on L&D conducted across diverse disciplines, including attribution science, economics, and political science, as well as emerging policy options and responses from practice. It is structured along three conceptually interrelated sections aiming at i) introducing key concepts, challenges and insights relevant to the L&D debate; ii) discussing critical issues shaping the policy debate; and iii) outlining policy options and other response mechanisms for L&D. Appropriate time is devoted to foster engagement with the audience, and discuss promising avenues for enhancing coherence not only within the same L&D debate, but also with the related policy agendas of the Sendai Framework for Disaster Risk Reduction (SFDRR) and the United Nations Sustainable Development Goals (SDGs).

About the organizers:

The session integrates and showcases ongoing research efforts under the European Research Council (ERC) funded project Climate Change Loss and Damage (CCLAD) and the Loss&Damage Network initiative. CCLAD examines the politics of international negotiations and implementation of L&D policy and involves cross-national research on domestic L&D practices. The Loss and Damage Network brings together scientists and practitioners to inform the L&D debate with evidence-based research and policy propositions.

Presentations

1. Limits to climate change adaptation
2. Climate risk analysis for identifying the risk and policy space for Loss and Damage. Integrating notions of distributive and compensatory justice with comprehensive climate risk management
3. Attribution science: how is it relevant to the Loss and Damage policy and practice debate?
4. The Politics of L&D – a map of ‘contentious issues’ in loss and damage climate negotiations
5. Insurance as a Response to Loss and Damage?
6. Innovative financial tools for tackling L&D
7. Technology for Climate Justice

SP010



14:00 Tuesday

Room S6

Keywords: governance,
procurement, nature based
solutions, ecodrr

SCIENCE PRACTICE SESSION

Nature based solutions – governance, business models and financial mechanisms for climate change adaptation and DRR

Steve Banwart (United Kingdom) 2; Juraj Jurik (Switzerland) 3; Siobhan Mcquaid (Ireland) 4; Elena Lopez Gunn (Spain) 1

1 – ICATALIST; 2 – University of Leeds; 3 – GIB Foundation; 4 – University College, Dublin

The EU is currently funding a cluster of projects on nature-based solutions. Under this workforce the projects are exchanging knowledge and experience in relation Governance, Business Models and Financial Mechanisms. This workshop will report on the Work of Task Force 3 on the two main lines identified at the A Coruña meeting in May 2018.

1. Mapping the landscape of different financing (funding) mechanisms and business typologies that would allow for faster NBS uptake.
2. Green public procurement i.e. how should public procurement work in order to favor NBS instead of conventional infrastructure solutions.

In addition other topics identified by the Task force will be used to facilitate a discussion with the audience on mapping the landscape of different financing mechanisms and business models.

For example: i) Type of funding – civic (crowd funding etc.), public or private and their sub categories ii) Scale of project – city, regional, national, iii) Scale of funding, iv) green/hybrid/grey, v) Different types of NBS and vi) The different types of stakeholders. Why people are engaging in NBS? The type of benefits they are interested in, i.e. flood risk, heat risk, aesthetics.

We will discuss how these criteria could be combined particularly in relation to climate change adaptation and ecoDRR, with a particular focus on cities and regions.

Presentations

Juraj Jurik and Katerina Schneider | GIB Foundation | THINK NATURE

Wei Liu and Joanne Bayer | IIASA | PHUSICOS – Governance, business models and financial mechanisms of emerging ecological urban and landscape operators in China

Ernesta Maciulyte | Fraunhofer | UNALAB

Helen Toxopeus | NATURVATION

Aitziber Egusquiza | Tecnalia | 4NATURE4CITIES

Monica Altamirano | DELTARES | Nina Graveline | BRGM | Elena Lopez-Gunn | ICATALIST | NAIAD

Siobhan Mcquaid | Trinity College Dublin | CONNECTING

Eduardo Croci and Benedetta Lucchitta | Univ Bocconi | UrbanGreenUp

Laura Baroni and Lisa.Eichler | Trinomics | GROWGREEN

SCIENCE PRACTICE SESSION

Monitoring adaptation in cities: Considerations for equity and justice

Diana Reckien (Netherlands) 1; Marta Olazabal (Spain) 2; Ambika Markanday (Spain) 2; Johannes Klein (Finland) 3

1 – University of Twente; 2 – BC3 Research; 3 – Geological Survey of Finland

Cities are in the process of developing and implementing adaptation plans for their territories, with a limited amount of governance bodies also preparing to monitor the effects and impacts of adaptation plans and related actions. For example, Araos *et al* (2016) found that current local adaptation plans seldom include monitoring processes and indicators, which denotes both, a particular need to support cities in this regard and an opportunity that will ultimately impact equity and justice considerations of adaptation in cities. The process of adaptation is related to the anticipated reduction of vulnerabilities and risks, implying the incorporation of vulnerable groups into the adaptation planning process and the non-discriminatory outcome of adaptation solutions on these groups, i.e. fairness of the process and the outcomes of adaptation initiatives.

However, preliminary research has shown that justice considerations are seldom incorporated in adaptation initiatives or their monitoring schemes. This science session highlights these works by focussing on a) describing the state of the art of considering justice concerns in adaptation initiatives, b) identifying evidence on why considering equity and environmental justice criteria is important to include in tracking schemes and c) exploring solutions for how to integrate justice concerns more strongly into the planning and monitoring of local adaptation processes.

In this regard, specific questions that presentations will cover are:

- How are procedural and distributional justice concerns currently reported in local adaptation plans of cities around the globe and their monitoring schemes?
- How are justice issues currently addressed in adaptation solutions?
- What are necessary and appropriate governance, equity and justice indicators to be included in adaptation and adaptation monitoring in order to speak of successful, effective adaptation processes and solutions?



SP011

14:00 Tuesday

Room S7

Keywords: adaptation plans and policies, adaptation reporting, indicators of adaptation solutions, justice indicators, procedural and distributional justice

Presenters

1. **Diana Reckien** | University of Twente

2. **Marta Olazabal** | **Elisa Sainz de Murieta** | **Maria Ruiz de Gopegui** | Basque Centre for Climate Change | **Kayin Venner** | UNESCO)

3. **Ambika Markanday** | **Elisa Sainz de Murieta** | **Ibon Galarraga** | Basque Centre for Climate Change

4. **Johannes Klein** | Geological Survey of Finland | **Malcolm Araos** | **Aasa Karimo** | **Milja Heikkinen** | **Tuomas Ylä-Anttila** | **Sirkku Juhola**

SCIENCE PRACTICE SESSION

SP012



14:00 Tuesday

Room S8

Keywords: climate-resilient urban design, climate finance, UCCRN, resilience pathways, integrating mitigation and adaptation

Climate change and cities: Second Assessment Report of the Urban Climate Change Research Network

Chantal Pacteau (France) 1,2; **Mattia Leone** (Italy) 1,3; Luc Abbadie (France) 1,4; Reimund Schwarze (Germany) 1,5; Nathalie Jean-Baptiste (Germany) 1,5; Martin Lehmann (Denmark) 1,6

1 – UCCRN – Urban Climate Change Research Network; 2 – Centre National de la Recherche Scientifique; 3 – Università di Napoli Federico II – Dipartimento di Architettura; 4 – Université Pierre et Marie Curie – Institute of Ecology and Environmental Sciences; 5 – UFZ – Helmholtz-Zentrum für Umweltforschung; 6 – Aalborg University – Department of Planning

The Urban Climate Change Research Network's Second Assessment Report on Climate Change in Cities (ARC3.2), edited by C. Rosenzweig, W.D. Solecki, P. Romero-Lankao, S. Mehrotra, S. Dhakal, S.A. Ibrahim and published in early 2018, is the second in a series of global, science-based reports to examine climate risk, adaptation, and mitigation efforts in cities. The book explicitly seeks to explore the implications of changing climatic conditions on critical urban physical and social infrastructure sectors and intersectoral concerns. The primary purpose of ARC3.2 is to inform the development and implementation of effective urban climate change policies, leveraging ongoing and planned investments for populations in cities of developing, emerging, and developed countries. ARC3.2 gives concrete solutions for cities in regard to mitigation and adaptation; urban planning and design; equity and environmental justice; economics, finance, and the private sector; critical urban physical and social sectors such as energy, water, transportation, housing and informal settlements, and solid waste management; and governing carbon and climate in cities. Other key topics include ecosystems and biodiversity, and urban coastal zones. This volume, like its predecessor, will be invaluable for a range of audiences involved with climate change and cities: mayors, city officials

and policymakers; urban planners; policymakers charged with developing climate change mitigation and adaptation programs; and a broad spectrum of researchers and advanced students in the environmental sciences.

The session is oriented to disseminate the key messages from ARC3.2 and discuss potential pathways for their implementation, supporting the activities of the UCCRN Regional Hubs in leading a global, sustained, city-focused climate change knowledge and solutions program by strengthening ongoing collaborations and knowledge exchange both for and with cities of various sizes. The focus of the Regional Hubs is to gather and initiate world-class research and apply it to adaptation and mitigation planning. The Hubs operate at the continental-scale and link knowledge to action with tools such as the Case Study Docking Station, and also by working with relevant regional and global actors.

Presentations

Chantal Pacteau | Luc Abbadie | UCCRN ARC3.2 Pathways to urban transformation

Mattia Leone | Managing disasters in a changing climate

Chantal Pacteau | integrating mitigation and adaptation as win-win actions

Mattia Leone | Embedding climate change in urban planning and design

Reimund Schwarze | Financing climate change solutions in cities

Nathalie Jean-Baptiste | Housing and low-income communities

Martin Lehmann | UCCRN case study docking station

SCIENCE SESSION

Climate change and the economy: from assessing to better planning for the future

Chair | Paul Watkiss | Stockholm Environment Institute, Sweden

Report on assessments carried out to understand the impacts and risks that climate change may pose to a varied set of natural systems, business and economic sectors, as well as the development of tools that can support better planning for the future.

Climate change risk assessment of future import-based bioenergy supply chains in the Nordic countries

Fanny Groundstroem (Finland) 1; Sirkku Juhola (Finland) 1

1 – University of Helsinki



SS008

14:00 Tuesday

Room S9

Keywords: adaptation planning, business sectors, economic activity, risk assessments, supply chains, urban services

OC043

OC044

The Green Book: Planning support tool for identifying and adapting South African settlements at risk to the impacts climate change

Alize Le Roux (South Africa) 1; **Willemien Van Niekerk** (South Africa) 1; **Amy Pieterse** (South Africa) 1

1 – Council for Scientific and Industrial Research (CSIR), South Africa

OC045

Distribution of global temperature effects on downscaled economic activity

Shouro Dasgupta (Italy) 1,2; **Francesco Bosello** (Italy) 1,3; **Enrica De Cian** (Italy) 1,2; **Malcolm Mistry** (Italy) 1,2

1 – Centro Euro-Mediterraneo sui Cambiamenti Climatici; 2 – Università Ca' Foscari Venezia; 3 – Università degli Studi di Milano

OC046

An assessment of Great Britain's future susceptibility to subsidence as a consequence of climate change

James White (United Kingdom) 1; **David Entwisle** (United Kingdom) 1; **Anna Harrison** (United Kingdom) 1; **Hughes Andrew** (United Kingdom) 1; **Hulbert Andrew** (United Kingdom) 1; **Jones Lee** (United Kingdom) 1; **Majdi Mansour** (United Kingdom) 1; **Wang Lei** (United Kingdom) 1; **Kathryn Lee** (United Kingdom) 1

1 – British Geological Survey, Keyworth, UK

OC047

Observed and modelled effects of the temporal variability of rainfall on evapotranspiration and runoff in semi-arid environments

Marinos Eliades (Cyprus) 1; **Adriana Bruggeman** (Cyprus) 1; **Hakan Djuma** (Cyprus) 1; **Corrado Camera** (Italy) 2

1 – The Cyprus institute; 2 – Università Degli Studi Di Milano

OC048

Integrated modelling to analyse flooding resilience. The RESCCUE project

Beniamino Russo (Spain) 1; **David Sunyer** (Spain) 1; **Luca Locatelli** (Spain) 1; **Eduardo Martínez** (Spain) 2; **Jose Luis Dominguez** (Spain) 3; **Miguel Pardo** (Spain) 4; **Areas Gabas** (Spain) 5; **Mara Do Ceu Almeida** (Portugal) 6; **Maria Joao Telhado** (Portugal) 7; **Iñes Candido** (Portugal) 8; **Jose Saldanha Matos** (Portugal) 9; **Barry Evans** (United Kingdom) 10; **John Stevens** (United Kingdom) 11; **Rob Henderson** (United Kingdom) 12; **Marc Velasco** (Spain) 1

1 – AQUATEC – SUEZ Advanced Solutions; 2 – CETAQUA; 3 – IREC; 4 – ENDESA; 5 – Ajuntament de Barcelona J; 6 – LNEC; 7 – Câmara Municipal de Lisboa; 8 – EDP; 9 – HIDRA; 10 – University of Exeter; 11 – Bristol City Council; 12 – Wessex Water

SCIENCE SESSION

Fine resolution climate modelling and downscaling to support adaptation

Chair | Pedro Matos Soares | Instituto Dom Luiz, University of Lisbon

Presentation of results focused on the fine-scale modelling and downscaling of climate projections using global and limited-area models as well as statistical methods, including the representation of fine-scale disturbances and resolution of convective and other microclimatic features.

Are there benefits for stakeholders from representation of North Atlantic extratropical cyclones using the PRIMAVERA project high-resolution global climate models?

Erika Palin (United Kingdom) 1; Galina Guentchev (United Kingdom) 1; Julia Lockwood (United Kingdom) 1

1 – Met Office

Changes in summertime short-term precipitation extremes over Europe studied in a surrogate warming experiment with a convective permitting climate model

Erik Kjellström (Sweden) 1; Geert Lenderink (Netherlands) 2; Petter Lind (Sweden) 1; Danijel Belusic (Sweden) 1

1 – Swedish Meteorological and Hydrological Institute; 2 – KNMI

Urban microclimate modelling methodology at pan-European level to support adaptation planning and design in cities

Giulio Zuccaro (Italy) 2; **Mattia Leone** (Italy) 1; Stefano Nardone (Italy) 3; Alessandra Capolupo (Italy) 3

1 – Università di Napoli Federico II – Dipartimento di Architettura; 2 – Università di Napoli Federico II – Dipartimento di Strutture per l'Ingegneria e l'Architettura, PLINIVS-LUPT Study Centre; 3 – Università di Napoli Federico II – PLINIVS-LUPT Study Centre

Event-based analysis to evaluate the performance of COSMO – CLM model with the urban parametrization

Mario Raffa (Italy) 1; **Marianna Adinolfi** (Italy) 1; Paola Mercogliano (Italy) 1,2

1 – CMCC Foundation (Euro-Mediterranean Center on Climate Change); 2 – C.I.R.A. -Italian Aerospace Research Center



SS009

14:00 Tuesday

Room S10

Keywords: extreme events, GCMs, high-resolution, RCMs, transport infrastructures, urban microclimates

OC049

OC050

OC051

OC052

OC053

Dynamical and statistical downscaling of COSMO-CLM simulations for climate change adaption of transport infrastructure in Germany

Michael Haller (Germany) 1; Susanne Brienens (Germany) 1; Stefan Krähenmann (Germany) 1; Barbara Früh (Germany) 1

1 – German Meteorological Service, Frankfurter Straße 135, 63067 Offenbach

OC054

Climate change adaptation framework for multiple urban areas: Northern Portugal case study

Sandra Rafael (Portugal) 1; Sílvia Coelho (Portugal) 1; Miguel Coutinho (Portugal) 2; Alexandra Monteiro (Portugal) 1; João Medina (Portugal) 3; Susana Figueiredo (Portugal) 3; Sofia Cunha (Portugal) 3; Ana Isabel Miranda (Portugal) 1; Myriam Lopes (Portugal) 1; Carlos Borrego (Portugal) 1

1 – CESAM & Department of Environment and Planning, University of Aveiro; 2 – IDAD – Instituto do Ambiente e Desenvolvimento; 3 – SPI – Sociedade Portuguesa de Inovação, Porto

SCIENCE SESSION

SS010



14:00 Tuesday

Room S11

Keywords: co-production, decision-making support, decision support tools, probabilistic modelling, transferability, vulnerability

Methodological frameworks and decision supporting tools for climate change adaptation

Chair | Rob Swart | Wageningen University & Research

Summary of results from recent assessments that develop and apply novel methodological frameworks to evaluate the effectiveness of adaptation measures, and to develop tools that convey user-relevant climate information in support of adaptation decision-making.

OC055

Making it happen: science to drive successful adaptation to climate change

Matthew Charlton (United Kingdom) 1; Megan Gawith (United Kingdom) 1; Harriet Orr (United Kingdom) 1

1 – Environment Agency

Evaluating the effectiveness of stakeholder-developed adaptation, mitigation and transformation pathways under high-end scenarios at multiple scales in Europe

Ian Holman (United Kingdom) 1; Niki Frantzeskaki (Netherlands) 2; Katharina Hölscher (Netherlands) 2; Simona Pedde (Netherlands) 3; Jill Jäger (Austria) 4; Lamprini Papadimitriou (United Kingdom) 1; Paula Harrison (United Kingdom) 5

1 – Cranfield University; 2 – Dutch Research Institute for Transitions (DRIFT); 3 – Wageningen University; 4 – Jill Jäger; 5 – Centre for Ecology and Hydrology

OC056

Hierarchical Bayesian approach for flood loss modelling for Europe

Nivedita Sairam (Germany) 1; Heidi Kreibich (Germany) 1; **Kai Schröter** (Germany) 1

1 – German Research Institute for Geosciences – GFZ, Potsdam

OC057

LIFE ADAPT2CLIMA tool: A decision support tool for adaptation to climate change impacts on the Mediterranean islands' agriculture

Christos Giannakopoulos (Greece) 1; Marco Moriondo (Italy) 2; Maria Papadopoulou (Greece) 3; Maria Loizidou (Greece) 3; Anna Karali (Greece) 1; Konstantinos V. Varotsos (Greece) 1; **Giannis Lemesios** (Greece) 1; Christina Papadaskalopoulou (Greece) 3; Paolo Merante (Italy) 2; Despoina Charchousi (Greece) 3; Marinos Markou (Cyprus) 4; Maria Gabriella Matranga (Italy) 6; Eleni Hatziyanni (Greece) 5

1 – National Observatory of Athens; 2 – National Council of Research – Institute of Biometereology; 3 – National Technical University of Athens; 4 – Agricultural Research Institute; 5 – Region of Crete; 6 – Region of Sicily

OC058

Assessing 33 forest species tolerance and associated risk for growth and survival in Reinforce arboreta along Atlantic climate gradient

António Henrique Correia (Portugal) 1; Maria Helena Almeida (Portugal) 1; Christophe Orazio (France) 2; Margarida Tomé (Portugal) 1; Manuela Branco (Portugal) 1

1 – Centro de Estudos Florestais, Instituto Superior de Agronomia, Universidade de Lisboa; 2 – EFI Planted Forests facility

OC059

A climate change vulnerability index for cetacean species in the Madeira archipelago

Andreia Sousa (Portugal) 3; Filipe Alves (Portugal) 1,2; Ana Dinis (Portugal) 1; Julia Bentz (Portugal) 3; Maria João Cruz (Portugal) 3; João Pedro Nunes (Portugal) 3

1 – CIIMAR-Madeira, Interdisciplinary Centre of Marine and Environmental Research of Madeira, Edifício Madeira Tecnopolo, Funchal, Portugal; 2 – MARE, Marine and Environmental Sciences Centre / ARDITI, Madeira, Portugal; 3 – Centre for Ecology, Evolution and Environmental Changes (CE3C). Climate Change Impacts, Adaptation and Modelling (CCIAM). Faculdade de Ciências da Universidade de Lisboa, Portugal

OC060

SP013



14:00 Tuesday

Room S13

Keywords: climate risk assessment, impact chains, adaptation, climate change, geographical scales

Advances in climate risk assessment: Measuring with impact chains

Elodie Briche (France) 1; **Ghislain Dubois** (France) 1; **Lucie Royer** (France) 1; **Marc Zebisch** (Italy) 2; **Stefan Schneiderbauer** (Italy) 2; **Erich Rome** (Germany) 3; **Daniel Lückerrath** (Germany) 3; **Ulrike Lehr** (Germany) 4

1 – TEC Conseil; 2 – Eurac Research; 3 – Fraunhofer IAIS; 4 – Gesellschaft für Wirtschaftliche Strukturforschung (GWS)

In addition to current climate variability, climate change threatens socio-economic activities and the environment worldwide. Stakeholders and policy makers have expressed a need for robust and reliable Climate Risk Assessments (CRAs) methodologies and tools to develop strategies and actions in order to adapt to the potential impacts of climate change. The German International cooperation (Gesellschaft für Internationale Zusammenarbeit, GIZ) in the Vulnerability Sourcebook (Fritzsche *et al.*, 2014) proposed the concept of impact chain as a standardized approach for CRAs implementation, consistent with the IPCC's concepts (IPCC AR4, 2007 and/or AR5, 2014). Recently, the concept has been adapted to the new IPCC AR5 concept of climate risk (GIZ and EURAC, 2017) and its application in the framework of ecosystem-based adaptation (GIZ, EURAC, UNU, 2018).

Impact chains (ICs) have since become more and more widely used as a climate risk assessment method, in Europe and abroad (cooperation projects like GIZ, UNDP or World Bank, Horizon 2020 projects like SOCLIMPACT or RESIN), at local or regional or European level, for research and decision making. They provide an analytical tool that helps to better understand, systemize and prioritize the factors that drive climate impact related risks in a specific system of concern and serve as a backbone for an operational climate risk assessment. They allow synthesizing in a diagram the complex relationships between climate hazards, vulnerability (sensitivity and adaptive capacity) and exposure.

This science-practice session will allow bringing discussion on this innovative and integrated approach of ICs, as a conceptual framework allowing to integrate both quantitative and qualitative data from different disciplines. Authors will show how the implementation of ICs can support quick diagnosis but also in-depth and sophisticated modelling using climate projections. The discussion will also focus on the ability of such tool to integrate climate impact and socio-economic models (H2020 Soclimpact project, 2018-2021), at different spatio-temporal scales (GIZ, Bangladesh project, 2016-2018). Their capacity to be cross sectoral and cross scales, allowing to aggregate or downscale risks and compare sectors will be emphasized.

ICs also allow formatting the CRAs' outcomes in various understandable formats (graphs, maps etc.). Therefore, authors will discuss on how participating approaches and capacity building within the IC methodology can foster a better understanding and ownership of the results while facilitating dialogue between end-beneficiaries to enhance climate change policies, funding and planning.

Presentations

1. Marc Zebisch | Stefan Schneiderbauer | Eurac Research, Bolzano, Italy | Climate risk assessment with impact chains – methods and experiences

2. Dr.-Ing. Erich Rome | Fraunhofer IAIS | Introduction to the IVAVIA method, qualitative assessment of climate change impacts on urban systems with IVAVIA

3. Dr. Daniel Lücknerath | Fraunhofer IAIS | Quantitative assessment of climate change impacts on urban systems with IVAVIA and how to present assessment results

4. Dr Elodie Briche | TEC-Conseil | Sectoral approaches about impacts chains at scale of EU islands

5. Dr Ulrike Lehr | Institute for Economic Structures Research (GWS), Osnabrück, Germany | Improving economic models with IC assessments and vice versa – the example of Climate Change on EU Islands

SCIENCE SESSION

Examining the challenges of co-designing climate services

Chair | Marta Bruno Soares | School of Earth and Environment, University of Leeds

Presentation of different international cases studies and experiences focused on co-producing knowledge and solutions that bridge the gap between climate science and practice, and in the co-design of climate services and disaster risk reduction approaches.

Where adaptation pathways and politics meet: coastal erosion and adaptation planning in Old Bar, Australia

Sonia Graham (Spain) 1

1 – Universitat Autònoma de Barcelona



SS011

14:00 Tuesday

Room S16

Keywords: best practices, climate services, co-production, early warning, knowledge brokering, lessons learned

OC061

OC062

The politics of ‘usable’ knowledge: examining the co-production of climate services in Tanzania

Meaghan Daly (United States of America) 1; **Lisa Dilling** (United States of America) 2

1 – University of New England; 2 – University of Colorado Boulder

OC063

Co-designing climate services ‘in context’: Climate in Tandem, a process- and decision-led framework and online guidance

Elizabeth Daniels (United Kingdom) 1; **Sukaina Bharwani** (United Kingdom) 1; **Ruth Butterfield** (United Kingdom) 1; **Julia Barrott** (United Kingdom) 1; **Åsa Gerger Swartling** (Sweden) 1; **Gregor Vulturius** (Sweden) 1; **Brenda Mwalukanga** (Zambia) 2

1 – SEI; 2 – University of Zambia / Lusaka City Council

OC064

Recommendations for co-producing user-oriented climate services: insights from three Swedish case studies on adaptation to natural hazards

Karin André (Sweden) 1; **Linn Järnberg** (Sweden) 1; **Lena Strömbäck** (Sweden) 2; **Lotta Andersson** (Sweden) 2; **Åsa Gerger Swartling** (Sweden) 1

1 – Stockholm Environment Institute; 2 – Swedish Meteorological and Hydrological Institute

OC065

Developing adaptation strategies using science and stakeholders

Henk-Jan Van Alphen (Netherlands) 1; **Eduard Interwies** (Germany) 2; **Stefan Görlitz** (Germany) 2

1 – KWR; 2 – Intersus

OC066

Co-producing science and innovative outcomes for climate change adaptation and disaster risk reduction

Chloe Begg (Germany) 1; **Christian Kuhlicke** (Germany) 1; **Oliver Gebhardt** (Germany) 1; **Daniela Siedschlag** (Germany) 1

1 – Helmholtz Centre for Environmental Research

TOOL-SHED SESSION

Climate Tagger – a suite of software tools to help organizations in the climate and development streamline and catalogue their data and information resources

Denise Recheis (Austria) 1

1 – REEEP

Climate Tagger is a suite of tools to help knowledge-driven organizations in the climate and development arenas streamline and catalogue their data and information resources, and connect them to the wider climate knowledge community.

Climate Tagger was developed in 2011 by REEEP in collaboration with the US National Renewable Energy Laboratory's Open Energy Information program, the Stockholm Environment Institute's weADAPT program and the Institute for Development Studies' Eldis program.

Climate Tagger utilizes Linked Open Data to help better catalogue and connect data, and backed by an expansive Thesaurus built with software PoolParty, and developed by experts in fields ranging from climate mitigation and adaptation. Currently a collaboration with SEI / PLACARD sees the development of the topics CCA and DRR.

Web address: www.climatetagger.net



TS004

14:00 Tuesday

Room S15

Keywords: standardisation, tagging, linked data, thesaurus

TOOL-SHED SESSION

International knowledge exchange on climate adaptation with the Climatescan platform

Floris Boogaard (Netherlands) 1; Olsson Jonas (Norway) 3; Tone Muthanna (Netherlands) 2; Rick Heikoop (Netherlands) 1; Guri Venvik (Norway) 4

1 – Hanze University of Applied Science Groningen; 2 – Norwegian University of Science and Technology; 3 – Swedish Meteorological and Hydrological Institute; 4 – Geological Survey of Norway (NGU)

Cities are becoming increasingly vulnerable to climate change and there is a need for (inter)national knowledge exchange on Best Management Practices (BMPs) in climate adaptation.



TS005

14:30 Tuesday

Room S15

Keywords: co-production, citizens involvement, urban water systems, climate adaptation, urban resilience

In semi-structured interviews stakeholders demanded international knowledge exchange tools that are interactive, open source and provide more detailed information (exact location and users, scientific proof of efficiency). From this conclusion the web-based platform on urban resilience www.climatescan.nl was created for stakeholders working on climate resilience and applied in international projects as INXCES, WaterCoG, RECONNECT and Muffin.

Within 2 years it holds over 3000 'blue-green' projects around the globe with over 10.000 users. Evaluation of the tool concluded that it helps policy makers and practitioners to gather valuable data on BMPs and stimulates knowledge exchange about climate adaptation. However it was suggested that the tool could be further improved by transforming from a 'map with BMPs' to a interactive platform or 'climatescan community' to further create awareness and brings together stakeholders from around the world (currently mostly Europe/The Netherlands).

The tool was applied during non-european conferences as the Adaptation Futures & The Water Institute of Southern Africa (WISA), in Cape Town and workshops and challenges for young professionals city climatescan in Asia. Currently climatescan has a stronger link to social media for young professionals suggested by stakeholders (facebook and Twitter) and is a frequently used tool in City Climatescans around the world. City Climatescans is a pressure cooker programme for young students & professionals working in transdisciplinary and transcultural teams on climate adaptation topics with a tangible end result such as a regional climatescan map with BMPs, vegetated waste catchers and or floating constructed wetlands. The use of Climatescan by different stakeholders during these events led to achieving the ambitions to be an interactive community rather than a static tool, resulting in further recommendations for climatescan and other web-based tools world wide.

Web address: www.climatescan.nl

TOOL-SHED SESSION

TS006



15:00–15:15 Tuesday

Room S15

Keywords: InSARNorway,
UrbanGeology, subsidence,
flood risk

Subsidence in urban areas measured by InSAR (Sentinel1) related to flooding

Guri Venvik (Norway) 1

1 – Geological Survey of Norway

Rapid changes in the urban environment due to growth puts the urban water cycle out of balance, hence, affecting other surface and subsurface processes, such as subsidence and surface water management. Subsidence of the ground is causing risk and hazard. This newly launched tool, November 2018, is Open Access and part of the Copernicus program.

In a recent study (Venvik *et al.* in press) datasets from InSAR satellites showing subsidence are combined with data from flood modelling in two different analytical methods using ArcGIS tools to develop a risk assessment map for areas most prone to the combination of both flooding and subsidence. Applying user-centered principles, this work focuses on methods for risk assessment maps as a support tool to locate areas where mitigation of subsidence and adaptation for surface water management will be most efficient and measures can be implemented. The results of the methods for risk assessment maps show that one of the methods give significant results compared to the other method. Such method will be a helpful tool for decision-makers when prioritizing areas for measures such as Sustainable urban Drainage Systems (SuDS). The study is related to the JPI Water funded project INXCES.

This is an interactive tool that can showcase multiple real situations related to different problems such as, areas prone to flooding, underground constructions, cultural heritage etc.

TOOL-SHED SESSION

RESCCUE RAF App – Climate change Resilience Assessment Framework tool for urban areas

Rita Salgado Brito (Portugal) 1; **Cristina Lucas Pereira** (Portugal) 1; **Pedro Lopes** (Portugal) 1

1 – LNEC

This tool provides a framework to assess urban resilience to climate change, with focus on water, considering an objective-oriented approach and four resilience dimensions: organizational, considering governance relationships; spatial, covering urban space and environment; functional, focused on strategic services in the city (water, wastewater, stormwater, waste, energy and mobility); and physical, centred on infrastructure of these services. The resilience objectives are described through key criteria, expressing different points of view, which are evaluated by indicators or metrics. In this given scope, the metrics are described and associated to reference values, providing a user-friendly assessment to support a structured diagnosis. The App allows the use of a defined structure based on dimensions / objectives / criteria / metrics, specifically designed to address the referred scope.

The potential users for this tool are the municipalities, utilities of urban strategic services and consultants and researchers with interest in cities or services resilience, climate change or any other multidisciplinary assessment.



TS007

15:15 Tuesday

Room S15

Keywords: urban resilience, climate change, multisectorial approach, assessment, resilience action plan

The App can be used as a tool to support assessment, diagnosis and decision-making as well as the development of resilience plans, to monitor progress of a city or service or to compare different cities or services. This tool is of interest to civil, urban water and environmental engineering, urban resilience and climate change adaptation scientific areas.

The main benefits of developing this platform are to contribute to the resilience assessment of cities and services, to the development of resilience plans, to address the contribution of urban services to the city's resilience and to acknowledge improvement opportunities and monitor progress.

This tool facilitates the dissemination and application to several cases and projects, nowadays limited with the existing tools, allowing for feasible developments in areas as relevant as resilience and risk management in urban areas.

START OF NEXT SESSION

SS012

16:15 Tuesday
Room PA

Keywords: citizen participation, community engagement, gender, health, integration, social justice

OC067

OC068

OC069

SCIENCE SESSION

Recognising and engaging citizens for more equitable and effective adaptation

Chair | Maddalena Dali | European Commission DG CLIMA

Illustrative case studies that explore different approaches in theory and practice related to the essential engagement of citizens in effective adaptation action, and the recognition of their roles, benefits and responsibilities in light of the uneven distribution of extreme weather impacts.

Addressing social vulnerability to climate change in policy and practice

Aleksandra Kazmierczak (Denmark) 1

1 – European Environment Agency

Climate risks and environmental justice: how land deals constrain resilience practices in Mozambique

Carla Gomes (Portugal) 1

1 – Instituto de Ciências Sociais da Universidade de Lisboa

The affordability of flood risk property-level adaptation measures

Paul Hudson (Germany) 1

1 – University of Potsdam

Everybody should contribute, but not too much. An exploration of citizen responsabilization for adaptation by local governments in The Netherlands

Caroline Uittenbroek Uittenbroek (Netherlands) 1; **Heleen Mees** (Netherlands) 1; Dries Hegger (Netherlands) 1; Peter Driessen (Netherlands) 1

1 – Utrecht University

Breaking down policy siloes in Canada to protect vulnerable populations and increase national resilience to climate impacts and disaster risks

Jimena Eyzaguirre (Canada) 1; Marc Nelitz (Canada) 1; Heather Stager (Canada) 2

1 – ESSA Technologies Ltd.; 2 – Global Affairs Canada

New perspectives on citizen engagement in flood risk governance – a social practices approach

Dries Hegger (Netherlands) 1

1 – Environmental Governance, Copernicus Institute of Sustainable Development, Utrecht University

SCIENCE PRACTICE SESSION

Resilient historic communities

Annalisa Spalazzi (Italy) 1; Ellie Tonks (United Kingdom) 1; **Maria Julia Seixas** (Portugal)

1 – Climate-KIC; 2 – FCT Nova

Historic districts in cities have peculiar characteristics that make them unique for those who live there and for tourism. Common features as urban fabric made of medieval structures, narrow streets with few green public spaces and ancient and degraded heritage buildings, populated by elderly inhabitants and massive tourism fluxes, are at the origin of problems hampering the well-being and development of such districts. These districts generally suffer a general lack of climate resilient public spaces, low presence of green areas, severe limitations to implement energy efficiency measures and the utilization of RES in the historical buildings, very congested streets with excessive use of private cars, loss of the sense of community spirit and an usual limited citizens' engagement in local development plans. On the other hand, communities living in these areas need to be part of the transformation needed to build long-term sustainable districts. As for that, this science to practise session aims to explore and work with participants on the use of nature based solutions for community engagement to build communities acceptance in historic districts in order to cope with adaptation measures and historic beauty preservation.

OC070

OC071

OC072



SP014

16:15 Tuesday

Room S1

Keywords: community engagement, districts, governance, innovation, resilience

This session is based on the EIT Climate-KIC's work in Portugal through the EIT Climate-KIC Hub and our partner located in Lisbon (FCT Nova). The session builds on 2 ongoing projects involving Lisbon, in particular the Alfama historic district of Lisbon, and the EIT Climate-KIC Smart Sustainable districts programme. Our Smart Sustainable Districts programme is transforming cities one district at a time by supporting municipalities and other city stakeholders to develop and deliver transformative sustainability projects at a city-district scale. We work with all stakeholders, pursuing a collaborative approach, to design new innovation experiments to address climate change. A summary of the two projects is given below:

SSD Alfama – In 2017, we have applied the EIT Climate-KIC Smart Sustainable Districts methods in Alfama, the historic district in Lisbon, to achieve a validated list of problems around six key challenges as well as a long list of innovative conceptual solutions. More than 30 stakeholders have been engaged and continued working in 2018 in integrated sustainable and smart projects and initiatives, around clean mobility, friendly buildings and climate resilient public spaces. The result is a 'Detailed Smart and Sustainable Agenda for Alfama', designing new solutions for the appropriate targets and with the active participation and engagement of all stakeholders.

Sustainable Historic Districts – Lisboa (PT), Valletta (MT), Savona (IT), Ptuj (SI), Nicosia (CY), and Sassari (IT), 6 cities spread all over Southern Europe are working closely with EIT Climate-KIC to transform their historic districts towards more sustainable, climate resilient and inclusive communities, taking a holistic approach to addressing common challenges in historical cities of the Mediterranean.

Contributing authors

Climate-KIC SSD team + FCT Nova, Lisboa eNova, IRE Liguria, Cyprus Energy Agency and CMCC.

SCIENCE SESSION

SS013



16:15 Tuesday

Room S2

Keywords: adaptation policy, evaluation, mainstreaming, nature-based solutions, stakeholders, uncertainty

Mainstreaming, adaptation policy and governance

Chair | Marco Pütz | Swiss Federal Research Institute WSL

Report on the results of recent analysis of European and global climate policy mainstreaming efforts, and on the engagement of non-government stakeholders and civil society in regional adaptation governance and planning.

The state of climate change adaptation legislation and policy: a global analysis of national laws and policies

Michal Nachmany (United Kingdom) 1; Swenja Surminski (United Kingdom) 2; Sam Fankhauser (United Kingdom) 2

1 – Grantham Research Institute on Climate Change and the Environment – LSE; 2 – The Grantham Research Institute on Climate Change and the Environment – LSE

OC073

European Union decision making and climate change adaptation: an evaluation of the integration of adaptation into key policy sectors

Duncan Russel (United Kingdom) 1; Roos Den Uyl (United Kingdom) 1; Anne Jensen (Denmark) 2; Helle ørsted Nielsen (Denmark) 2; Sabine Weiland (France) 3

1 – University of Exeter; 2 – University of Aarhus; 3 – Lille Catholic University

OC074

Climate adaptation policy lock-ins: Towards better understanding, and transformation, of limited adaptation action?

Torsten Grothmann (Germany) 1; Dave Huitema (Netherlands) 2; Angela Oels (Netherlands) 2; Bernd Siebenhüner (Germany) 1; Tim Rayner (United Kingdom) 3; John Turnpenny (United Kingdom) 3

1 – University of Oldenburg; 2 – Open University of the Netherlands; 3 – University of East Anglia

OC075

Coastal policies in Portugal: Adaptation and maladaptation to climate change impacts

Luísa Schmidt (Portugal) 1; Carla Gomes (Portugal) 1

1 – Instituto de Ciências Sociais, Universidade de Lisboa

OC076

On the role of uncertainty in the mainstreaming of nature-based solutions for adaptation to climate change

Paul Dourojeanni (Chile) 1; Nora Van Cauwenbergh (Belgium) 1; Pieter Van Der Zaag (Netherlands) 1

1 – IHE Delft, Unesco Institute for Water Education

OC077

Exploring the role and inclusion of external cross-sectoral stakeholders in government adaptation planning

Jane Mccullough (United Kingdom) 1; **Cassandra Moll** (United Kingdom) 1; Stephen Jones (United Kingdom) 1

1 – Climate Northern Ireland

OC078

SP015



16:15 Tuesday

Room S5

Keywords: adaptation reporting, corporate risk, risk management, infrastructure

SCIENCE PRACTICE SESSION

Adaptation reporting and infrastructure operators – sharing practical experience and promoting best practice

Ross Lowrie (United Kingdom) 1; John Dora (United Kingdom) 2; Tim Hill (United Kingdom) 3; Amanda Crossfield (United Kingdom) 4; Peter O'Broin (United Kingdom) 5; **Rachel Thompson** (United Kingdom) 6

1 – Environment Agency, England; 2 – JDCL; 3 – Energy UK; 4 – Yorkshire Water; 5 – Airport Operators Authority; 6 – Gatwick Airport

Climate change is a risk that all organisations need to consider, and adapting to climate change will be essential to ensure they survive and thrive.

Infrastructure operators in particular must properly manage climate risks, given their dependence on physical assets and their role in providing essential services to citizens.

At its best, Adaptation Reporting should be a revelatory process, providing an opportunity for organisations that provide public services to explore their climate risks, manage them at a corporate level, and share approaches at a sectoral level. Early and effective adaptation can offer competitive advantage. Furthermore transparent reporting provides confidence to governments, stakeholders and shareholders that risks are well managed and adaptation is in hand.

At its worst Adaptation reporting could be repetitive, burdensome, costly and ineffective. Infrastructure operators already manage risks through other corporate risk management routes (including Task Force on Climate-related Financial Disclosures) and being forced to report business risks and commercial approaches to managing them could result in competitive disadvantage.

How should governments, regulators and reporters ensure we get the best from Adaptation Reporting mechanisms?

- Mandatory vs voluntary reporting
- Individual organisations vs sector representative reporting
- Stand-alone reports vs integrated into corporate risk management
- Defined templates vs bespoke reporting
- National vs regional reporting

This session explores the above questions, and seeks to learn and share in the experiences of those reporting authorities that have direct experience of a process of government-defined Adaptation Reporting. It is led by the UK's Infrastructure Operators Adaptation Forum (IOAF), a non-statutory best practice sharing group that focuses on climate adaptation for organisations and institutions involved in operating infrastructure.

In the UK, under the Climate Change Act 2008, two reporting rounds have been completed and third round preparation is underway. Each round has provided different approaches and in this session we will hear from those reporting authorities, both public and private, that have submitted Adaptation Reports.

We intend a deeply practical and experience-driven session where the presenters will be practitioners who have contributed to reports. We will cover the reporting experience from a range of infrastructure operators, including those from the water, energy and transport sectors.

This conversation is all about extracting the most value from the Adaptation Reporting experience – where participants rather than governments explore what makes a positive and productive reporting process.

Presenters

1. **Ross Lowrie** | Environment Agency, England

2. **Amanda Crossfield** | Yorkshire Water

3. **Tim Hill** | Uniper Energy on behalf of Energy UK

4. **Peter O'Broin** | Airport Operators Authority

R6 SCIENCE PRACTICE SESSION

Climate change impacts and risks at global warming of 1.5°C to 4°C: latest research findings

Richard Betts (United Kingdom) 1; Lamprini Papadimitriou (United Kingdom) 2; Michalis Vousdoukas (Italy) 3; Gustavo Naumann (Belgium) 4; Francesco Dottori, (Belgium) 5; Wojtek Szewczyk (Belgium) 5; **Jason Lowe** (United Kingdom) 6

1 – University of Exeter and Met Office; 2 – Cranfield Water Science Institute, Cranfield University; 3 – Institute of Environment and Sustainability; 4 – Joint Research Centre (JRC); 5 – Joint Research Centre (JRC), European Commission; 6 – Met Office Hadley Centre

We will present and discuss new research findings on the impacts of climate change at global warming of 1.5°C, 2°C, 3°C and 4°C, at both global scales and in selected countries. Focus impacts will include water availability, river and coastal flooding, food insecurity and human heat stress. The research is the result of a highly interdisciplinary project, the HELIX project (High-End cLimateImpact and eXtremes) finished in October 2017 and with more than 90 peer-reviewed publications.

Presenters



SP016

16:15 Tuesday

Room S6

Keywords: Paris targets, adaptation, high-end

1. Richard Betts | University of Exeter and Met Office Hadley Centre, Director of the HELIX project

2. Lamprini Papadimitriou | Cranfield Water Science Institute (CWSI), Cranfield University.

3. Michalis Vousdoukas | Joint Research Centre (JRC), European Commission | Rising coastal flood risk in Europe and worldwide

4. Luc Feyen | Joint Research Centre (JRC), European Commission | Projections of global drought and European and global river flood risk under different levels of global warming

5. Wojtek Szewczyk | Joint Research Centre (JRC), European Commission | Global economic impacts from climate change

6. Jason Lowe | Met Office Hadley Centre | UKCP18 and HELIX: tools for providing climate scenarios for policy and planning

SCIENCE SESSION

SS014



16:15 Tuesday

Room S7

Keywords: agriculture, climate screening, resilient investment opportunities, sanitation, transport, water

OC079

OC080

Climate adaptation and resilience options across risks and sectors

Chair | Gabriela Michalek | Helmholtz Centre For Environmental Research – UFZ

Summary of results from diverse case studies that explored sector-specific climate adaptation and resilience options and their barriers and drivers for implementation, and the development of tools for managing climate risks by ensuring resilient sector investments.

Drivers of climate change adaptation and barriers to its implementation in Europe

Oliver Gebhardt (Germany) 1; **Olivia Rendón** (United Kingdom) 2; **Jouni Paavola** (United Kingdom) 3

1 – Helmholtz Centre for Environmental Research – UFZ, Department of Economics; 2 – Plymouth Marine Laboratory, Sea and Society Group; 3 – University of Leeds, School of Earth and Environment

Climate change adaptation options for the European water sector

David Samuel Williams (Germany) 1; **Dmitry Kovalevsky** (Germany) 1; **Maria Manez Costa** (Germany) 1; **Bastian Klein** (Germany) 2; **Dennis Meißner** (Germany) 2; **Joaquin Andreu** (Spain) 3; **Hector Marcian-Sorribes** (Spain) 3; **Manuel Pulido-Velazquez** (Spain) 3; **Abel Solera** (Spain) 3; **Sara Suárez-Almiñana** (Spain) 3; **Marco Hartman** (Netherlands) 4

1 – Climate Service Center Germany (GERICS), Helmholtz-Zentrum Geesthacht; 2 – Bundesanstalt für Gewässerkunde (BfG); 3 – Universitat Politècnica de Valencia (UPV); 4 – HKV Lijn in Water BV (HKV)

Agricultural drought risk management in Central Europe – a survey study of Austrian crop-farmers (Cancelled)

Susanne Hanger-Kopp (Austria) 1; **Marlene Palka** (Austria) 1

1 – International Institute for Applied Systems Analysis

Enhancing resilience of Rail Baltica railway to climate change

Antti Roose (Estonia) 1; **Martin Ruul** (Estonia) 2

1 – Tartu Regional Energy Agency; 2 – Hendrikson & Ko

CRISI-ADAPT: Climate services to monitor and validate adaptation planning for early time horizons

Robert Monjo (Spain) 1; **Emma Gaitán** (Spain) 1; **Mercedes De Juan** (Spain) 2; **Josep Sanz** (Spain) 2; **Beniamino Russo** (Spain) 3; **Alberto Martín** (Spain) 4; **Marc Velasco** (Spain) 3; **Luis Torres** (Spain) 4

1 – Climate Research Foundation (FIC); 2 – Fundación Valenciaport; 3 – Aquatec; 4 – Meteogrid

Where next for Climate Screening?

Ben Smith (United Kingdom) 1; **Thomas Downing** (United Kingdom) 1

1 – Global Climate Adaptation Partnership

SCIENCE SESSION

Co-development of integrated mitigation and adaptation responses

Chair | **Russell Wise** | Council for Scientific and Industrial Research, Australia

Showcase of recent research studies that co-developed knowledge targeting integrated adaptation and decarbonisation policies, pathways and solutions, including the use of environmental systems analysis and social innovation tools.

Impacts and risks from high-end scenarios: strategies for innovative solutions

Paula Harrison (United Kingdom) 1; **Impressions Partners** (Belgium) 2

1 – Centre for Ecology & Hydrology; 2 – www.impressions-project.eu

OC081

OC082

OC083

OC084



SS015

16:15 Tuesday

Room S8

Keywords: design-thinking, innovation, knowledge exchange, Living labs, stakeholders, synergies

OC085

OC086

Living Labs in Larvik – knowledge exchange with stakeholders to improve decision making for urban development in a changing climate

Amy Oen (Norway) 1; Cathrine Eckbo (Norway) 1; Heidi Knutsen (Norway) 1; Regula Frauenfelder (Norway) 1; Christina Ekeheien (Norway) 1; Carl Harbitz (Norway) 1; Bjørn Kalsnes (Norway) 1; Marit Vasbotten (Norway) 2; Ingerid Heggelund (Norway) 2

1 – NGI; 2 – Larvik Municipality

OC087

Fostering social innovation towards carbon neutral spatial heating through policy co-design

Jenan Irshaid (Austria) 1; Junko Mochizuki (Austria) 1; Thomas Schinko (Austria) 1

1 – International Institute for Applied System Analysis

R8 Science session

OC088

Capacity building and co-creation – mainstreaming climate change adaptation of large scale infrastructure planning through environmental impact assessment

Alexandra Jiricka-Pürner (Austria) 1; Sonja Völler (Austria) 2; **Markus Leitner** (Austria) 2; Eva Margelik (Austria) 2; Thomas Wachter (Austria) 3

1 – University of Natural Resources and Life Sciences Vienna; 2 – Environment Agency Austria; 3 – Büro für Umweltplanung Dr. Wachter

OC089

Risk reduction, uncertainty and climate services: Bridging the usability gap through Living Labs

Lisa Van Well (Sweden) 1; Josefin Andersson (Sweden) 2; **Elin Ljunggren** (Sweden) 3; Miriam S. Zetterlund (Sweden) 1

1 – Swedish Geotechnical Institute; 2 – Arvika Teknik AB; 3 – Värmland County Administrative Board

OC090

Adapting the University: Co-production of knowledge through the living lab approach

Elizabeth Vander Meer (United Kingdom) 1

1 – University of Edinburgh

SCIENCE SESSION

From floods to droughts: water-related impacts of climate change

Chair | Marc Velasco | Aquatec – SUEZ Advanced Solutions

Presentation of multiple studies focused on water-related climate impacts at multiple scales, systems and sectors, including flood impacts, groundwater, water quality, transport and agricultural risk due to drought.

Climate change impacts on water quality in the Llobregat Basin, Spain

Laura Ramos-Soler (Spain) 1; **Javier Paredes-Arquiola** (Spain) 1; **Joaquín Andreu-álvarez** (Spain) 1; **Antoni Munné-Torras** (Spain) 2

1 – Instituto de Ingeniería del Agua y Medio Ambiente, Universitat Politècnica de València; 2 – Agència Catalana de l'Aigua

Hazard and risk assessment related to CSOs in bathing waters in a context of climate change

Luca Locatelli (Spain) 1; **Beniamino Russo** (Spain) 1; **Montse Martinez** (Spain) 1

1 – AQUATEC

Socio-economic potential impacts of climate change due to urban pluvial floods in Badalona (Spain). The BINGO project

Eduardo Martínez-Gomariz (Spain) 1; **Luca Locatelli** (Spain) 2; **Beniamino Russo** (Spain) 2; **Montse Martínez** (Spain) 2

1 – Cetaqua, Water Technology Centre; 2 – AQUATEC, Water Advanced Solutions

BINGO PROJECT: Impacts of climate change on water cycle's groundwater component – Tagus basin case-study

Maria Novo (Portugal) 1; **Manuel Oliveira** (Portugal) 1; **Tiago Martins** (Portugal) 1; **Maria José Henriques** (Portugal) 1

1 – LNEC

Integrated agricultural risk management to increase drought resilience: a farm level study in Austria

Marlene Palka (Austria) 1; **Susanne Hanger-Kopp** (Austria) 1

1 – International Institute for Applied Systems Analysis



SS016

16:15 Tuesday

Room S9

Keywords: droughts, environmental risks, floods, impacts, urban services, water quality

OC091

OC092

OC093

OC094

OC095

OC096

Assessing climate risks across different business sectors and industries: an investigation of methodological challenges at national scale for the UK

Swenja Surminski (United Kingdom) 1

1 – London School of Economics

SCIENCE SESSION

SS017



16:15 Tuesday

Room S10

Keywords: adaptation measures, climate risks, decision-support, infrastructure, serious games, training

Novel approaches to gaming, decision-support tools and products for adaptation

Chair | Marit Heinen | Climate Adaptation Services (CAS)

Summary of recent results on the development and application of new approaches for serious gaming, decision-support tools, products and services for climate adaptation, including assessing their relevance and efficacy in supporting learning, raising awareness and promoting action.

OC097

The Maladaptation Game – development and assessment of a tool for science-practice dialogue

Tina-Simone Neset (Sweden) 1; Sirkku Juhola (Finland) 2; Janina Käyhkö (Finland) 2; **Lotten Wiréhn** (Sweden) 1; Therese Asplund (Sweden) 1; Carlo Navarra (Sweden) 1

1 – Linköping University; 2 – Helsinki University

OC098

Playing games to understand multiple hazards and risk from climate change on interdependent infrastructure

Joseph Hagg (United Kingdom) 1; Sabine Undorf (United Kingdom) 1; Metzger Marc (United Kingdom) 1; Simon Tett (United Kingdom) 1

1 – The University of Edinburgh

OC099

The Weather Roulette: a gambling game to communicate probabilistic climate predictions

Marta Terrado (Spain) 1; Isadora Christel (Spain) 1; Dragana Bojovic (Spain) 1; Llorenç Lledó (Spain) 1; Rodrigo Manzananas (Spain) 2; Albert Soret (Spain) 1; Francisco J. Doblas-Reyes (Spain) 1

1 – Barcelona Supercomputing Center (BSC); 2 – University of Cantabria

Ensuring relevance, accessibility and credibility of decision support resources: the case of CoastAdapt

Jean Palutikof (Australia) 1; Anne Leitch (Australia) 2; David Rissik (Australia) 3; Sarah Boulter (Australia) 1; Marilee Campbell (Australia) 1; Ana Perez Vidaurre (Australia) 1; Fahim Tonmoy (Australia) 1

1 – National Climate Change Adaptation Research Facility; 2 – Griffith University; 3 – BMT

Forecasting extreme floods – 10 years of rich learning at the UK Flood Forecasting Centre

Crystal Moore (United Kingdom) 1; **Elizabeth Parkes** (United Kingdom) 2

1 – Deputy Director, Head of Flood Forecasting Centre; 2 Environment Agency

Evaluation of climate literacy training: taking action to improve urban resilience

Rachel Dunk (United Kingdom) 1; Gina Cavan (United Kingdom) 1; Jane Mork (United Kingdom) 1

1 – Manchester Metropolitan University

SCIENCE SESSION

Economic evaluation for risk management and decision support

Chair | Shouro Dasgupta | Fondazione CMCC and Università Ca' Foscari Venezia

Showcase of multiple examples of modelling and other methodological approaches to valuing economic aspects of climate risk and adaptation action, and their application, testing and analysis in prioritising climate adaptation and risk reduction measures in different vulnerable sectors.

Economic modelling and adaptation policies – challenges and results

Lehr Ulrike (Germany) 1; Ahmann Lara (Germany) 1; Flaute Markus (Germany) 1

1 – Institute for Economic Structures Research (GWS)

OC100

OC101

OC102



SS018

16:15 Tuesday

Room S11

Keywords: adaptation pathways, cost-benefit analysis, cost-effectiveness analysis, economic appraisal, economic modelling, risk-based decision-making

OC103

OC104

Practical application of a risk-based approach for droughts: experiences from the Netherlands

Femke Schasfoort (Netherlands) 1; **Marnix Van Der Vat** (Netherlands) 1; **Marjolein Mens** (Netherlands) 1; **Paul Van Den Hoek** (Netherlands) 2; **Karel Van Hussen** (Netherlands) 3; **Susanne Groot** (Netherlands) 4; **Nico Polman** (Netherlands) 5

1 – Deltares; 2 – Ministry of Infrastructure and the Environment; 3 – Ecorys; 4 – HKV Consultants; 5 – Wageningen Economic research

OC105

A Comparison of economic decision-support methods for the efficient and robust protection of the German Baltic sea coast against flooding

Thomas Van Der Pol (Germany) 1; **Jochen Hinkel** (Germany) 1; **Jan Merkens** (Germany) 2; **Leigh Macpherson** (Germany) 3

1 – Global Climate Forum; 2 – Kiel University; 3 – Siegen University

OC106

BINGO PROJECT: Selection of effective adaptation measures to weather extremes – reducing flood risk in Wuppertal, Germany

Clemens Strehl (Germany) 1; **Fabian Vollmer** (Germany) 1; **Andreas Hein** (Germany) 1; **Juliane Koti** (Germany) 1; **Marc Scheibel** (Germany) 2; **Paula Lorza** (Germany) 2; **Daniel Heinenberg** (Germany) 2; **Robert Mittelstädt** (Germany) 3; **Eduard Interwies** (Germany) 4; **Stefan Görlitz** (Germany) 4

1 – IWW Rheinisch-Westfälisches Institut für Wasserforschung gGmbH; 2 – Wupperverband; 3 – Hydrotec Ingenieurgesellschaft für Wasser und Umwelt mbH; 4 – InterSus – Sustainability Services

OC107

Economic analysis of climate change adaptation applied to the alpine skiing industry in Quebec

Laurent Da Silva (Canada) 1; **Katherine Pineault** (Canada) 1; **Patrick Grenier** (Canada) 1; **Stéphanie Bleau** (Canada) 2

1 – Ouranos; 2 – Ouranos, consortium on regional climatology and adaptation to climate change

OC108

Managing the English coast in a changing climate

Andrew Russell (United Kingdom) 1

1 – Committee on Climate Change

SCIENCE SESSION

Scenarios, pathways and impact modelling for sectoral adaptation

Chair | Laura Palomo Rios | EASME

Report on the most recent research results related to the use and application of Shared Socioeconomic Pathways (SSPs), Representative Concentration Pathways (RCPs), narratives and scenarios, along with impact modelling for the projection and assessment of sectoral climate risks.

Developing shared socioeconomic pathway (SSP) narrative extensions for climate change research in Finland's agriculture and health sectors

Timothy Carter (Finland) 1; Heikki Lehtonen (Finland) 2; Reija Ruuhela (Finland) 3; Stefan Fronzek (Finland) 1; Susanna Kankaanpää (Finland) 4; Emma Terämä (Finland) 1

1 – Finnish Environment Institute (SYKE); 2 – Natural Resources Institute Finland (Luke), Helsinki; 3 – Finnish Meteorological Institute, Helsinki; 4 – City of Helsinki, Urban Environment Division, Environmental Services

Development of assessment system on regional vulnerability regarding to climate change and its impacts

Manabu Watanabe (Japan) 1; Tomoki Ehara (Japan) 1; Yasuaki Hijioka (Japan) 2; Makoto Oba (Japan) 2; Takuya Togawa (Japan) 2; Ronald Canero Estoque (Japan) 2; Katuji Nagai (Japan) 3; Midori Kitahashi (Japan) 1

1 – E-Konzal Co. Ltd.; 2 – National Institute for Environmental Studies; 3 – Papier

Framing the application of adaptation pathways in agroforestry in Mediterranean drylands

André Vizinho (Portugal) 1; Ana Lúcia Fonseca (Portugal) 1; David Avelar (Portugal) 1; Hugo Oliveira (Portugal) 1; Leonor Sucena Paiva (Portugal) 1; Alice Nunes (Portugal) 1; Cristina Branquinho (Portugal) 1; Filipe Duarte Santos (Portugal) 1; Gil Penha-Lopes (Portugal) 1

1 – CE3C – FCUL



SS019

16:15 Tuesday

Room S13

Keywords: adaptation pathways, agriculture, power demand forecasts, power distribution networks, scenarios, water transport

OC109

OC110

OC111

OC112

Modelling the inland waterway transportation operations supported by navigation-related probabilistic forecasts under projected drier climate conditions

Dmitry Kovalevsky (Germany) 1; **María Máñez Costa** (Germany) 1; **David Williams** (Germany) 1; **Bastian Klein** (Germany) 2

1 – Climate Service Center Germany (GERICS), Helmholtz-Zentrum Geesthacht; 2 – Bundesanstalt für Gewässerkunde (BfG)

OC113

Residential energy demand in a changing climate: Portuguese case study 2050

Raquel Figueiredo (Portugal) 1; **Pedro Nunes** (Portugal) 1; **Marta Oliveira Panão** (Portugal) 1; **Miguel C. Brito** (Portugal) 1

1 – Instituto Dom Luiz (IDL), Faculdade de Ciências, Universidade de Lisboa, 1749-016 Lisboa, Portugal

OC114

Impact of climate change on power distribution networks

Paraic Ryan (Ireland) 1; **Lara Hawchar** (Ireland) 1; **Mark Stewart** (Australia) 2

1 – Department of Civil and Environmental Engineering, University College Cork, Ireland; 2 – Centre for Infrastructure Performance and Reliability, The University of Newcastle, Australia

SCIENCE SESSION

SS020



16:15 Tuesday

Room S16

Keywords: climate services, integrated assessment, local level policy, scenarios, science-policy interface, sustainability

Knowledge co-production and brokerage for climate services

Chair | Åsa Gerger Swartling | Stockholm Environment Institute

Presentation of multiple case studies, research projects and experiences in co-production and knowledge brokering for the development of climate services and adaptation action across sectors and scales, including analysis of the current landscape and key challenges.

OC115

Key competencies for knowledge innovation towards sustainability transformations – meeting systemic challenges within the science-policy interface

Luis Pinto (Denmark) 1

1 – University of Westminster and European Environment Agency

The Swiss National Centre for Climate Services (NCCS): serving as a network agent and knowledge broker for climate services

Angela Michiko Hama (Switzerland) 1; Mischa Croci-Maspoli (Switzerland) 1; Andreas Fischer (Switzerland) 1; Elias Zubler (Switzerland) 1

1 – Federal Office of Meteorology and Climatology MeteoSwiss, Zurich, Switzerland

OC116

Mapping the landscape of climate services: A network approach

Francesca Larosa (Italy) 1; Jaroslav Mysiak (Italy) 1

1 – Euro-Mediterranean Center on Climate Change (CMCC)

OC117

CLIM2POWER Project – co-developing a climate service for the European power system

Sofia G. Simoes (Portugal) 1; Edi Assoumou (France) 3; Filipa Amorim (Portugal) 1; Tim O'Higgins (Ireland) 2; Gildas Siggini (France) 3; Kristina Fröhlich (Germany) 4; Jennifer Ostermüller (Germany) 4; Yves-Marie Saint-Drenan (France) 5; Benoît Gschwind (France) 5; Hubert Holzmann (Austria) 6; Matthew Hernegger (Austria) 6; Johann Baumgartner (Austria) 7; Stefan Hoeltinger (Austria) 7; Christian Mikovits (Austria) 7; Kathryn Kopke (Ireland) 2; Anna Krook-Riekkola (Sweden) 8; Åsa Lindman (Sweden) 8; Sílvia Carvalho (Portugal) 9; Pedro Beça (Portugal) 10; Babar Mutjaba (Portugal) 10; Paulo Diogo (Portugal) 10; Júlia Seixas (Portugal) 1; Pierre Strosser (France) 11; Pedro Paes (Portugal) 12; Tarik Berrada (Austria) 13; Johannes Schmidt (Austria) 7

1 – CENSE – NOVA School of Science and Technology of NOVA University Lisbon; 2 – MAREI-University College Cork; 3 – CMA – Mines ParisTech; 4 – DWD – Deutscher Wetterdienst; 5 – OIE – Mines ParisTech; 6 – IWHW – BOKU; 7 – DSS – BOKU; 8 – Luleå Technical University; 9 – Science College of Lisbon University; 10 – NOVA School of Science and Technology of NOVA University Lisbon; 11 – ACTEON; 12 – EDP; 13 – Wien Energie

OC118

Developing protocol-based storylines of future European agriculture to support climate change impact and adaptation research

Hermine Mitter (Austria) 1; Anja Techen (Germany) 2; Franz Sinabell (Austria) 3; Katharina Helming (Germany) 2; Benjamin Bodirsky (Germany) 4; Ian Holman (United Kingdom) 5; Kasper Kok (Netherlands) 6; Heikki Lehtonen (Finland) 7; Adrian Leip (Italy) 8; Chantal Le Mouel (France) 9; Hermann Lotze-Campen (Germany) 4; Erik Mathijs (Belgium) 10; Bano Mehdi (Austria) 1; Melania Michetti (Italy) 11; Klaus Mittenzwei (Norway) 12; Oliver Mora (France) 9; Lilian Oygarden (Norway) 12; Jörg Priess (Germany) 13; Pyatrik Reidsma (Netherlands) 6; Rüdiger Schaldach (Germany) 14; Erwin Schmid (Austria) 1; Heidi Webber (Germany) 2; Martin Schönhart (Austria) 1

OC119

OC120

1 – University of Natural Resources and Life Sciences, Vienna; 2 – Leibniz Centre for Agricultural Landscape Research, ZALF, Landscape Research Synthesis; 3 – Austrian Institute of Economic Research, WIFO; 4 – Potsdam Institute for Climate Impact Research, PIK; 5 – Cranfield University; 6 – Wageningen University and Research; 7 – Natural Resources Institute Finland, LUKE; 8 – European Commission, Joint Research Centre, Directorate for Sustainable Resources; 9 – Institut national de la recherche agronomique; 10 – University of Leuven, KU Leuven; 11 – Centro Euro-Mediterraneo sui Cambiamenti Climatici, CMCC; 12 – Norwegian Institute of Bioeconomy Research, NIBIO; 13 – Helmholtz-Center for Environmental Research, UFZ; 14 – University Kassel

A critical systematization of the role of knowledge brokerage in climate change adaptation processes in Portugal

João Mourato (Portugal) 1; Alexandra Bussler (Portugal) 1; Claudia Santos (Portugal) 1

1 – ICS – Institute of Social Sciences – University of Lisbon

TOOL-SHED SESSION

TS008



16:15 Tuesday

Room S15

Keywords: exposure, sensitivity, adaptive capacity, cross-country skiing, elderly people

Assessment of vulnerability to climate change employing regional indicators in an interactive mapping tool for Finland

Stefan Fronzek (Finland) 1; Timothy R. Carter (Finland) 1

1 – Finnish Environment Institute

We demonstrate an online tool for climate change impacts, adaptation and vulnerability that is designed to help users explore different aspects of vulnerability to climate change in Finland. It was developed at the Finnish Environment Institute (SYKE). The following thematic areas are currently represented:

- vulnerability to climate change among the elderly population (Carter *et al.* 2016);
- vulnerability of cross-country skiing activities (Neuvonen *et al.* 2015).

With the tool users can examine how vulnerable cross-country skiing or elderly people are to the impacts of climate change in different parts of Finland. Based on the user's selection of indicators, a first map shows the areas where the chosen sector or social group is exposed to the climate change hazard. A second map describes factors that contribute to adaptive capacity for responding to the potential impacts. A third map is then calculated as combined index of these, defined as the vulnerability to the impacts. Here, while researchers have compiled data on indicators that can be accessed in the mapping tool, the onus is on the users of the tool to decide which indicators are of interest and whether to map them individually or as combined indices.

Web address: <http://climateguide.fi/en/datat/sopeutumiskyky-ja-haavoittuvuus>

TOOL-SHED SESSION

Exploring your city's risk interdependencies with the Risk Systemicity Questionnaire

Vasileos Latinos (Greece) 1

1 – ICLEI Local Governments for Sustainability

This session will explore a digital tool supporting the phase of risk and vulnerability assessment, as part of an integrated approach to planning and implementing an adaptation strategy.

Using the Risk Systemicity Questionnaire, you can explore risk scenarios and prioritise corresponding actions, to aid a preliminary, qualitative risk assessment and prompt discussion among groups with diverse areas of expertise. After completing questions about the likelihood of a series of defined risk scenarios (clustered under ten topic areas, including extreme weather events, but also critical infrastructure, health and social inequalities), users receive a list of risk mitigation actions for each scenario, including interrelations with other risks and their cascading effects.

This session will begin with a brief introduction to risk assessment as part of an integrated approach to adaptation planning. The tool will then be presented and its capabilities outlined. Participants will then be taken through an exercise based on the scenarios within one of the 10 available risk topics. The session will conclude with a discussion of the results and the opportunities and limitations of applying the tool in practice.

Web address: <http://smr-project.eu/tools/risk-systemicity-questionnaire/>



TS009

16:30 Tuesday

Room S15

Keywords: decision support tools, integrated planning and implementation, risk assessment, vulnerability

Wednesday 29 May

Adapting businesses to climate change – risks and opportunities

Businesses are at serious risk, as the changes that climate change is posing has completely changed the environment in which companies operate on a daily basis. Nevertheless, if these risks are managed properly, they can be turned into opportunities, generating new services or even new markets where only the ones who adapt to climate change will be present. The need for adaptation and the future opportunities can be tackled from different points of view.

Speakers

Cláudia Coelho

Cláudia Coelho is currently a Director of the Assurance – Sustainable Business Services line of PwC Portugal. She has a degree in Environmental Engineering from IST, a postgraduate degree in Environmental Management Systems and AESE's Business Management Program. She has professional experience in the industry and as a consultant in the areas of environmental and sustainability, and has coordinated several sustainability projects in strategic areas, climate change, involvement with stakeholders, reporting and assurance of sustainability information and circular economy, among others.

Alexandre Relvas Jr.

Alexandre Relvas is a 5th generation farmer, studying Viticulture and Winemaking at Institute Rural de Vayres in Bordeaux. During his time in Bordeaux, Alexandre worked in the Château Gaudichaud experimental cellar, very close to Novozymes and Laffort, studying the launch of their new wine making products. He joined his family company, Casa Relvas, in 2006 as winemaker at Herdade Sao Miguel cellar. Casa Relvas covers 250ha of vineyards, 300ha of olive groves and 700ha of forest. As one of the main Alentejo private wine producers, Casa Relvas produces 6 million bottles annually which are exported to more than 35 countries.

Business plenary

09:00–10:45

Grande Auditório

Director, PwC Portugal



General Manager, Casa Relvas



**President of the
International Water
Association**



Diane D'Arras

Diane D'Arras has been the non-executive President of the International Water Association since October 2016. She has been a member of the Technology Academy of France since 2014. Before retiring in 2018, Diane was Suez Water Western Europe Senior Executive V.P., having previously implemented a broad innovation strategy for the Suez group, developing a wide research network and an investment foundation, as well as day-to-day technical support to Suez operations. Diane was a founder and first President of the European Water Supply and Sanitation Technology Platform, and Member of the consulting Committee for the Europeans 7th research program on Environment

**Corporate Water
Program Manager for
Microsoft**



Paul Fleming

Paul Fleming is the Corporate Water Program Manager for Microsoft where he is responsible for developing and implementing the company's water stewardship strategy. Prior to joining Microsoft, Paul directed the Climate Resiliency Group for the Seattle Public Utilities, focusing on building partnerships between research groups and utilities to build capacity to assess and prepare for the impacts of climate change.

**Director, Executive
Agency for Small
and Medium-sized
Enterprises (EASME),
European Commission**



Julien Guerrier

Julien Guerrier's work at the European Commission focuses on industrial policy, international trade negotiations and corporate management issues in DG Enterprise (currently DG GROW) and Secretariat General. As a representative of the Commission, he also managed the EU-Japan Centre for Industrial Cooperation in Tokyo. Before joining the Commission, he was at the French Ministry of Public Works and participated in an exchange of officials with the Japanese administration.

**Chief Executive Officer,
EIT Climate-KIC**



Kirsten Dunlop

Kirsten's career spans academia, consulting, banking, insurance, strategy, design, innovation and leadership, across three continents. She joined Climate-KIC in February 2017 from an Australian financial services conglomerate, Suncorp. She is committed to shaping and placing innovation to catalyse profound systemic change. Her vision for Climate-KIC is to co-create a multi-sided marketplace for transformation, and the generation of innovation options to achieve a zero-carbon economy and a climate resilient society. Kirsten holds a Ph.D. in cultural history.

SCIENCE PRACTICE SESSION

Infrastructure adaptation: preparing the energy sector for a changing climate

Hans-Martin Füssel (Denmark) 1; **Lisa Danielson** (France) 2; **Ross Lowrie** (United Kingdom) 5; **Ana Santos** (Portugal) 4; **Sarah Duff** (United Kingdom) 3

1 – European Environment Agency; 2 – OECD; 3 – EBRD; 4 – EDP Energias de Portugal; 5 – Environment Agency (England)

The energy system is susceptible to weather and climate conditions. It is exposed to extreme weather events, including storms and floods, and to long-term shifts in temperature, precipitation patterns and wind. Climate change can affect all components of the energy system. Hydropower, thermal, wind and solar power generation as well as biofuel production are sensitive to changes in temperature, water availability, wind and cloud conditions. Electricity transmission and distribution systems will also be affected by a changing climate, as patterns of demand change and reliability of supply is threatened by the impacts of extreme weather events.

At the same time, Europe is transforming its energy system with a view of radically decreasing carbon emissions and other pollutants, while ensuring a safe and affordable energy supply for all. This clean energy transition implies a shift in the composition of the energy mix, with much greater role for renewables. It involves substantial investments in long-lived infrastructure, which is sensitive to climate variability and change.

Faced with uncertainty about future policies, technologies and climate impacts, what are the main challenges for adaptation in the European energy sector? How can planners, investors, regulators and operators of energy infrastructure take climate change into account? How can tools such as climate risk disclosure be used to facilitate investment in climate-resilient infrastructure? What opportunities exist for companies that can provide a climate-resilient electricity supply and exploit market shifts driven by climate change?

Presenters

1. Hans-Martin Füssel | European Environment Agency, Copenhagen, Denmark | Adaptation challenges and opportunities for the European energy system

2. Lisa Danielson | Organisation for Economic Co-operation and Development, Paris, France | Policy levers for resilient infrastructure: a global perspective

3. Sarah Duff | European Bank for Reconstruction and Development, London, UK | Financing for a resilient energy system

START OF SESSION



SP017

11:15 Wednesday

Grande Auditório

Keywords: infrastructure, energy, resilience, policy, uncertainty

4. Ross Lowrie | Environment Agency (England), Rotherham, United Kingdom | Energy Infrastructure – shining a light on climate change adaptation

5. Ana Santos | EDP Energias de Portugal, Lisbon, Portugal | Barriers and opportunities for a climate-resilient energy utility: the example of EDP

SCIENCE PRACTICE SESSION

SP018



11:15 Wednesday

Room S1

Keywords: institutional strengthening, cooperation and collaboration, climate change adaptation, disaster risk reduction

Supporting and further strengthening institutional coordination between and capacities of CCA and DRR communities – recommendations and ways forward

Anna Schmidt (Austria) 1; **Markus Leitner** (Austria) 1; **Tiago Capela Lourenço** (Portugal) 3; **Reimund Schwarze** (Germany) 2; **Oleksandr Sushchenko** (Germany) 2; **Bettina Koelle** (South Africa) 4; **Sukaina Bharwani** (United Kingdom) 5; **Julia Barrott** (United Kingdom) 5; **Peter Walton** (United Kingdom) 6

1 – Environment Agency Austria; 2 – Helmholtz Centre for Environmental Research, Leipzig; 3 – University of Lisbon, Centre for Ecology, Evolution and Environmental Changes; 4 – Red Cross Red Crescent Climate Centre; 5 – Stockholm Environment Institute; 6 – University of Oxford

Integration, cooperation and collaboration between institutions working on Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) are crucial for using capacities efficiently in both fields. Such efforts are also expected to support streamlining the Paris Agreement, the 2030 Agenda for Sustainable Development and the Sendai Framework.

This session is convened by the H2020 PLACARD project and aims at supporting and boosting efforts to strengthen institutional cooperation across both communities and thus to support integration and mainstreaming of CCA & DRR into policy, institutional arrangements and practice. Recent analysis and examples show that there is a definite potential for enhanced cohesion between DRR and CCA in European countries. This can be achieved through interoperability between policy levels (EU and national), and combining top-down and bottom-up approaches.

In particular, mainstreaming of commonly used CCA methods and practices into DRR and vice-versa is seen as a potential approach to use synergies and break existing silos. For example, CCA can feed into national disaster risk reduction strategies and thus substantially increase the number of countries with disaster risk reduction strategies by 2020, as stated in the goals of the Sendai Framework. Additionally, more emphasis should be placed on considering climate trends in National Risk Assessments for all members of the EU Civil Protection Mechanism (EUCPM). Climate projections and scenarios could be considered during risk analyses.

The outcomes of these analyses towards reducing the risks associated with climate and climate extremes feed back into CCA policy processes.

Building on PLACARD recent work in this field, the session will guide interested actors on how they can take advantage of the synergies between CCA and DRR in order to further strengthen institutional cooperation, their networks and their respective capacities in their efforts to reduce impacts of extreme events triggered by climate change.

The objective of the session is not only to discuss new relevant knowledge about CCA and DRR integration in research, policies and practices, but also to discuss recommendations that go beyond the PLACARD project's lifetime, such as those involving the exploration, development and use of innovative climate risk and foresight methods, and institutional cross-fertilization between CCA and DRR.

Presenters

Markus Leitner | EAA, Austria

Anna Schmidt | EAA, Austria

Reimund Schwarze and **Oleksandr Sushchenko** | Helmholtz-Centre for Environmental Research, Germany

Bettina Koelle | Red Cross Red Crescent Climate Centre

Sukaina Bharwani and **Julia Barrott** | Stockholm Environment Institute

Peter Walton | University of Oxford

SCIENCE PRACTICE SESSION

Adaptation decision-making for uncertain futures: practical application of scenarios

Ruth Monfries (United Kingdom) 1; **Anne Marte Bergseng** (United Kingdom) 1

1 – ClimateXChange

Planning for uncertain futures is a major challenge for policymakers and decision makers in climate change adaptation. The range of unknowns includes future emissions trajectories, climate change impacts, and socio-economic conditions. Knowledge providers often allow for these unknowns by considering a range of scenarios that decision makers may have to account for in their adaptation planning

This interactive session will:

- present examples of how scenarios have been applied in decision making and the lessons learnt from the processes;



SP025

11:15 Wednesday

Room S2

Keywords: uncertainty, scenario, decision-making, scale

- share learning from their research and experience; and
- discuss and distil a set of main messages around practical use, limitations of and alternatives beyond scenarios in adaptation decision making.

Participants will discuss the benefits and limitations of scenario planning as a tool, and how to make best use of these lessons in work with different stakeholders and at different scales.

Scenarios may be produced by external specialists, such as the Representative Concentration Pathways (RCPs) adopted by the IPCC AR5, or may be built by stakeholders working together in participatory scenario planning. A combination of both model-led scenarios (such as the SSPs and RCPs) and participatory approaches is also common. For example, with the multiscale scenario methodology, which involves ‘nesting’ sub-global scenario in global scenarios.

The session will explore ways to successfully apply scenarios, considering ways to extract actionable information from the wealth of data available, and apply it to individual situations avoiding either:

- ‘Paralysis by analysis’ – where action is delayed, or not undertaken because of a perceived need for more evidence;
- Maladaptation – where inappropriate, insufficient or sub-optimal action is taken due to insufficient knowledge.

To accommodate a range of possibilities in their decisions, and integrate knowledge generated from model-led scenarios with other knowledge sources, institutions may have to adopt new ways of working. Solutions providing a means to move forward while faced with a range of possibilities may include the use of flexible adaptation pathways, iterative processes, and incremental steps.

Alternative adaptation options can be tested and compared against multiple scenarios. Further topics for discussion include issues around scale; international and national policy, accounting for specific local conditions; the interconnections across scales and sectors, and evaluating the relevance and effectiveness of scenarios in subsequent decision-making.

The discussions will be summarised in a report for researchers, practitioners and policy makers.

Presenters

1. Ruth Monfries | Royal Botanic Gardens Edinburgh | **Anne Marte Bergseng** | ClimateXChange, UK | Adaptation planning challenges in local development

2. Simona Pedde | Wageningen University, NL and CEH, UK | **Elizabeth Clarke** | University of Edinburgh, UK, KIT – Germany and University of Edinburgh, UK | **Emma Terama** | SYKE – Finland | Developing multiscale scenarios

3. Matt Aitkenhead | **Kerry Waylen** | The James Hutton Institute, UK | Exploring scenarios in research planning

4. Rohan Hamden and Karl Mallon | XDI Cross Dependency Initiative, Australia | Identifying collaborative adaptation options

5. Kasper Kok and Nienke Ansems | Wageningen University & Research, NL | **Simona Pedde** | Wageningen University, NL and CEH, UK | Tools to make climate scenarios more accessible

6. James Butler and Erin Bohensky | CSIRO Land & Water, Australia | Identifying collaborative adaptation options

SCIENCE PRACTICE SESSION

User expectations for a european climate prediction system

Sebastian Bathiany (Germany) 1; Jens Hesselbjerg Christensen (Denmark) 2; **Jaroslav Mysiak** (Italy) 4; Claas Teichmann (Germany) 1; Dominic Matte (Denmark) 2; Dragana Bojovic (Spain) 3

1 – Climate Service Center Germany (GERICS), Helmholtz-Zentrum Geesthacht (HZG); 2 – University of Copenhagen; 3 – Barcelona Supercomputing Center; 4 – Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC)

This session will bring together climate modellers and societal stakeholders to discuss potential applications of seamless climate predictions in Europe on time scales from 1–40 years. The discussion will focus on key issues related to an optimal participative approach between policy-makers, practitioners and climate experts as part of the H2020-funded European Climate Prediction System (EUCP) project. One of the major key issues is the development of a climate service that will directly benefit the users by offering a seamless and robust climate information with clear and comprehensive documentation of uncertainties. This session will discuss:

- the involvement of the users in the process,
- the variables or the climate indicators that should be provided,
- how uncertainties can be quantified and correctly communicated to users in order to provide consistent, authoritative and actionable climate information,
- how we can address the major barriers to use of climate prediction through the process of the service co-production by scientists and users.

Presenters

Jason Lowe | Scientific Coordinator of EUCP (UK MetOffice) | Benefits from a European Climate Prediction system

Francisco Doblas-Reyes | Director Earth Sciences (BSC) | The added value of user-driven climate predictions



SP019

11:15 Wednesday

Room S5

Keywords: climate change information, knowledge transfer, participative approach

Erik Kjellström | Professor in climatology (SMHI) | A new set of high-resolution simulations for Europe and their potential applications

Albrecht Weerts | Data – model integration (Deltares) | Future risks of hydro-meteorological extremes

Bart van den Hurk | Professor of Climate Interactions with the Socio-Ecological System (VU Amsterdam) | Examples for ‘data reduction’ climate services

Jarolav Mysiak | Director Risk assessment and adaptation strategies (CMCC) | The value of climate predictions for downstream climate services

SCIENCE PRACTICE SESSION

SP020



11:15 Wednesday

Room S6

Keywords: national adaptation strategies, national adaptation plans, learning, mainstreaming, implementation

National Adaptation Strategies and Plans: sharing experiences and discussing actual challenges opportunities

Kim Van Nieuwaal (Netherlands) 1; Roger Street (United Kingdom) 2

1 – Climate Adaptation Services; 2 – Environmental Change Institute, University of Oxford

Countries all over the world are currently working on their National Adaptation Strategy (NAS) / Plan (NAP). The European Commission for instance has asked the member states to deliver one by 2017. Approaches, experiences, and lessons learnt will – by definition – vary per country, yet there is above all a lot to learn from each other, as those working on NAS/NAP generally acknowledge. Not only should reinventing the wheel be avoided, the field of climate adaptation shows a strong need for mutual learning and opportunities to inspire each other through the latest experiences and lessons learnt. This is what this session is about.

Three national cases will be presented, each from a specific angle. Firstly, the Dutch National Adaptation Strategy will go into the challenges of multilevel governance. How to implement a national strategy locally and regionally? What are the major challenges in that respect? What is the role of national knowledge infrastructure and research programming for instance and how to enhance that? Secondly, the Austrian case highlights some of the next steps taken implementing NAS, also in the light of the monitoring, evaluation, and revision cycle. Thirdly, the case from Japan will put the NAS in a context completely different than that of Europe, for instance with regard to the extreme weather events – and disasters even – that strike the Asian continent. What can we learn from each other in dealing with these different circumstances for instance? A comparative presentation will take the perspective of setting priorities to compare efforts that are being used to inform NAS / NAP. The session will kick-off with two short presentations by DGClimate and EEA, shedding some light on the latest developments that are relevant to NAS/NAP from a European perspective.

Presenters

1. **Kim van Nieuwaal** | Climate Adaptation Services | Introduction

2. **Liviu Stirbat** | **Manuel Carmona Yebra** | DG Climate Action, European Commission | NAS in EU: ambitions of EC

3. **André Jol** | EEA | European NAS landscape

4. **Stef Meijs** | Ministry of Infrastructure and Water Management | **Kim van Nieuwaal** | Climate Adaptation Services | **Jeroen van Leuken** | RIVM | **Gerald Jan Ellen** | Deltares | From NAS to local action: the Dutch approach

5. **Daniel Buschmann** | **Markus Leitner** | Umweltbundesamt | Explore it! Experience, lessons learned and the way forward in Austrian NAS and NAP

6. **Yasuaki Hijioka** | **Yoshimi Fukumura** | NIES | A way to establish national adaptation strategy – the case of Japan

7. **Roger Street** | University of Oxford | Setting priorities for National Adaptation Strategies

8. **Roger Street** | **Kim van Nieuwaal** | Discussion – what can Europe learn from NAS processes elsewhere, and vice versa? What could be possible follow-ups to this session?

SCIENCE PRACTICE SESSION

The Copernicus Climate Change Service (C3S) and its role in supporting climate change adaptation and downstream service development

Carlo Buontempo (United Kingdom) 1; **Samuel Almond** (United Kingdom) 1

1 – Copernicus Climate Change Service (C3S) / ECMWF

The Copernicus Climate Change Service (C3S) is being implemented by ECMWF on behalf of the European Union. The Climate Data Store (CDS) is the nucleus of the C3S offering and is a standardised entry-point to a huge wealth of geographically distributed, quality controlled climate data which allows for the development of tailored applications and services on a cloud-based computational platform. By making climate information freely available to users, C3S supports the United Nations' Sustainable Development Goals (SDGs), forms the operational response to the Global Climate Observing System's (GCOS) requirements, and is an important resource to the Global Framework for Climate Services (GFCS).



SP021

11:15 Wednesday

Room S7

Keywords: Copernicus, climate services, sectoral information, toolbox, data store

The Sectoral Information System (SIS) component of C3S transforms the climate data contained in the CDS and tailors it to the requirements of users, with a specific focus on intermediaries and policy makers. In line with our delegation agreement with the EC, C3S have engaged with various sectors and showed how the CDS infrastructures could be used to address the needs of users operating in water management, agriculture & forestry, tourism, insurance, energy, health and coastal areas. Further activities to address the requirements from transport, infrastructure, disaster risk reduction and biodiversity sectors have commenced in late 2018 / early 2019.

Arguably the most important function of the SIS is to demonstrate how C3S infrastructure can be used to develop climate services to address sector specific user needs and requirements.

The SIS will be developed to a very high standard, underpinned by scientific rigor, and should be considered a benchmark of good practice. Increasing the quality and robustness of the procedures that underpin the services (methodology, workflows, metadata etc.), the documentation (FAQs, documentation, training, etc.) and the user-support (service desk, response to feedbacks, service evolution) represents one of the top priorities of the next phase up to 2020 and will be supported by an Evaluation and Quality Control (EQC) activity that will independently assess the fitness for purpose of all SIS output, including demonstrators, against scientific best practice, computational efficiency and user requirements.

After the successful proof of concept phase the demonstrative applications developed within the SIS are now becoming operational. This session will introduce the key elements of the C3S service; The Climate Data Store, Toolbox, Sectoral Information System and Evaluation and Quality Control (EQC) activities. Using the case studies developed within the SIS contracts this session will showcase how C3S users can take advantage of the Copernicus open data policy to access climate data and use the tools and workflows available within the CDS Toolbox to develop tailored climate services.

Presenters

1. **Carlo Buontempo** | **Samuel Almond** | ECMWF / C3S | Introduction to the Copernicus Climate Change Service and the Sectoral Information System

2. **Clare Goodess** | University of East Anglia, UK | C3S Energy Service

3. **Martin Williams** | JBA Consulting | C3S Coastal Service

4. **Siân O'Hara** | Telespazio Vega UK | **Francisco J. Doblas-Reyes** | Barcelona Super Computer Center | The C3S Evaluation and quality control function

5. **Ghislain Dubois** | Tourisme Transport Territoires Environment Conseil | C3S European Tourism Service

6. **Julie Berckmans** | VITO | C3S Health Service

SCIENCE PRACTICE SESSION

The water–energy–land nexus under climate change: from adaptation and mitigation case studies to services, products and implementation challenges

Roger Cremades (Germany) 1; Ebum Akinsete (Greece) 2; Phoebe Koundouri (Greece) 2; Louisa Jane Di Felice (Spain) 3; Maddalena Ripa (Spain) 3; Mario Giampietro (Spain) 3; Nicu Constantin Tudose (Romania) 4; Mirabella Marin (Romania) 4; Serban Octavian Davidescu (Romania) 4; Cezar Ungurean (Romania) 4; Hermine Mitter (Austria) 5; Katrin Karner (Austria) 5; Erwin Schmid (Austria) 5; Muhamad Bahri (Germany) 1; Sorin Cheval (Romania) 6; Floor Brouwer (Netherlands) 7; Maïté Fournier (France) 8; Georgios Avgerinopoulos (Sweden) 9; Eunice Ramos (Sweden) 9; Janez Susnik (Netherlands) 10; Anabel Sànchez (Spain) 11; Annelies Broekman (Spain) 11; Diana Pascual (Spain) 11; Iñaki Torres Cobián (Spain) 11; Eduard Pla (Spain) 11; Tabea Lissner (Germany) 12

1 – Climate Service Center Germany, GERICS; 2 – International Centre for Research on the Environment and the Economy (ICRE8); 3 – Universitat Autònoma de Barcelona; 4 – National Research and Development Institute in Forestry ‘Marin Dracea’ – INCDS, Romania; 5 – University of Natural Resources and Life Sciences Vienna – BOKU; 6 – Henri Coandă Air Force Academy; 7 – Wageningen Economic Research; 8 – ACTeon Environment Research & Consultancy, Office of Grenoble; 9 – Royal Institute of Technology in Stockholm – KTH; 10 – IHE Delft Institute for Water Education; 11 – Centre for Ecological Research and Forestry Applications – CREAF; 12 – Climate Analytics

The overall goals of the session are to provide cases with examples of transferring state-of-the-art understanding of the water-energy-land-food- nexus into the implementation of good practice in climate change adaptation, and to discuss challenges specific to diverse regional contexts while providing a global summarizing view and a debate about pending questions.

The topic of the session is the water-energy-land-food nexus and its implications for climate change adaptation at different scales (city, landscape, river basin, region, country, Europe) in a diversity of economic sectors and European (Romania, Spain, Austria...) and global areas under diverse climate impacts.

There is a number of pending questions about how to apply the nexus to case studies and how to best provide advice to policy makers, we will explore these and others related to resource security and how to implement the nexus in practice. This is crucial because decisions about adaptation to climate change involve potential trade-offs, e.g. in the agricultural and urban sectors these trade-offs might involve increased Greenhouse Gas emissions.



SP022

11:15 Wednesday

Room S8

Keywords: co-benefits between adaptation and mitigation, integrated methods, policy and practice interfaces, climate services, economic sectoral planning

The session will explore how to capture, and increase the potential to realise, co-benefits across societal objectives represented by the SDGs and the elements of the water-energy-land-food nexus under climate change, and how to avoid trade-offs that may compromise sustainable futures.

The session summarizes adaptation- and nexus-related content from the projects CLISWELN (ERA4CS), MAGIC (H2020), DAFNE (H2020), and SIM4NEXUS (H2020). The 8 contributions come from 26 authors from 12 European research institutions and consultancy businesses. The session has gender parity in the list presenting authors.

Presenters

1. Roger Cremades | GERICS (Germany) | Climate Services and the water-energy-land nexus: if we fail on one, we will fail on the other?

2. Hermine Mitter | BOKU (Austria) | Integrated assessment of agricultural adaptation to climate change in a water-constrained region in Austria

3. Ebun Akinsete | ICRE8 (Greece) | Water-energy-food issues in the Zambezi river basin

4. Nicu Constantin Tudose | Henri Coandă Air Force Academy (Romania) | Identifying gaps on knowledge and methods in the intersection between climate services and nexus studies

5. Tabea Lissner | Climate Analytics (Germany) | Building resilient energy services systems: synergies and trade-offs between mitigation, adaptation and achieving the SDGs

6. Maddalena Ripa | Universitat Autònoma de Barcelona (Spain) | A biophysical view of pathways to decarbonisation

7. Mirabella Marin | INCDS (Romania) | Forest management to decrease energy consumption for urban water supply in a mixed groundwater and surface water system

8. Floor Brouwer | Wageningen Economic Research (the Netherlands) | The Nexus concept for a resource efficient Europe; co-benefits of climate mitigation and adaptation measures

9. Muhamad Bahri | GERICS (Germany) | The system dynamics of the nexus in the tourism sector

10. Elisabeth Viktor | GERICS (Germany) | The GERICS Regional Modelling Toolkit: Towards an integrative modelling approach for science-based decisions to create cross-sectoral, regional climate adaptation

SCIENCE PRACTICE SESSION

Adaptation pathways – from trailblazing to trail guide: Learning from practical implementation of adaptation pathways approach and shaping a guide/standard

Andrew Eden (United Kingdom) 1; Katy Francis (United Kingdom) 2; Tim Reeder (United Kingdom) 3; **Marjolijn Hassnoot** (Netherlands) 4

1 – Environment Agency, England; 2 – Environment Agency; 3 – TRIOSS / London Climate Change Partnership; 4 – Deltares

Adaptation Pathways planning was devised as an approach to planning and decision-making under conditions of uncertainty; rather than using a singular ‘preferred’ pathway or a ‘most-likely’ scenario an AP approach encourages planners to explore option robustness across multiple plausible futures, and to identify tipping and trigger points (Bosomworth *et al.*, 2017).

Originally developed in the context of planning and decision making for sea level rise and flood risk management and protection, the pathways approach is now also being practically applied to other areas of uncertain decision making such as wildfires, healthcare and natural systems management.

This session will run as an adaptation pathways masterclass, with a participatory world café element to seek delegates’ experiences and input on future developments of the approach. Building on the implementation of the approach since it was first devised in 2005 this session seeks to share learning on how the approach has been used, the tools developed to support its use and what the challenges and opportunities for improvement are.

The session aims to:

- Provide a basic overview of what the adaptation pathways approach is.
- Share learning on how the adaptation pathways approach has been implemented in different long term planning contexts (not just flood risk management) and what the limitations and opportunities for improvements are. This will focus on practical implementation case studies from London, UK; Netherlands, France.
- Explore what tools have been developed; and the pros/cons/limitations and learning points arising from practical on the ground implementation of the pathways approach.
- Explore what current, and potential, users would like from an adaptation pathways standard or guide such as that being developed for BSI (British Standards Institution).



SP023

11:15 Wednesday

Room S9

Keywords: uncertainty, decision making, adaptive management

The expected outputs of the session will include:

- A paper summarising the session to share with workshop participants and beyond.
- User input to BSI standard development, opportunities to test the BSI standard, and invigoration of the adaptation pathways interest group that arose from ECCA 2017.

Presenters

1. Tim Reeder | Trioss/London Climate Change Partnership, UK | Development of BSI (UK business standards body) on decision making for climate change adaptation

2. Katy Francis | Environment Agency Thames Estuary 2100 Team, UK | London | University of Southampton, UK | E-Rise: Earliest detection of sea level risk accelerations to inform lead time to upgrade/replace coastal flood defence infrastructure

3. Marjolijn Haasnoot | Deltares Netherlands

SCIENCE PRACTICE SESSION

SP024



11:15 Wednesday

Room S10

Keywords: exploitation, synergies, research and innovation

Exploitation in CCA & DRR – clustering and discussion

Rita Andrade (Portugal) 2; Marco Hartman (Netherlands) 1; Elena Lopez-Gunn (Spain) 3; Marta Rica (Spain) 3; Andrea Geyer-Scholz (Austria) 4; Jolijn Van Engelenburg (Netherlands) 5; Erik Van Slobbe (Netherlands) 6; Petra Hellegers (Netherlands) 6

1 – BRIGAID project; 2 – BINGO project; 3 – NAIAD project; 4 – CLARITY project; 5 – VITENS; 6 – Water Systems and Global Change Group, Wageningen University & Research

Research and innovation in Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) is a growing field, with an increasingly number of projects dedicated to understanding the impacts of climate change and developing solutions to either adapt to or mitigate these impacts. However, one of the most demanding challenges in research and innovation in these (and many other) areas is ensuring the sustainability of the results after the projects' completion.

How can we extract as much value (ideas, methodologies, products, services) from these results as possible? How to make them self-sustaining? Can they be monetised, further developed, used in other research? How do we reach the end-users?

Exploitation strategies aim to answer these questions by defining the results which are truly exploitable, and not specific for the context of the project itself.

This means identifying and clustering target audiences and their needs and designing structured action plans that involve transforming the results into outputs adapted to the audience it is aimed for (guidelines, workshops, technical factsheets, portfolio, business plan, etc) and disseminating them through the appropriate channels.

Consequently, the exploitation has taken a significant position in research and innovation, as investments on such projects aim to maximise and proliferate the value created through the work developed.

Establishing synergies between researchers and other stakeholders is crucial, not only to be aware of the exploitation strategies of other projects and how they can be of use to different projects, but also to understand how one project's results can be complemented with another project's results.

This session aims to put together projects in a clustering and discussion space where different results are clustered and exploitation strategies discussed.

The objective is to present both achieved and desired results and the strategies for the exploitation of such results from projects which have similar topics in CCA & DRR. Through these presentations, synergies in exploitation could be discussed and established and the visibility of a CCA & DRR landscape ignited.

The expected outcomes are:

- To recognise and raise awareness of existing and planned results among the public;
- To create new synergies between the projects and the audience, (i.e. among investors, companies, SMEs, policy makers, decision makers, researchers);
- To encourage public and collective reflection on a pertinence of results for the end-users;
- To discuss exploitation strategies and their approaches in sustainability (scalability, replication, adapting and replication to other projects);
- To cluster results and discuss and plan possible joint exploitation actions.

Presenters

1. Rita Andrade | Sociedade Portuguesa de Inovação (SPI) | BINGO project's exploitable results and exploitation plan

2. Andrea Geyer-Scholz | Smart Cities Consulting (SCC), Austria | CLARITY project's exploitation strategy

3. Elena Lopez Gunn | ICATALIST

4. Jolijn Van Engelenburg | Vitens | **Erik Van Slobbe** and **Petra Hellegers** | Water Systems and Global Change Group, Wageningen University & Research

5. Marco Hartman | HKV / Brigaid

SCIENCE SESSION

SS021



11:15 Wednesday

Room S11

Keywords: private sector, resilience, standards, transports, urban adaptation, water management

Climate adaptation planning and the role of standards at the local and urban scale

Chair | Robbert Biesbroek | Wageningen University & Research

Syntheses of results from adaptation and resilience-building initiatives in urban and local areas, with a specific attention to the role of planning, management approaches and standardisation tools in the facilitation of adaptation and building resilience to climate change.

OC121

How can we ensure that current and future housing stock is adapted to a changing climate?

Michelagh O'Neill (United Kingdom) 1,2

1 – ClimateXChange; 2 – Edinburgh University

OC122

Reframing urban coastal adaptation – which is the most appropriate policy wagon?

Larissa Naylor (United Kingdom) 1; **Douglas Mitchell** (United Kingdom) 1; **Mairi Macarthur** (United Kingdom) 2

1 – University of Glasgow, School of Geographical and Earth Sciences, and NERC Coastal Climate Change Adaptation Knowledge Exchange Fellow; 2 – University of Glasgow, School of Geographical and Earth Sciences

OC123

Institutional and cultural evolutions to unlock the full potential of climate change adaptation in the private sector

Vivian Depoues (France) 1,2; **Youssef Diab** (France) 3; **Vincent Viguie** (France) 4

1 – I4CE; 2 – CEARC; 3 – Lab Urba; 4 – CIRED – Ecole des Ponts ParisTech

OC124

Strategic groundwater management as an adaptation measure

Henk-Jan Van Alphen (Netherlands) 1; **Marjolein Van Huijgevoort** (Netherlands) 1; **Teun Spek** (Netherlands) 2; **Jolijn Van Engelenburg** (Netherlands) 3; **Flip Witte** (Netherlands) 1; **Bernard Voortman** (Netherlands) 4

1 – KWR; 2 – Provincie Gelderland; 3 – Vitens; 4 – Moisture Matters

Work together, work better: How standardisation can support urban climate change adaptation

Vasileios Latinos (Germany) 1; **Serene Hanania** (Germany) 1; Julia Peleikis (Germany) 1; Holger Robrecht (Germany) 1

1 – ICLEI Local Governments for Sustainability

OC125

A way to standardize local adaptation planning – approach through ISO Adaptation Framework

Yasuaki Hijioka (Japan) 1; **Yoshimi Fukumura** (Japan) 1; Manabu Watanabe (Japan) 2; Kazutaka Oka (Japan) 1

1 – National Institute for Environmental Studies; 2 – E-konzal

OC126

SCIENCE PRACTICE SESSION

Sustainable finance and the road to climate change adaptation

Sarah Keyes (Canada) 1; Gordon Beal (Canada) 1; Elizabeth Atkinson (Canada) 2; **Anne Adrain** (United Kingdom) 3

1 – Chartered Professional Accountants of Canada; 2 – Natural Resources Canada; 3 – Institute of Chartered Accountants of Scotland

This session explores the critical intersection of public and private sector efforts to finance investments to build resilience and adaptive capacity in the face of climate change. With the transition to a low-carbon economy estimated to hold tens of trillions of dollars in opportunities, sustainable finance is becoming a front-burner issue across the global finance community.

Sustainable finance is a global movement that includes examining financial policies and regulations to create conditions to promote long-term economic growth that delivers on environmental and social objectives as well as financial returns.

Key messages for the session focus on:

- **Expanding the narrative** – climate adaptation is an economic issue and this messaging needs to expand so that it includes the opportunities of building resilience and broad recognition that adaptation is a space for innovation and inventiveness.
- **Increasing integration** – it is essential that there is collaboration between public and private sectors at all levels to realize all of the opportunities for increased competitiveness and productivity, lower long-term costs, and resiliency within our economy and society.



SP026

11:15 Wednesday

Room S13

Keywords: climate change, sustainable finance, adaptation, resilience, disclosure

- **Providing institutional support** – leveraging tools within institutional structures in order to encourage broad-sweeping adaptation action and build the institutional support for change. This in turn creates demand, increasing transparency, and building capacity. Financial levers to be leveraged include disclosure and reporting.
- **Engaging assurance providers** – Consider the role that assurance might play in underpinning the credibility of climate change reporting and how the skill set of the auditor might need to evolve in response.

Presenters

1. **Gord Beal** | Chartered Professional Accountants of Canada

2. **Elizabeth Atkinson** | Natural Resources Canada

3. **Sarah Keyes** | Chartered Professional Accountants of Canada

4. **Anne Adrain** | Institute of Chartered Accountants of Scotland

SCIENCE SESSION

SS022



11:15 Wednesday

Room S16

Keywords: asset evaluation, economic costs, enterprises, labour productivity, models, private sector.

Economic impacts of climate change and climate change adaptation

Chair | Alexander (Sandy) Bisaro | Global Climate Forum

Review of recent results from studies and projects that have mapped and assessed the economic costs of climate change impacts, as well as the aggregated economic costs and benefits of adaptation policies across multiple scales and sectors.

OC127

Economic costs of climate change and adaptation in Europe: Synthesis results from the COACCH project

Jenny Tröltzsch (Germany) 1; **Katriona Mcglade** (Germany) 1; **Paul Watkiss** (United Kingdom) 2

1 – Ecologic Institute; 2 – Paul Watkiss Associates

OC128

Mapping loss of labour productivity resulting from climate change in Europe

Peter Bosch (Netherlands) 1; **Andreas Flouris** (Greece) 2; **Konstantina Poulianiti** (Greece) 2

1 – TNO; 2 – FAME Laboratory Department of Exercise Science, University of Thessaly

Integrating climate change in the evaluation of hydroelectric asset value

Pineault Katherine (Canada) 1; Élyse Fournier Élyse Fournier (Canada) 1; Lamy Annabelle (Canada) 1; **Alain Bourque** (Canada) 1

1 – Ouranos

Business experience of floods and drought-related water and electricity supply disruption in sub-Saharan Africa during the 2015/2016 El Niño

Kate Gannon (United Kingdom) 1; Declan Conway (United Kingdom) 1; **Christian Siderius** (United Kingdom) 1

1 – London School of Economics and Political Science (LSE)

Energy for cooling and heating: climate change impacts on energy demand of Italian households

Lorenza Campagnolo (Italy) 1; Enrica Decian (Italy) 1

1 – Ca'Foscari University and CMCC@Ca'Foscari

Integrated assessment of agricultural adaptation to climate change in a water-constrained region in Austria

Hermine Mitter (Austria) 1; Katrin Karner (Austria) 1; Erwin Schmid (Austria) 1

1 – University of Natural Resources and Life Sciences, Vienna

TOOL-SHED SESSION

XDI Globe – Intelligence on your assets vulnerability to climate change impacts. Multiple assets, multiple locations. Sophisticated analysis, easy interface

Karl Mallon (Australia) 1; Rohan Hamden (Australia) 1

1 – Climate Risk

The XDI Platform calculates an asset's exposure and vulnerability to the physical effects of climate change, or climate risk. Our analysis is embedded in an interactive tool that allows a user to view assets by area, by hazard, or by specific asset with detailed information on construction elements' vulnerability and failure modes.

OC129

OC130

OC131

OC132



TS010

11:15 Wednesday

Room S15

Keywords: climate risk, adaptation, physical risk

XDI Globe takes you around the world to your asset and reports on annual average losses, risk cost, risk fraction, insurability, likelihood of asset failure and under which conditions. We had a lot of fun creating a 3D world for users in VR, but for ECCA we will keep it simple and present on a large screen! XDI Globe is our latest dynamic interface that presents a capability in development since 2009, and has been used commercially by lending institutions, water, transport and telecoms utilities, health infrastructure owners, state governments and major municipalities.

Our clients gain powerful insights into their organisations' climate risk, and can confidently use these insights for business decisions that build resilience by protecting their assets and their end users.

Web address: <https://xdi.systems/>

TOOL-SHED SESSION

TS011



12:25 Wednesday

Room S15

Keywords: collaborative, planning, support, system, blue-green-solutions

Toolbox Climate Resilient City

Frans Van De Ven (Netherlands) 1; **Sadie Mcevoy** (Netherlands) 1

1 – Deltares / TU Delft

The Toolbox Climate Resilient Cities is a planning support system for multi-disciplinary collaborative planning of climate adaptation measures – mostly blue-green solutions. The toolbox contains over 40 measures and is used to discuss where and how in a project area which measures can be applied. The tool provides estimates of the resilience performance for flooding, drought, heat stress and water pollution of each measure and of the package as a total; it moreover provides estimates of the costs of implementation and maintenance.

The tool is the successor of the Adaptation Support Tool and will be launched this spring in the Netherlands to support the climate risk dialogues, the next step after the climate stress test each city has to make by 2020.

Web address: <https://ruimtelijkeadaptatie.nl/english/>

TOOL-SHED SESSION

Clim2power web application – translating climate data into power plants operational guidance

Sofia Simões (Portugal) 1; Filipa Amorim (Portugal) 1

1 – FCT – NOVA University Lisbon

Clim2Power is a research project that creates a bridge between complex scientific model based knowledge and targeted, usable information for end users. Clim2Power is building a EU-wide web based Climate Service addressing the impact of climate on hydro, wind, and solar power operation, electricity demand, and the whole power system, addressed at both a seasonal and long-term timescale. The web-based Climate Service data will support both private and public decision making, including market-based power service providers. The most relevant indicators to be presented in the web service are: % of electricity generated from RES, g CO₂/kWh, % variation in electricity costs for final consumers, % usage of existing electric grid interconnection capacity and electricity stored in batteries and hydro pumped storage (GWh).



TS012

12:45 Wednesday

Room S15

Keywords: climate/energy modelling, climate services, power sector

TOOL-SHED SESSION

HAZUR Resilient Systems, a holistic approach to face climate change impacts

Ignasi Fontanals (Spain) 1

1 – OPTICITS

For cities who must face chronic stresses and acute shocks with limited budgets, HAZUR® is the first city-resilience-oriented online platform that provides a flexible methodology and a simulation of a system to go through the whole process of integrating resilience concepts into operations of basic municipal services and infrastructures with the engagement of city stakeholders.

HAZUR is designed to support the implementation and management of cities' resilience. It includes a method to understand that the city works as system of systems by analyzing interdependencies in service networks.

Web address: <http://opticits.com>



TS013

13:00 Wednesday

Room PA

Keywords: city resilience, co-creation, city empowerment, critical infrastructures, simulation

START OF NEXT SESSION

SP027



14:00 Wednesday

Room PA

Keywords: disaster risk reduction, extreme weather and climate events, security and civil protection policies, practitioners involvement

SCIENCE PRACTICE SESSION

Science in support of EU Disaster Risk Reduction policies in the area of weather and climate extreme events

Philippe Quevauviller (Belgium) 1; Daniel Sempere Torres (Spain) 2; Claudio Rossi (Italy) 3; **Anastasios Karakostas** (Greece) 4

1 – European Commission, DG HOME; 2 – University of Catalunya; 3 – ISBM; 4 – Centre for Research and Technology Hellas

Extreme weather and climate events, interacting with exposed and vulnerable human and natural systems, can lead to disasters. According to IPCC, some types of extreme events (e.g. flash floods and related landslides, storm surges, heatwaves, fires, including vegetation fires) have increased in frequency or magnitude, and in the meantime populations and assets at risk have also increased, leading to enhanced disaster risks. In order to better forecast and manage the immediate consequences of weather- and climate-related disasters, in particular regarding emergency responses, improved measures and technologies are needed.

The H2020 Secure Societies Programme has launched a call in 2015 to investigate the potential of current and new measures (including local measures) and technologies to enhance the response capacity to extreme weather and climate events affecting the security of people and assets. The aim was to focus on emergency management operations and cover the whole crisis management, linking awareness and early warning to effective responses within society and coordination with first responders, including the use of adapted cyber technologies to gain time and improve coordination in emergency situations.

The call resulted in three key projects, namely ANYWHERE, I-REACT and BeAWARE, which are subject to the proposed session, which are exploring the links and eventual adjustments of the warning and response systems facing the observed or anticipated changes in frequency and intensity of extreme climate events. In support of EU policies such as the Union Civil Protection Mechanism, the Climate Change Adaptation Strategy, the Flood Directive, the projects are developing more effective and faster emergency responses to extreme weather and climate events, faster analysis of risks and anticipation, and publicly available online now- and fore-casting systems for disasters triggered by (extreme) weather conditions. They are aiming to contributing to an improved coordination of emergency reactions in the field and capacity to provide adequate emergency responses to extreme weather and climate events. The three projects are involving key actors in policy-making, science, industry as well as practitioners (civil protection units, fire brigades, emergency units), which should guarantee an efficient uptake of research outputs turned towards enhancing shorter reaction time and higher efficiency of reactions, and thus enhancing citizen's protection and saving lives.

Presenters

1. **Daniel Sempere** | Universitat Politècnica de Catalunya (Spain)

2. **Claudio Rossi** | ISBM (Italy) | I-REACT (Improving Resilience to Emergencies through Advanced Cyber Technologies)

3. **Anastasios Karakostas** | Centre for Research and Technology Hellas (Greece)

4. **Philippe Quevauviller** | European Commission, DG HOME – Community of Users on Secure, Safe and Resilient Societies

SCIENCE PRACTICE SESSION

Understanding the landscape of adaptation platforms in Europe – improving complementarities and connecting needs and practices

José Ramón Picatoste (Denmark) 2; **Valentina Giannini** (Italy) 1

1 – Euro-Mediterranean Center on Climate Change; 2 – European Environment Agency

One of the priorities of the EU Adaptation Strategy is to promote better-informed decision making and to contribute to a climate-resilient Europe. The European Climate Adaptation Platform Climate-ADAPT is one of the core actions of the Adaptation Strategy and aims to facilitate the sharing and uptake of adaptation knowledge and contribute to a better cooperation among sectors and between governance levels.

Along with Climate-ADAPT, a growing number of information systems have been developed in recent years at European and other levels, transforming the landscape of adaptation platforms (and related areas) across Europe. These are global platforms (such as weADAPT, managed by SEI), transnational platforms (such as the one coordinated by the Pyrenees Observatory of Climate Change) and a large variety of national and sub-national platforms (such as AdapteCCa, operated by the Spanish Climate Change Office).

At the same time, since the adoption of the Adaptation Strategy in 2013, there have been a continuous increase in knowledge generation and practical experiences coming from EU funded projects and other sources. This circumstance poses a challenge for information systems that need to be relevant and complementary in the way they identify and facilitate the right information needed for each specific profile of users.



SP028

14:00 Wednesday

Room S1

Keywords: adaptation platforms, knowledge exchange, cross-harvesting, platforms complementarity, informed decision making

This session will review some examples in the landscape of adaptation platforms in Europe at global, European, transnational and national levels, from a planning and managing perspective, highlighting the specificities of each in terms of objectives, governance, target audience, contents, key features and tools, sources and providers of information, and stakeholder interactions. Presentations in this session will be comparable, in order to show common approaches, needs and/or substantial differences among the platforms, allowing discussions on complementing and connecting platforms from a bottom-up perspective.

The session will also include the scientific perspective from PLACARD project that is working to improve collaboration, communication and coordination between the large and complex landscape of stakeholder networks, research, platforms and information sources regarding Climate Change Adaptation and Disaster Risk Reduction communities in Europe. The discussion will focus on how to enhance the coherence, the complementarity and the connections among the adaptation platforms in Europe. Guiding questions will address key aspects to be discussed among authors and to promote audience participation. A pilot showing a cross harvesting action between platforms at different levels will be presented.

Presenters

1. **José Ramón Picatoste** | EEA | **Valentina Giannini** | CMCC | Climate-ADAPT
2. **Francisco Jorge Heras** | OECC | **Anna Pons** | FB | AdapteCCa
3. **Idoia Arauzo** | OPCC | The Pyrenean Climate Change platform
4. **Julia Barrott** | SEI | weADAPT
5. **Sukaina Bharwani** | SEI | The PLACARD Connectivity Hub

SCIENCE SESSION

SS023



14:00 Wednesday

Room S2

Keywords: climate services, energy sector, flood risk, high-end climate change, private sector, tools

Decision-support platforms and tools for climate adaptation and disaster risk reduction

Chair | Andreia Sousa | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Presentation and discussion of the most recent lessons in the development, use and evaluation of climate adaptation platforms and decision-support tools aimed at supporting national-level and private sector decision-makers, across multiple sectors.

Climate adaptation platforms and decision support tools in the context of high-end climate change

Tiago Capela Lourenço (Portugal) 1; **Susana Marreiros** (Portugal) 1; Luís Filipe Dias (Portugal) 1; Adis Dzebo (Sweden) 2; Henrik Carlsen (Sweden) 2; Paula Harrison (United Kingdom) 3

1 – Climate Change Impacts, Adaptation and Modelling group (CCIAM-cE3c), University of Lisbon ; 2 – Stockholm Environment Institute, Stockholm, Sweden; 3 – Centre for Ecology & Hydrology (CEH)

The German Climate Preparedness Portal – a guide to climate services of the federal states and the government of Germany

Maya Körber (Germany) 1; Stefan Rösner (Germany) 1; **Kirsten Sander** (Germany) 2

1 – Deutscher Wetterdienst; 2 – Umweltbundesamt

The National Adaptation Geo-Information System (NAGiS) as a decision-support tool in Hungary

Tamás Czira (Hungary) 1; Lilian Fejes (Hungary) 1

1 – Mining and Geological Survey of Hungary

Valuation tools for strong narratives around Blue Green Infrastructure: a possible solution for bridging the finance gap in climate adaptation?

Max Berkelmans (Spain) 1; Sebastiaan Van Herk (Spain) 1; Paul Shaffer (Spain) 2; Berry Gersonius (Spain) 3

1 – Bax & Company; 2 – Construction Industry Research Information Association; 3 – IHE Delft

ReKIS kommunal – an easy access tool for small and medium sized communities to support climate change adaptation

Dominic Rumpf (Germany) 1; Caterina Joseph (Germany) 1; Johannes Franke (Germany) 1; Andreas Völlings (Germany) 1; Rico Kronenberg (Germany) 2; Majana Heidenreich (Germany) 2; Christian Bernhofer (Germany) 2; Werner Sommer (Germany) 1; Andrea Hausmann (Germany) 1

1 – Saxon State office for Environment, Agriculture and Geology (Landesamt fuer Umwelt, Landwirtschaft und Geologie LfULG), subunit of the Saxon State Ministry for Environment and Agriculture (Sächsisches Staatsministerium für Umwelt und Landwirtschaft); 2 – Technische Universität Dresden, Faculty of Environmental Sciences, Institute of Hydrology and Meteorology, Chair of Meteorology (Technische Universität Dresden, Fakultät Umweltwissenschaften, Institut für Hydrologie und Meteorologie, Professur für Meteorologie)

OC133

OC134

OC135

OC136

OC137

OC138

S2S4E – a decision support tool to visualize climate variability weeks and months ahead

Isadora Christel (Spain) 1; Albert Soret (Spain) 1; Fernando Cucchiatti (Spain) 1; Luz Calvo (Spain) 1; **Marta Terrado** (Spain) 1; Dragana Bojovic (Spain) 1; Llorenç Lledó (Spain) 1; Andrea Manrique (Spain) 1

1 – Barcelona Supercomputing Center

SCIENCE PRACTICE SESSION

SP029



14:00 Wednesday

Room S5

Keywords: arts-based methods, youth empowerment, climate change leadership

Arts-based methodologies for youth leadership, empowerment and meaningful engagement in climate change

Julia Bentz (Portugal) 1; Robin Cox (Canada) 2;

1 – Ce3c Centre for Ecology, Evolution and Environmental Changes, Faculty of Sciences, Universidade de Lisboa, Lisbon, Portugal; 2 – Resilience by Design Lab, Royal Roads University, Victoria BC, Canada

Worldwide there is a lack of youth participation in public decisions around climate change. These same youth are disproportionately affected by disasters and climate change hazards and have limited voices over the decisions and policies related to disaster risk reduction (DRR), climate change adaptation (CCA), and community resilience (CR) despite calls for their empowerment as strong stakeholders in these issues. Engaging youth as stakeholders has implications for human rights, because those that are mostly marginalized and less likely to have their voices heard, are the same who are also at risk of adverse impacts of climate change and disasters. Additionally, youth will soon be moving to leadership roles in spaces of decision-making, and inheriting the consequences of climate change and policies and actions that are being co-constructed today, they must have their voices heard now. Although there has been an increase in formal education programs that engage children and youth in DRR, CCA, and CR, few of these initiatives include them in policy-oriented action to address not only these complex problems, but also the systemic issues that underlie them, such as poverty, marginalization, and civic disenfranchisement. Actively engaging and empowering children and youth to address these complex problems is a critical step to achieving resilience at local, regional, and national levels.

But how can we engage and capacitate young people so they become leaders and empowered climate agents? This session aims to address this question by providing examples of meaningful engagement of youth in climate change dialogues using arts-based methodologies.

Art has the capacity to not only raise awareness but also enable creative ways to address sensitive issues, support reflexivity and act as a conduit for cultural renewal. Artists are often at the forefront of innovation for the novel ways of addressing problems, free from disciplinary constraints. Arts-based methodologies have the potential to challenge current thinking on climate change, presenting new ways of approaching complex problems and engage youth. Creative ways of integrating the practical, personal and political dimensions of climate change contribute to more successful social transformation and adaptation to climate change.

Presenters

Robin Cox | Arts-based methodologies for youth empowerment and meaningful engagement in climate change

Julia Bentz | How to empower young people in climate change solutions? Project Art For Adaptation

SCIENCE PRACTICE SESSION

Understanding disaster and climate change resilience to enhance resilience decision-making across scales-insights from the Flood Resilience Alliance

Finn Laurien (Austria) 1; **Reinhard Mechler** (Austria) 1

1 – IIASA

Given increasing attention placed on strengthening disaster and climate resilience in international humanitarian and development work, there is a growing need to invest in its measurement and the overall accountability of ‘resilience strengthening’ initiatives. The Flood Resilience Measurement for Communities (FRMC) framework, which includes a fully operational, integrated measurement tool, takes a systems-thinking, holistic approach to serve the dual goals of generating data on the determinants of community flood resilience, and providing decision-support for on-the-ground investment. The FRMC has already been applied in over 100 communities worldwide; it has since been refined and application in a further cohort of communities has commenced including European countries like UK, Montenegro and Albania. The purpose of this session is to present four lessons how ‘resilience strengthening’ initiatives help to inform local to global decision-making on resilience.



SP030

14:00 Wednesday

Room S6

Keywords: resilience, assessment, governance, transformation, metrics

The first presentation introduces the work by the Flood Resilience Alliance performed along the science-practice interface. The authors particularly focus on transformational risk management and examine whether and how transformation plays out with regard to relevant decision-making scales and how any insight generated may inform disaster and climate resilience as well as climate policy.

The second presentation shares experiences from practice how communities have respond to negative consequences. It highlights how understanding changing hazard profiles, prioritising different hazards, understanding implications for livelihoods and well-being are all essential components of effective resilience-building approaches.

Presentation three proposes a holistic metric and approach to understand flood resilience capacity and underlines the need for more conceptually standardized measurement of resilience. The talk builds on cluster analysis done on community resilience baseline studies implemented using the FRMC framework and data collection tool across 118 communities worldwide

The fourth presentation provides first results from a comparison between urban and rural communities where the FRMC tool has been applied. Based on the empirical findings and an literature review the current challenges and knowledge gaps in measuring urban resilience are highlighted.

The fifth talk examines the processes and mechanisms by which decisions about flood risk reduction in urban areas are taken and implemented. It develops a four-layer, multilevel framework for Urban Flood Risk Governance. The framework, informed by insights from urban flood risk governance analysis in the UK can be used for investigating what drives resilience in different temporal phases and with respect to influential catalyst actors/institutions.

Presenters

1. Reinhard Mechler | IIASA | Understanding the role of transformational risk management-insights from the Flood Resilience Alliance community cases

2. Colin McQuistan | Practical Action, ZFRA | A partnership for disaster and climate change risk management; showing the limits of adaptation and the long-term process to reduce impacts

3. Finn Laurien | IIASA | The FRMC framework and tool. Dynamic cluster analysis for informing resilience decision processes

4. Viktor Roezer | LSE | Measuring flood resilience at the urban level – insights from the Zurich Flood Resilience Alliance project

5. Sara Mehryar and Swenja Surminski | LSE | Urban Flood Risk Governance: Decision Making Process, Temporal Phases, and Catalyst Actors

SCIENCE SESSION

Methods and tools in climate services

Chair | Francisco Doblas Reyes | BSC-CNS

Report on some of the most recent methodological approaches applied to the development of data and information for application in climate services, including models, forecasts and projections for use in multiple policy context and sector-specific needs.

The future climate in Portugal: high-resolution projections using WRF model and EURO-CORDEX multi-model ensembles

Pedro M.M. Soares (Portugal) 1; **Rita M. Cardoso** (Portugal) 1; **Daniela C.A. Lima** (Portugal) 1

1 – Instituto Dom Luiz, Faculdade de Ciências, Universidade de Lisboa

Global physical risk modelling for climate services and research

Samuel Eberenz (Switzerland) 1,2; **David N. Bresch** (Switzerland) 1,2

1 – ETH Zürich; 2 – MeteoSwiss

Operating a multipurpose reservoir through a climate forecast service

Javier Herrero (Spain) 1; **Eva Contreras** (Spain) 1; **Cristina Aguilar** (Spain) 2; **María José Polo** (Spain) 1

1 – Fluvial Dynamics and Hydrology Research Group-Andalusian Institute for Earth System Research (IISTA), University of Córdoba, Campus Rabanales, Edificio Leonardo da Vinci, Área Ingeniería Hidráulica, 14071 Córdoba, Spain; 2 – Fluvial Dynamics and Hydrology Research Group-Andalusian Institute for Earth System Research (IISTA), University of Córdoba, Campus Rabanales, Edificio Leonardo da Vinci, Área Mecánica, 14071 Córdoba, Spain

A typology of climate services: frames in the global arena

Lugen Marine (Belgium) 1; **Zaccai Edwin** (Belgium) 1

1 – Université Libre de Bruxelles

Developing a blueprint for future climate services for the transport sector

David Jaroszowski (United Kingdom) 1

1 – University of Birmingham



SS024

14:00 Wednesday

Room S7

Keywords: climate projections, climate risks, climate services, literature review, modelling, patents

OC139

OC140

OC141

OC142

OC143

OC144

Technological innovation for climate change adaptation: A global empirical analysis based on patent data

Jana Stoever (Germany) 1; Antoine Dechezleprêtre (Germany) 2; Matthieu Glachant (France) 3; Simon Stoever (France) 4

1 – Kiel University & MINES ParisTech; 2 – London School of Economics & OECD; 3 – MINES ParisTech & London School of Economics; 4 – MINES ParisTech

SCIENCE PRACTICE SESSION

SP031



14:00 Wednesday

Room S8

Keywords: alpine region, multilevel governance, mainstreaming, national adaptation strategies, risk governance

The governance of climate adaptation and natural hazards in Alpine countries: lessons learnt on multi-level governance and mainstreaming

Wolfgang Lexner (Austria) 1; Marco Pütz (Switzerland) 2; Dominik Braunschweiger (Switzerland) 2; Andreas Vetter (Germany) 3; Marco Pregnolato (Italy) 5; Arthur Schindelegger (Austria) 4

1 – Environment Agency Austria (EAA); 2 – Swiss Federal Institute for Forest, Snow and Landscape Research WSL; 3 – German Environment Agency, Section KomPass – Climate Impacts and Adaptation; 4 – Technical University Vienna, Dep. Spatial Planning; 5 – Lombardy Foundation for the Environment (FLA)

National climate adaptation strategies, often complemented by national action plans, are by now in place in all seven countries of the Alpine region, and there has been considerable progress in proliferation of sub-national adaptation strategies (e.g., states, regions, cantons). Substantial progress has also been made in terms of knowledge generation, capacity-building, and experimenting with governance innovations, such as pilot or model region funding programmes. At the same time, however, all countries are struggling with multiple barriers to the implementation of their adaptation strategies across sectors and levels: adaptation strategies are limited in their function as coordination hubs, progress in sub-national policy making is still patchy, adaptation has hardly entered local agendas, and mainstreaming of adaptation is limited on all levels. Many difficulties in implementing adaptation are connected to the sphere of governance, i.e. the mechanisms, modes, formats and related capacities, or the lack thereof, via which different levels and sectors interact with each other.

In order to learn from shared strengths and weaknesses and from the diversity of governance approaches taken in different countries, the network of national adaptation policy makers in the Alpine countries has jointly implemented the transnational project 'GoApply – Multidimensional governance of climate adaptation in policy making and practice', co-funded by the Alpine Space Programme.

The main objectives were to improve the understanding of adaptation governance systems in the Alpine countries and to support both vertical coordination of adaptation policies and their horizontal integration into sector policies. Partners have comprehensively mapped, analysed and visualized their national adaptation governance landscapes (policies, measures, actors, knowledge, interactions), conducted in-depth case studies, and identified good practice approaches. The empirical case studies on multi-level governance and mainstreaming proved particularly suitable for the identification of barriers, success factors, and lessons learnt.

Cross-case comparison and blending of the case study results with insights gained from the mapping of the country-wide governance systems allowed deriving enhancement options for each country. Based on transnational comparison, the project has provided a portfolio of feasible governance options to improve the governance of adaptation across sectors and levels. In our session, we will present the main findings for four countries (Austria, Germany, Italy, Switzerland) and a transnational synthesis of lessons learnt with joint policy recommendations.

Building a bridge from climate adaptation to disaster risk reduction, an additional talk will present key results of a comparative study on natural hazards risk governance in the EUSALP macro-region. Target audience The session is designed as a science-practice session addressing equally researchers (policy and governance researchers; adaptation experts working in 'boundary', knowledge brokerage and training institutions), public administration and practitioners (including adaptation coordinators, policy advisors and sectoral decision-makers from authorities, agencies, interest groups, and NGOs on national, regional and local levels) that are active and/or interested in the governance of climate adaptation. Proposed format for the session We propose a science-practice session involving six speakers from four different countries, who are either coordinators of national adaptation strategies or policy researchers. The duration of each talk will be limited to 15 minutes, with about 10 minutes for each presentation and 5 minutes for answering questions from the audience. The remaining 15 minutes shall be dedicated to plenary discussion.

Following a brief introduction by the session chair, the first four speakers will present the main findings from national climate adaptation governance studies in their respective countries, i.e. Switzerland, Germany, Italy, and Austria. The fifth speaker will present major lessons learnt, conclusions and policy recommendations that emerged from the transnational comparison, including also the three countries Slovenia, France and Liechtenstein. Intending to build the bridge from climate adaptation to risk management, the last speaker will complement the findings on the governance of adaptation with results of a comparative study on risk governance in the field of weather- and climate-driven natural hazards in the countries of the EUSALP macro-region.

Presenters

Marco Pütz, Dominik Braunschweiger | WSL | Implementing strategies to adapt to climate change within multilevel governance frameworks: the case of Switzerland

Andreas Vetter, Andrej Lange, Sebastian Ebert | UBA-KomPass | How are municipalities in Germany progressing in climate change adaptation, and how can federal and state administration support their efforts?

Marco Pregnotato, Luca Cetara, Antonio Ballarin-Denti | FLA | Non-formalized approaches to adaptation governance in the experience of Italian cases

Wolfgang Lexer, Daniel Buschmann | EAA | Governance of climate adaptation in a federal state system: what lessons can other countries learn from experiences in Austria?

Dominik Braunschweiger, Marco Pütz | WSL | Good governance of climate change adaptation: Insights and lessons from a transnational comparison of the Alpine Space

Arthur Schindelegger, Arthur Kanonier | TU Vienna | Natural hazard risk governance – A comparative mapping in the EUSALP macro-region

SCIENCE SESSION

SS025



14:00 Wednesday

Room S9

Keywords: citizen participation, climate adaptation, co-production, floods, mitigation strategies, sea level rise

OC145

Mobilising local or traditional knowledge for adaptation planning

Chair | Aleksandra Kazmierczak | European Environment Agency

Presentation of results with a focus on the participation of citizens, local or indigenous communities in climate change adaptation action and policy processes, including mobilisation in the co-production of information, scenarios and strategies.

Makah traditional knowledge and cultural resource assessment: A preliminary framework to utilize traditional knowledge into climate change planning

Danielle Edelman (United States of America) 1; Michael Chang (United States of America) 1; Katie Wrubel (United States of America) 1; Laura Nelson (United States of America) 2; Haley Kennard (United States of America) 1

1 – Makah Tribe; 2 – University of Washington

Citizen participation in climate adaptation processes

Theresa Anna Michel (Germany) 1

1 – University of Oldenburg

Adaptive governance: co-creating adaptation strategies with local communities

Luísa Schmidt (Portugal) 1; **Carla Gomes** (Portugal) 1; **João Mourato** (Portugal) 1; **Adriana Alves** (Portugal) 1

1 – Instituto de Ciências Sociais, Universidade de Lisboa

Some lessons learned about politics and power in the co-production of pathways

Russell Wise (Australia) 1; **James Butler** (Australia) 1; **Seona Meharg** (Australia) 1; **Nate Peterson** (Australia) 3; **Desmond Vaghelo** (Papua New Guinea) 2

1 – CSIRO Land & Water; 2 – West New Britain Provincial Administration; 3 – The Nature Conservancy

Accounting for the dynamics of climate change vulnerability with qualitative participatory GIS methodology

Alexandra Jurgilevich (Finland) 1; **Aleksi Räsänen** (Finland) 1; **Sirkku Juhola** (Finland) 1

1 – University of Helsinki

Coastal climate services in French Polynesia and the Maldives: A comparison of governance contexts and information needs

Geronimo Gussmann (Germany) 1; **Heitea Terorotua** (France) 2

1 – Global Climate Forum e.V.; 2 – University of la Rochelle

SCIENCE SESSION

Adapting to a changing climate in agriculture, fisheries and coastal planning

Chair | **André Vizinho** | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Review of studies focusing on the management of some of the most critical resources for human food security – specifically arable crops, fisheries and aquaculture – and adaptation in coastal regions, offering perspectives on the risks to ecosystem services and other key economic activities.

OC146

OC147

OC148

OC149

OC150

 **SS026**

14:00 Wednesday

Room S10

Keywords: aquaculture, crop yields, ecosystem services, irrigation, marine planning, SLR

OC151

Climate change impacts on European crop yields by 2050, opportunities for adaptation

Frank Dentener (Italy) 1; **Andrea Toreti** (Italy) 1; Maurits Van Den Berg (Italy) 1; Iacopo Cerrani (Italy) 1; Andrej Ceglar (Italy) 1; Alessandro Dosio (Italy) 1; Davide Fumagalli (Italy) 1; Stefano Galmarini (Italy) 1; Remi Lecerf (Italy) 1; Stefano Niemeyer (Italy) 1; Lorenzo Panarello (Italy) 1; Marijn Van Der Velde (Italy) 1; Matteo Zampieri (Italy) 1

1 – European Commission, Joint Research Center

OC152

Impacts on winter wheat yield in Germany at 1°, 1.5°, 2°, 2.5° and 3° global warming

Michael Peichl (Germany) 1; Stephan Thober (Germany) 1; Andreas Marx (Germany) 1

1 – Helmholtz Centre for Environmental Research

OC153

Assessing vulnerability and risk of ocean planning to climate change

Catarina Frazao-Santos (Portugal) 1; Tundi Agardy (United States of America) 2; Francisco Andrade (Portugal) 1; Manuel Barange (Italy) 5; Larry Crowder (United States of America) 3; Charles Ehler (France) 6; Michael Orbach (United States of America) 4; Rui Rosa (Portugal) 1

1 – University of Lisbon, MARE-MARine and Environmental Sciences Center; 2 – Sound Seas; 3 – Hopkins Marine Station, Stanford University; 4 – Nicholas School of the Environment, Duke University; 5 – Food and Agriculture Organization; 6 – Intergovernmental Oceanographic Commission, UNESCO

OC154

Climate change adaptation and risk reduction in Portuguese viticulture

J. A. Santos (Portugal) 1,2; H. Fraga (Portugal) 1,2; R. Costa (Portugal) 1,2; A. Fonseca (Portugal) 1,2; M. Santos (Portugal) 1,2

1 – Centre for the Research and Technology of Agro-Environmental and Biological Sciences, CITAB; 2 – Universidade de Trás-os-Montes e Alto Douro, UTAD

OC155

Coastal ecosystem services values in the face of global change: projections for the European coast by 2050

Luiz Norberto Lacerda Magalhães Filho (Portugal) 1,2; Peter Cornelis Roebeling (Portugal) 1,2; Lucas Terres De Lima (Portugal) 1,2; Brechtje Pieterse (Netherlands) 3; Luis Costa (Germany) 4

1 – Univesity of Aveiro; 2 – Center for Environmental and Marine Studies; 3 – University of Wageningen; 4 – Postdam Institute for Climate Impact Research

OC156

Forecasting biological impacts of climate change for risk assessment in fisheries and aquaculture, the ClimeFish approach

X. Anton Alvarez-Salgado (Spain) 1; Alan Baudron (United Kingdom) 2; Isabel Fuentes-Santos (Spain) 1; Gergo Gyalog (Hungary) 3; Solfrid S. Hjollo (Norway) 4;

Jan Kubeckca (Czech Republic) 5; Dina Lika (Greece) 6; Bruce Mcadam (United Kingdom) 7; Nikos Papandroulakis (Greece) 8; Fabio Pranovi (Italy) 9; Trevor Tefler (United Kingdom) 7; Kjell R. Utne (Norway) 4; Elisabeth Ytteborg (Norway) 10; Matteo Zuccheta (Italy) 9; Michaela Aschan (Norway) 11; Daniele Brigolin (Italy) 9; Lynne Falconer (United Kingdom) 7; Bärbel Muller-Karullis (Sweden) 12; Raul Primicero (Norway) 11; Aslak Smalås (Norway) 11; Orestis Stavrakidis (Greece) 6,8,12; Astrid Sturm (Germany) 13,14; Franz Wätzold (Germany) 13

1 – CSIC Instituto de Investigaciones Marinas, Vigo; 2 – University of Aberdeen, The School of Biological Sciences; 3 – Research Institute for Fisheries and Aquaculture (HAKI), Szarvas; 4 – Institute of Marine Research, Bergen; 5 – Institute of Hydrobiology, Biology Centre CAS, České Budějovice; 6 – University of Crete, Heraklion; 7 – University of Stirling; 8 – HCMR Institute of Aquaculture, Gournes, Heraklion; 9 – University of Venice; 10 – NOFIMA Norwegian Institute of Food, Fisheries and Aquaculture Research, Ås; 11 – The Arctic University of Norway; 12 – Stockholm University; 13 – Brandenburg University of Technology Cottbus-Senftenberg; 14 – Institute of Computer Science, Freie Universität Berlin

SCIENCE SESSION

Environmental, social and economic benefits of Nature-Based Solutions

Chair | David Avelar | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Report on innovative approaches and implementation examples focusing on ecosystem-based adaptation solutions inspired and supported by nature, simultaneously providing environmental, social and economic benefits and building resilience.

Direct and indirect impacts of nature-based solutions on urban heat

Bruno Augusto (Portugal) 1; Peter Roebeling (Portugal) 1; Sandra Rafael (Portugal) 1; Joana Ferreira (Portugal) 1; Ana Ascenso (Portugal) 1

1 – University of Aveiro

The role of natural assets for climate risk management and resilience

Michelle Molnar (Canada) 1; Erica Olson (Canada) 2; Jimena Eyzaguirre (Canada) 2

1 – Municipal Natural Assets Initiative Society; 2 – ESSA Technologies Ltd.

The long-run impacts of flood experiences on welfare and flood recovery in Vietnam

Paul Hudson (Germany) 1; Philip Bubeck (Germany) 1

1 – University of Potsdam



SS027

14:00 Wednesday

Room S11

Keywords: coastal protection, ecosystem-based adaptation, NBS, resilience, urban planning, water management

OC157

OC158

OC159

OC160

Setback zones as a tool for coastal adaptation to sea-level rise: A national level analysis for the coast of Croatia

Daniel Lincke (Germany) 1; **Claudia Wolff** (Germany) 2; **Athanasios Vafeidis** (Germany) 2; **Jochen Hinkel** (Germany) 1; **Lukas Blickensdörfer** (Germany) 3; **Daria Povh Skugor** (Croatia) 4

1 – Global Climate Forum; 2 – Christian-Albrechts-Universität Kiel; 3 – Humboldt Universität Berlin; 4 – UN Environment Mediterranean Action Plan Priority Actions Programme Regional Activity Centre (PAP/RAC)

OC161

Planning Nature-based Solutions. An ecological-based approach from national to regional scale (Lisbon Metropolitan Area)

Selma B. Pena (Portugal) 1; **Manuela R. Magalhães** (Portugal) 1; **Maria Manuela Abreu** (Portugal) 1

1 – Universidade de Lisboa, Instituto Superior de Agronomia, LEAF – Linking Landscape, Environment, Agriculture and Food Research Centre

OC162

Strategic planning of an urban green infrastructure network for climate change adaptation using a participatory lab approach

Uwe Kurmutz (Germany) 1; **Oliver Gebhardt** (Germany) 2; **Annemarie Müller** (Germany) 3; **Anya Schwamberger** (Germany) 4

1 – Thuringian Institute of Sustainability and Climate Protection; 2 – Helmholtz Centre for Environmental Research – UFZ, Department of Economics; 3 – Helmholtz Centre for Environmental Research – UFZ; 4 – Department of Urban Development & City Planning Jena

SCIENCE SESSION

SS028



14:00 Wednesday

Room S13

Keywords: climate information, economics, inter-disciplinary approach, risk modelling techniques, sensitivity analysis, trade-offs

Exploring the potential of quantitative methods and modelling approaches

Chair | Tim Carter | Finnish Environment Institute

Review of research results on the interaction with end-users of climate information and the challenges and opportunities for finance, decision-makers and science to work together and develop novel tailored tools and indicators to translate physical data into usable information.

ClimINVEST – towards tailored climate information for the finance sector – a co-production approach between scientists and investors

Florian Gallo (France) 1; **Violaine Lepousez** (France) 1

1 – Carbone 4

Open-source climate adaptation: the global risk modelling and options appraisal CLIMADA platform

David N. Bresch (Switzerland) 1; **Gabriela Aznar Siguan** (Switzerland) 1

1 – ETH ZURICH / MeteoSwiss

The new CH2018 climate change scenarios: an example of an effective climate service in Switzerland

Andreas Fischer (Switzerland) 1; **Mischa Croci-Maspoli** (Switzerland) 1; **Angela Michiko Hama** (Switzerland) 1; **Reto Knutti** (Switzerland) 3; **Christoph Schär** (Switzerland) 3; **Cornelia Schwierz** (Switzerland) 1; **Kuno Strassmann** (Switzerland) 2

1 – Federal Office of Meteorology and Climatology MeteoSwiss; 2 – Center for Climate Systems Modeling (C2SM), ETH Zurich; 3 – Institute for Atmospheric and Climate Science, ETH Zurich

Estimating impact likelihoods by combining probabilistic projections of climate and socio-economic change with impact response surfaces

Stefan Fronzek (Finland) 1; **Nina Pirttioja** (Finland) 1; **Martina Flörke** (Germany) 2; **Yasushi Honda** (Japan) 3; **Akihiko Ito** (Japan) 4; **João Pedro Nunes** (Portugal) 5; **Jouni Räisänen** (Finland) 6; **Kiyoshi Takahashi** (Japan) 4; **Akemi Tanaka** (Japan) 7; **Florian Wimmer** (Germany) 2; **Minoru Yoshikawa** (Japan) 8; **Timothy R. Carter** (Finland) 1

1 – Finnish Environment Institute; 2 – University of Kassel; 3 – The University of Tsukuba; 4 – National Institute for Environmental Studies; 5 – University of Lisbon; 6 – Institute for Atmospheric and Earth System Research, University of Helsinki; 7 – Hokkaido Agricultural Research Center, National Agriculture and Food Research Organization; 8 – Mizuho Information and Research Institute

Ecosystem Services in a changing Europe: improving projections through an enhanced integrated assessment approach

Robert Dunford (United Kingdom) 1,2; **Bjorn Beckmann** (United Kingdom) 1; **Paula Harrison** (United Kingdom) 1

1 – Centre for Ecology & Hydrology; 2 – University of Oxford

Modelling the adaptive responses of public policy organisations to environmental change

Bumsuk Seo (Germany) 1; **Calum Brown** (Germany) 1; **Mark Rounsevell** (Germany) 1

1 – Karlsruhe Institute of Technology

OC163

OC164

OC165

OC166

OC167

OC168

SS029



14:00 Wednesday

Room S16

Keywords: climate services, co-design, climate resiliency, economic impacts, power grids, water utilities

SCIENCE SESSION

Co-production to enhance knowledge on economic impacts and the value of climate services

Chair | Efrén Feliu | Tecnalia

Showcase of recent examples of co-production and co-design approaches targeting the economic impacts of climate change, including the identification and analysis of climate adaptation practices and resilience, the valuation of climate services and the importance of engaging the financial sector.

OC169

Valuing climate services: Evidences from the CLARA Project

Elisa Delpiazzi (Italy) 1,2; Francesco Bosello (Italy) 1,2,3; Shouro Dasgupta (Italy) 1,2; Stefano Bagli (Italy) 4; Davide Broccoli (Italy) 4

1 – Centro Euro-Mediterraneo sui Cambiamenti Climatici; 2 – Cà Foscari University of Venice; 3 – University of Milan; 4 – GECOSISTEMA srl

OC170

Polynesian pathways to energy resilience – phasing out electricity grids

Kiti Suomalainen (New Zealand) 1; Golbon Zakeri (New Zealand) 1; Basil Sharp (New Zealand) 1; Peter Wilson (New Zealand) 2; Gareth Williams (New Zealand) 3

1 – Energy Centre, The University of Auckland; 2 – New Zealand Institute of Economic Research; 3 – Solarcity

OC171

Global study on climate resilient water supply and sanitation services

Mahua Bhattacharya (United Kingdom) 1; David Viner (United Kingdom) 1

1 – Mott MacDonald

OC172

Implementing co-design in the COACCH project

Katriona Mcglade (Germany) 1; Jenny Tröltzsch (Germany) 1; Paul Watkiss (Germany) 2

1 – Ecologic Institute; 2 – Paul Watkiss Associates

OC173

Physical climate risks and the financial sector – synthesis of investors climate information needs

Karianne De Bruin (Netherlands) 1; Christa Clapp (Norway) 2; Sophie Dejonckheere (Norway) 2

1 – Wageningen Environmental Research & CICERO; 2 – CICERO

Community-based participatory research to enhance climate resiliency in arid snow-fed river systems: best practices that support local climate adaptation

Loretta Singletary (United States of America) 1; Kelley Sterle (United States of America) 1

1 – University of Nevada, Reno

TOOL-SHED SESSION

Engage YOUTH in climate change adaptation

Bettina Koelle (United Kingdom) 1; Brigitte Rudram (United Kingdom) 1

1 – International Institute for Environment and Development

This session will introduce: Y-Adapt. Y-Adapt is a curriculum for young people consisting of games and playful activities. This curriculum aims to accomplish three things: 1. It helps youth to understand climate change and its linkages with disaster risk reduction; 2. It helps youth to understand how this impacts their own lives and their own communities and 3. It inspires youth to take meaningful and practical action in their community and inspire others to address these climate risks. These actions are local interventions that reduce the impacts of severe weather-related events.

Web address: www.climatecentre.org/resources-games/y-adapt

TOOL-SHED SESSION

Fun activities to understand climate downscaling and adaptation decision making

Renee A. Mcpherson (United States of America) 1

1 – University of Oklahoma

I will present several activities that the South Central Climate Adaptation Science Center uses in undergraduate classes and at workshops with stakeholders. The goals of these activities are for participants to better understand what climate model downscaling is, how to make decisions with multiple climate projections, and how to discuss adaptation trade-offs with groups of stakeholders who have differing or conflicting priorities. No technology is required to conduct these activities, making them easy to bring into a community.

OC174



TS014

14:00 Wednesday

Room S15

Keywords: youth, climate, disaster, action



TS015

14:45 Wednesday

Room S15

Keywords: downscaling, drought, decision making, activities

All of the activities are fun and generate much discussion among the participants. I will overview what materials are needed, how we run the activities, and what the common takeaways are from participants. We will not have time to conduct each activity, but I will bring directions so you can try them yourself!

TOOL-SHED SESSION

TS016



15:15 Wednesday

Room S15

Keywords: knowledge,
news, Europe, vulnerabilities,
adaptation

The ClimateChangePost: a knowledge broker on climate change and adaptation with a special focus on 'Europe in a changing climate'

Wilfried Ten Brinke (Netherlands) 1

1 – ClimateChangePost

The ClimateChangePost is a news site that covers the latest scientific findings on Europe in a changing climate change. The site aims to communicate the latest (scientific) findings and best practices on climate change and adaptation to a wide audience. It helps to bridge between science on one side, and policymakers and practitioners on the other.

The site presents the state-of-the-art knowledge of Europe's changing climate and the consequences for each country and for all sectors involved, based on a thorough literature research. Also included are strategies to adapt to the consequences of climate change.

The site consists of 3 major components: (1) a database with information for each European country and all relevant themes (just click on the map of Europe and then select the theme you're interested in), (2) a growing number of (now over 500) articles that summarize scientific publications in 1 minute read posts for a wide audience, and (3) overview presentations on 'Europe's impacts in infographics'.

These 'components' are being updated on a regular basis by closely following about 40 scientific journals, IPCC reports, etc. Scientists are invited to contribute to the site by summarizing their latest peer-reviewed publications as 1 minute reads that can be posted on the site. This way, their work may reach a wide target audience.

Web address: www.climatechange.post.com

TOOL-SHED SESSION

Taiwan Climate Change Projection Information and Adaptation Knowledge Platform

Tzu-Ming Liu (Taiwan) 1; Hsinchi Li (Taiwan) 1; Yung-Ming Chen (Taiwan) 1; Chao-Tzuen Chen (Taiwan) 1

1 – National Science and Technology Center for Disaster Reduction

Taiwan Climate Change Projection Information and Adaptation Knowledge Platform (TCCIP) is a new integrated climate change service platform to provide comprehensive climate change data, information, knowledge services for governments, research, industries and the public (GRIP) in Taiwan. The platform provides user-friendly service which was developed through the design thinking method. Design thinking is different from the traditional design method. It is based on the “people-oriented” as the starting point. From the perspective of the needs of use, and considering the user’s using behavior, while considering the feasibility of technology and business, the product can be designed to meet the needs of the user and that the user wants to use. This design approach is in line with the concept of Co-Design. It makes the integrated platform which provide climate change relevant data, information, and knowledge to meet the needs of decision makers and academic research teams. In order to understand what kind of climate service that users really need, we analysed user needs and usage behavior through users’ forums, user questionnaire feedback and discussion.

TCCIP provides the easy understand information of observed changing climate and projected downscaled changing climate, such as climate change index atlas. Not only providing figures but also providing data, TCCIP makes climate change data and information acquirement easier than ever. The Climate Change Data Store provides climate change data like a shopping website. Some data were made to data API to provide user to develop tools on their own websites or App for mobile phone. The new platform is still under construction and will be published this July.

The English version of the new platform will be built and demonstrated for ECCA before May 15.

Web address: https://tccip.ncdr.nat.gov.tw/v2/index_en.aspx



TS017

15:30 Wednesday

Room S15

Keywords: TCCIP, design thinking, co-design, co-delivery, co-production

START OF NEXT SESSION

SP032



16:15 Wednesday

Room PA

Keywords: integrated fire management, fire risk governance, extreme wildfire events, innovative solutions and successful case studies

SCIENCE PRACTICE SESSION

Extreme wildfire events: addressing the challenges faced by national governance and management systems across Europe

Nicolas Faivre (Belgium) 1; Maddalena Dali (Belgium) 2; Karolina Kalinowska (Belgium) 3; Markus Leitner (Austria) 4; José Manuel Moreno (Spain) 5; Francisco Manuel Cardoso De Castro Rego (Portugal) 6

1 – European Commission DG Research and Innovation; 2 – European Commission DG CLIMA; 3 – European Commission DG ECHO; 4 – Umweltbundesamt GmbH; 5 – University of Castilla La Mancha; 6 – Universidade Técnica de Lisboa – Instituto Superior de Agronomia

Throughout 2017, a series of wildfires swept through southern European countries, spreading also to northern Europe in 2018. These wildfires incurred extraordinary socioeconomic impacts in both loss of human lives and economic damage. Such extreme wildfire events that experts refer to as ‘megafires’ originate from the cumulative effects of global warming, the expansion of fire-prone landscapes, and population shifts into and out of wildland and rural settings. This new wildfire context calls for an integrated fire management approach which tackles the socio-economic, climate and environmental roots of mega-fires through more balanced landscape management strategies that account for prevention, education, preparedness, suppression and post-fire recovery aspects. The session will take stock of innovative solutions and successful case studies across Europe that demonstrate how to prevent and recover from extreme wildfire events. Not least, it should allow for an exchange between the key actors and partners to address the barriers in governance and management, which often impede an integrated forest fire management strategy.

Presenters

Prof. Francisco Castro-Rego | Universidade Técnica de Lisboa

M. Inazio Martinez de Arano (ES) | European Forest Institute

M. Marc Castellnou (ES) | Fire Service of Catalunya

M. Athanasios Sfetsos (GR) | Demokritos

M. Peter Moore (AUS) | FAO-Forestry Department

Prof. Fantina Tedim (PT) | University of Porto

Ms Inês Vieira (PT) | University of Lisbon

M. Antonio Soares (PT) | National Association of Rural Owners

SCIENCE PRACTICE SESSION

How CCA and DRR communities use strategic narratives for joint purposes: preparedness, accessing funding, improving health & ecosystem-based services

Julia Bentz (Portugal) 2; **Gabriela Michalek** (Germany) 3; Reimund Schwarze (Germany) 3; Julia Barrott (United Kingdom) 4; Sukania Bharwani (United Kingdom) 4; Rob Swart (Netherlands) 1

1 – Wageningen University and Research; 2 – Faculty of Sciences, University of Lisbon; 3 – Helmholtz Centre for Environmental Research; 4 – Stockholm Environment Institute

Climate Change Adaptation (CCA) and Disaster Risk Reduction (DRR) communities have much in common. They deal with floods, heat waves and droughts and strive both to minimize their impacts by improving. They try to foster community preparedness. They aim to deal with health impacts. They develop ecosystem based solutions and access funding to implement solutions. However, the actual collaboration between these CCA and DRR holds off.

Narratives are stories in mind with a purpose behind. Narratives can be applied as a 'strategic' tool to help overcome the gaps between the communities and foster joint collaboration to achieve these purposes. Sociological and psychological studies have confirmed that well-crafted stories that draw on target groups' joint values and norms, can influence the perception of an issue and evoke respective actions. In this session, we would like to share PLACARD experiences with 'strategic' narratives in different contexts. In particular, we want to explore with session participants how narratives can be used to increase:

- community preparedness
- ease access to funding
- develop joint health initiatives and
- foster the implementation of ecosystem based solutions.

Presenters

Julia Bentz | FFCUL | Creating narratives of change: Arts-based approaches to climate and behavior change

Julia Barrott and Sukania Bharwani | Stockholm Environment Institute | Understanding disparities in language: How terms are used differently across subject areas and geographic boundaries

Ingrid Coninx | Wageningen University & Research | How to build successful narratives?

Gabriela Michalek | UFZ | Learning about narratives



SP033

16:15 Wednesday

Room S1

Keywords: narrative, collaboration, risk preparedness, resilience, funding

SS030



16:15 Wednesday

Room S2

Keywords: adaptation planning, coastal hazards, climate impact assessment, fluvial and pluvial flooding, hydro-economic modelling

SCIENCE SESSION

Adaptation to river and coastal flooding

Chair | Filipe Duarte Santos | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Presentation of results from interdisciplinary science that covers concepts at the interface between hydrology, oceanography, impact assessment, coastal and land-use management, focusing on disaster risk reduction and adaptation to sea level rise, coastal and river flooding.

OC175

Assessing sea level rise risks in changing coastal environments: a national assessment supporting disasters management and climate change adaptation

Elisa Furlan (Italy) 1,2; Silvia Torresan (Italy) 1,2; Petra Dalla Pozza (Italy) 2; Diana Derepasko (Italy) 2; Andrea Critto (Italy) 1,2; Melania Michetti (Italy) 1; Federica Zennaro (Italy) 1; Antonio Marcomini (Italy) 1,2; **Arthur Essenfelder** (Italy) 1

1 – Fondazione Centro-Euro Mediterraneo sui Cambiamenti Climatici (CMCC); 2 – University Ca' Foscari Venice, Department of Environmental Sciences, Informatics & Statistics

OC176

Climate change risk assessment on Blue Economy and impact chain analysis for 12 European Islands

Elodie Briche (France) 1; Ghislain Dubois (France) 1; Matías González Hernández (Spain) 2; Carmen García Galindo (Spain) 2; Yen E. Lam (Spain) 2; Piero Lionello (Italy) 3; Valentina Bacciu (Italy) 3; Ulrike Lehr (Germany) 4

1 – TEC Conseil; 2 – Universidad de Las Palmas de Gran Canaria (ULPGC); 3 – Centro Euro-Mediterraneo sui Cambiamenti Climatici (CMCC); 4 – Gesellschaft für Wirtschaftliche Strukturforschung mbH (GWS)

OC177

Managing flood risks using the Future Danube Model

Kai Schröter (Germany) 1; Max Steinhausen (Germany) 1; Michel Wortmann (Germany) 2; Stefan Lüdtke (Germany) 1; Ben Hayes (United Kingdom) 3; Viktor Rözer (Germany) 1; Martin Drews (Denmark) 4; Fred Hattermann (Germany) 2; Heidi Kreibich (Germany) 1

1 – German Research Centre for Geosciences GFZ, Section 54. Hydrology; 2 – Potsdam Institute for Climate Impact Research; 3 – OASIS Imf; 4 – Technical University of Denmark, Management Engineering

A tale of two rivers: hydro-economic modelling for the assessment of trading opportunities and return-flow externalities in inter-basin water markets

Arthur H. Essenfelder (Italy) 1; C. Dionisio Pérez-Blanco (Spain) 2; Carlos Gutiérrez-Martín (Spain) 3

1 – CMCC@Ca'Foscari; 2 – Universidad de Salamanca; 3 – Universidad de Córdoba

Effects of climate change in an agricultural area in the Tagus estuary (Portugal)

Paula Freire (Portugal) 1; Marta Rodrigues (Portugal) 1; André B. Fortunato (Portugal) 1

1 – Laboratório Nacional de Engenharia Civil

The impact of climate change and land use change in a fire-prone forest in NW Portugal

Amandine, Valérie Pastor (France) 1,2; Rossano Ciampalini (France) 2; Myke Koopmans (France) 3; Yves Lebissonais (France) 2; Jantien Baartman (Netherlands) 3; Damien Raclot (France) 2; Joao Pedro Nunes (Portugal) 1

1 Centre for Ecology, Evolution and Environmental Changes, Lisbon University; 2- LISAH, Univ Montpellier, INRA, IRD, Montpellier SupAgro, Montpellier; 3 Department of Soil Physics, Wageningen University, The Netherlands

SCIENCE PRACTICE SESSION

Transnational cooperation in climate change adaptation and disaster risk reduction in Europe: challenges, gaps and lesson learned

Sergio Castellari (Denmark) 1; Emiliano Ramieri (Italy) 2

1 – European Environment Agency (EEA); 2 – Thetis

This Session provides an overview and analysis of the actions on climate change adaptation (CCA) and disaster risk reduction (DRR) promoted in 12 European transnational regions, as defined for the European Territorial Cooperation (ETC), by considering:

- INTERREG cooperation programmes (in particular INTERREG B);
- EU macro-regional strategies;
- International Conventions; Other cooperation initiatives;
- Strategies and plans on CCA actually promoted within the 12 transnational regions;
- Projects and other knowledge sharing initiatives (including scientific networks).

OC178

OC179

OC180



SP034

16:15 Wednesday

Room S5

Keywords: transnational cooperation, knowledge sharing, Interreg

Territories belonging to the same transnational region are characterized by common economic, social and environmental characteristics and tend to share common climate change challenges. The analysis of cooperation initiatives on CCA and DRR through the lens of these 12 transnational regions appears particularly appropriate as they provide a commonly accepted spatial subdivision of the European territory in the frame of the Cohesion Policy. Some of the transnational regions partially or totally overlap with EU macro-regional strategies and/or other relevant cooperation initiatives, such as sea and territorial conventions; these can – and indeed are expected to – integrate and even enhance the role on CCA and DRR cooperation played by the ETC. While macro-regional strategies have so far been established only for four transnational regions, the current ETC programme has established funding programmes for all the 12 transnational regions as part of the three pillars of the EU's economic, social and territorial development as pursued by the Cohesion Policy (CP).

On the other side, commonality of environmental and climate problems across borders or within a common geographic space sharing vulnerable environmental resources, like a river or sea basin, are driving member states to new forms of cross-border and transnational aggregation.

Furthermore, in the European context, these EU transnational regions and macro-regional strategies are consolidating in some cases a new layer of multi-level governance in which the EU attempts, from different angles and levels of aggregation, to involve sub-national units of government in addressing shared challenges and opportunities across member states, including those related to CCA and DRR, by creating a mix of institutional design which is capable of “integrating top-down and bottom-up initiatives, as well as normative and regulatory institutional guiding elements” (Van Well and Scherbenske, 2014).

Presenters

1. Sergio Castellari | European Environment Agency | Setting the scene

2. Manuel Gonzalez Evangelista | Interact Programme | Interreg Climate Change and Risks Network – how cooperation projects contribute to climate change adaptation

3. Nina Jernberg | Council of the Baltic Sea States, Coordinator of Policy Area Secure, EU Strategy for the Baltic Sea Region | CCA and DRR in the frame of the EU Strategy of Baltic Sea Region

4. Wolfgang Lexer | Environment Agency Austria, Member of the Alpine Climate Board | The experience of the Alpine Convention: joining forces towards climate-resilient Alps

5. Katarzyna Marini | Mediterranean Experts on Climate and environmental Change (MedECC) | MedECC, a science-policy interface on risks associated to climate and environmental changes in the Mediterranean region

6. Emiliano Ramieri | ETC/CCA-Thetis | Adaptation policies and knowledge base in transnational regions in Europe

SCIENCE SESSION

Adapting to high-end and dangerous climate change

Chair | Diogo de Gusmão-Sørensen | DG RTD, European Commission

Review of the most recent research on what it means to live in a high-end climate-changed planet Earth – more than 1.5°C of warming – looking at a range of different scenarios, impacts across a multitude of sectors and understanding how post-Paris societies are preparing to avoid high-end climate change.

Differences between low-end and high-end climate change impacts across multiple sectors: what does this mean for adaptation?

Paula Harrison (United Kingdom) 1; **Robert Dunford** (United Kingdom) 1; **Ian Holman** (United Kingdom) 2; **George Cojocaru** (Romania) 3; **Marianne Madsen** (Denmark) 4; **Pei-Yuan Chen** (United Kingdom) 1

1 – Centre for Ecology & Hydrology; 2 – Cranfield University; 3 – TIAMASG; 4 – Danish Meteorological Institute

Advancing the use of scenarios to understand society's capacity to act towards achieving the 1.5°C target

Simona Pedde (Netherlands) 1,2; **Kasper Kok** (Netherlands) 1; **Katharina Hölscher** (Netherlands) 3; **Ian Holman** (United Kingdom) 4; **Rob Dunford** (Netherlands) 5; **Niki Frantzeskaki** (Netherlands) 3; **Jill Jäger** (Austria) 6; **Alison Smith** (United Kingdom) 7

1 – Wageningen University and Research; 2 – Center of Ecology and Hydrology (UK); 3 – DRIFT; 4 – Cranfield University; 5 – CEH; 6 – Independent Scholar; 7 – Oxford University

Are European decision-makers preparing for high-end climate change?

Tiago Capela Lourenço (Portugal) 1; **Adis Dzebo** (Sweden) 2; **Henrik Carlsen** (Sweden) 2; **Miriam Mcmillan** (Australia) 3; **Linda Juhász-Horváth** (Hungary) 4; **Laszlo Pinter** (Hungary) 4

1 – Climate Change Impacts, Adaptation and Modelling group (CCIAM-cE3c), University of Lisbon, Portugal; 2 – Stockholm Environment Institute, Stockholm, Sweden; 3 – Department of the Environment and Energy, Canberra, Australia; 4 – Department of Environmental Sciences and Policy, Central European University, Budapest, Hungary



SS031

16:15 Wednesday

Room S6

Keywords: adaptation, extreme events, flooding, high-end, impacts, Paris agreement, scenarios

OC181

OC182

OC183

OC184

Pursuing the SDGs in a post-Paris Agreement world – adaptation driven opportunities and trade-offs

Lamprini Papadimitriou (United Kingdom) 1; **Ian Holman** (United Kingdom) 1; **Robert Dunford** (United Kingdom) 2; **Paula Harrison** (United Kingdom) 3

1 – Cranfield Water Science Institute; 2 – Centre for Ecology and Hydrology, Wallingford; 3 – Centre for Ecology and Hydrology, Lancaster

OC185

What does 1.5°C mean for vulnerable deltas? A study of the Ganges-Brahmaputra-Meghna

Sally Brown (United Kingdom) 1; **Robert J Nicholls** (United Kingdom) 2; **Attila Lazar** (United Kingdom) 2; **Duncan D Hornby** (United Kingdom) 2; **Chris Hill** (United Kingdom) 2; **Sugata Hazra** (India) 3; **Kwasi Appeaning Addo** (Ghana) 4; **Anisul Haque** (Bangladesh) 5; **John Caesar** (United Kingdom) 6; **Emma Tompkins** (United Kingdom) 2

1 – Bournemouth and Southampton Universities; 2 – University of Southampton; 3 – Jadavpur University; 4 – University of Ghana; 5 – Bangladesh University of Engineering and Technology; 6 – Met Office

OC186

Adaptation to extreme events – barriers to adapt to future extreme weather events in municipalities in western Norway

Helene Amundsen (Norway) 1

1 – CICERO

R7 SCIENCE PRACTICE SESSION

SP035



16:15 Wednesday

Room S7

Keywords: climate change impacts, heat stress and heavy rain resilience, small and medium-sized municipalities, adaptation measures, science-policy-practice interface

EU LIFE programme: Supporting integration and co-production of climate change adaptation in small and medium-sized municipalities across the EU

Eliška K. Lorencová (Czech Republic) 1; **Joerg Cortekar** (Germany) 2; **Majana Heidenreich** (Germany) 3; **Bettina Fischer** (Austria) 4; **Majana Putnina** (Latvia) 5; **Dominic Rumpf** (Germany) 6; **Christian Bernhofer** (Germany) 3; **Vojtěch Cuřin** (Czech Republic) 1

1 – Global Change Research Institute of the Czech Academy of Sciences (CzechGlobe); 2 – Climate Service Center Germany (GERICS); 3 – Technische Universität Dresden (TU Dresden); 4 – Provincial Government of Styria, Technical department for energy technology and climate protection (Land STMK); 5 – Valka Municipality Council, Latvia; 6 – Saxon State Office for Environment, Agriculture and Geology (LfULG), Saxon State Ministry for Environment and Agriculture

Municipalities are important actors in climate change adaptation. However, small and medium-sized municipalities often have deficiencies in:

- knowledge on regional climate change,
- identifying specific risks at the local level, and
- personnel and financial capacities to integrate climate change adaptation into decision-making practice.

The aim of this session is to demonstrate and discuss different approaches to foster integration and co-production of climate change adaptation in small and medium-sized towns across the EU.

The session is organized as a joint session of projects from the EU LIFE programme focusing on climate change adaptation in the urban environment and related issues of urban-rural interaction. Especially projects of the LIFE programme focussing on urban adaptation are invited. Topics of the session relate to the improvement and mainstreaming of climate adaptation measures, among others in the area of heavy rain and heat stress resilience. Specific activities may also include the restoration and safeguarding of water systems and the built environment.

Adaptation measures refer to local action planning, tools for knowledge dissemination, and implementation of particular actions. The session focuses on knowledge co-production and the science-policy interface between research institutions, regional authorities, municipalities and citizens. Lessons learned and best practices from integrating and mainstreaming climate change adaptation in small and medium-sized municipalities across Europe will be presented. Learning from demonstration cases as well as ‘learning from failures’ are important cornerstones for progress. The session will also present innovative approaches to encourage and organise adaptation in small and medium-sized communities that focus on co-development of urban adaptation measures together with the local municipalities.

Presenters

Majana Heidenreich *et al.* | Technische Universität Dresden | The EU project LIFE LOCAL ADAPT: Challenges for small and medium-sized municipalities to adapt to climate change in four European regions

Eliška K. Lorencová *et al.* | Global Change Research Institute of the Czech Academy of Sciences | Lessons learned and best practices from LIFE LOCAL ADAPT municipalities

Rafael Ataz | Instituto de Fomento de la Región de Murcia | LifeAdaptate project: Supporting commitment of the European municipalities

Gianluca Cocco *et al.* | Regione Autonoma della Sardegna | The LIFE MASTER ADAPT project: MAINSTReaming Experiences at Regional and local level for ADAPTation to climate change

Katarzyna Jankowska *et al.* | Radom Municipality | New approach to climate change adaptation in Radom based on the presently conducted LIFE project

Marta Suanzes *et al.* | Factor | Project Life-Good Local Adapt: Facilitating good adaptation in urban areas of small and medium-sized municipalities of the Basque Country, Spain

SCIENCE SESSION

SS032



16:15 Wednesday

Room S8

Keywords: climate proofing, extreme heat stress, landslides, river-flow, transport, urban water

Characterising risks of extreme climate events for informing adaptation

Chair | Roger Jones | Victoria University

Presentation of examples that demonstrate what type of climate and other information may need to be integrated to facilitate the assessment of climate change risks, and to support the identification and evaluation of appropriate adaptation measures.

OC187

Assessing the variations induced by climate changes in flow-like landslide risk for a transport infrastructures in Nocera Inferiore (Southern Italy)

Marco Uzielli (Italy) 1,2; Guido Rianna (Italy) 3; Fabio Ciervo (Italy) 3; Paola Mercogliano (Italy) 3,4; Unni K. Eidsvig (Norway) 2; **Alfredo Reder (Italy) 3**

1 – Georisk Engineering S.r.l.; 2 – NGI (Norwegian Geotechnical Institute); 3 – CMCC Foundation Euromediterranean Center on Climate Change; 4 – CIRA (Centro Italiano Ricerche Aerospaziali)

OC188

Climate indices for adaptation of the german transport system

Andreas Walter (Germany) 1; Stephanie Hänsel (Germany) 1; Stefan Krähenmann (Germany) 1; Christoph Brendel (Germany) 1; Michael Haller (Germany) 1; Kelley Stanley (Germany) 1; Christene Sylvia Razafimaharo (Germany) 1; Susanne Brienlen (Germany) 1; Enno Nilson (Germany) 2; Markus Forbriger (Germany) 3

1 – Deutscher Wetterdienst; 2 – Bundesanstalt für Gewässerkunde; 3 – Eisenbahn-Bundesamt

OC189

Simulation of maximum and minimum annual river flows for 2080 based on RCP climate scenarios and Kaczawa River in Poland

Leszek Kuchar (Poland) 1; Slawomir Iwanski (Poland) 1; Leszek Jelonek (Poland) 2

1 – Wroclaw University of Environmental and Life Sciences, Department of Mathematics, Wroclaw (Poland); 2 – Institute of Meteorology and Water Management, Wroclaw (Poland)

OC190

BINGO PROJECT: Impacts of climate change on the urban water system – a case study from Bergen

Tone Muthanna (Norway) 1; Erle Kristvik (Norway) 1; Sveinung Sægrov (Norway) 1; Magnar Sekse (Norway) 2

1 – Norwegian University of Science and Technology (NTNU); 2 – Bergen Municipality

The ClimaProof project – Providing a new set of bias-corrected climate change scenarios for the Western Balkan Region

Maria Wind (Austria) 1; **Barbara König** (Austria) 1; **Herbert Formayer** (Austria) 1

1 – University of Natural Resources and Life Sciences, Vienna

Extreme heat vulnerability assessment for the metropolitan area of Barcelona, guide to calculate vulnerability, recommendations for future action and study

Julia Isabella Cannata Pechs (Spain) 1; **Joan Albert López Bustins** (Spain) 1; **Ana Romero Càlix** (Spain) 2; **Ernest Ruiz Almar** (Spain) 1,2; **Javier Martín Vide** (Spain) 1

1 – Universitat de Barcelona; 2 – Àrea Metropolitana de Barcelona (AMB)

SCIENCE PRACTICE SESSION

New developments in risk governance: exploring risk attitudes and preferences for climate adaptation

Elisa Sainz De Murieta (Spain) 1,2; **Ibon Galarraga** (Spain) 1; **Anil Markandya** (Spain) 1

1 – Basque Centre for Climate Change (BC3); 2 – Grantham Research Institute (LSE)

Stakeholders are increasingly demanding science to provide actionable, solution-oriented insights that can inform climate adaptation policies. In this context, there is arising interest in using risk-based approaches, including appropriate methods and metrics, to support adaptation decision-making. Risk management is a well-established discipline, which is familiar not only to decision-makers but also to many stakeholders, financial entities and private companies, and it has been previously applied to deal with current natural hazards. Risk-based methodologies enable dealing with uncertainty and defining robust measures that perform well under a wide variety of scenarios, which is very relevant to build flexibility in a dynamic climate change setting.

Assessing the probability and magnitude of climate change impacts has received much of the attention so far. However, risk affects and is perceived differently by different actors, as they might present different exposures, vulnerability, attitudes and capabilities to deal with climate change risks. Actors may include individuals, policy-makers, businesses, NGOs, social groups, etc. As a result, risk preferences are strongly dependent on social, cultural, and economic contexts, which shapes what risks are considered acceptable, tolerable or intolerable.

OC191

OC192



SP036

16:15 Wednesday

Room S9

Keywords: risk, climate change adaptation, governance, behaviour

Applying risk-based approaches to climate change adaptation has been suggested to be relevant to account for different perceptions of risk and corresponding social preferences, including identifying risk thresholds, prioritising interventions, discussing available strategies to manage and cope with risk and estimate the costs or trade-offs of the different options.

The aim of this session is to examine recent developments on risk-based approaches to adaptation and the opportunities and barriers of risk attitudes and preferences in policymaking. We will present different approaches to deal with risk preferences at different scales (national, local, individual) and analyse how the results can be used to increase policy effectiveness.

We expect the session to: 1) deliver a future outlook and research agenda, 2) give practical examples of best practices, and 3) provide some convergence in the rapidly expanding discussions surrounding risk governance.

This work is currently being developed under the project COACCH_ Co-designing the Assessment of Climate CHange costs funded by the European Commission H2020 Research Programme (grant no. 776479).

Presenters

Introductory presentation: **Reinhard Mechler** | IIASA | The evolution of risk in socio-economic analysis of disaster management and climate change

1. Kees van Ginkel 1,2; Marjolijn Haasnoot 1,3; Wouter Botzen 2; Ad Jeuken 1; Karl Steininger 4; Gabriel Bachner 4; Paul Watkiss 5; Esther Boere 6; Jochen Hinkel 7 | Stakeholder perceptions of risks of climate-induced socio-economic tipping points

1 – Deltares, Delft; 2 – Institute for Environmental Studies, VU University Amsterdam; 3 – Utrecht University; 4 – University of Graz; 5 – Paul Watkiss Associates, Oxford; 6 – International Institute for Applied System Analysis, Laxenburg; 7 – Global Climate Forum, Berlin

2. Elisa Sainz de Murieta, Ibon Galarraga and Marta Olazabal (BC3) | Involving stakeholders in decision-making about risk: a case for sea-level rise

Basque Centre for Climate Change (BC3)

3. Milan Ščasný and Iva Zvěřinová | Public acceptability of climate change adaptation measures to reduce negative impacts of droughts

Charles University Environment Centre

4. Ambika Markanday 1; Ibon Galarraga 1 and Steffen Kalbekken 2 | Seeing is believing: the power of visual and impact framing for determining risk acceptability on climate change

1 – Basque Centre for Climate Change (BC3); 2 – CICERO Center for International Climate Research

5. Max Tesselaar 1; Paul Hudson 2; Wouter Botzen 1,3; Jeroen Aerts 1 | Efficient and

equitable flood insurance arrangements for future flood risk under climate change

1 – Institute for Environmental Studies (IVM), Vrije Universiteit (VU) Amsterdam; 2 – Institute of Earth and Environmental Science, University of Potsdam; 3 – Utrecht University School of Economics (USE), Utrecht University (UU).

6. Vera Ferreira | Climate change, human security and migration: an integrated approach

Instituto de Ciências Sociais da Universidade de Lisboa

SCIENCE SESSION

Climate scenarios, seasonal forecasts and hydrological modelling

Chair | Frederik Accoe | EASME

Synthesis of research focused on the hydro-climate impacts and consequences of hydrological extremes by using climate scenarios, seasonal forecasts and hydrological modelling to inform adaptation and disaster risk reduction, from the European to the reservoir scale.

Decadal predictions for hydrological extremes assessment in Europe

Tim Aus Der Beek (Germany) 1; **Adriana Bruggeman** (Cyprus) 2; **Rui Rodrigues** (Portugal) 3; **Beniamino Russo** (Spain) 4,5; **Tone Muthanna** (Norway) 6; **Marc Scheibel** (Germany) 7; **Marjolein Van Huijgevoort** (Netherlands) 8

1 – IWW Water Centre; 2 – The Cyprus Institute; 3 – Laboratório Nacional de Engenharia Civil; 4 – Aquatec; 5 – SUEZ Advanced Solutions; 6 – Norwegian University of Science and Technology; 7 – Wuppertalverband; 8 – KWR

On the frequency and severity of droughts under climate change in the Iberian Peninsula.

Rodrigo Proença De Oliveira (Portugal) 1; **Joana Simões** (Portugal) 2; **Melissa Nogueira** (Brazil) 1

1 – Instituto Superior Técnico – Universidade de Lisboa; 2 – Bluefocus



SS033

16:15 Wednesday

Room S10

Keywords: climate impacts, climate scenarios, droughts, hydrological modelling, seasonal forecasts, water cycle

OC193

OC194

OC195

Climate change impacts on Guadiana transboundary river basin, Spain and Portugal

Carla Palop-Donat (Spain) 1; Javier Paredes-Arquiola (Spain) 1; Joaquín Andreu-álvarez (Spain) 1

1 – Water Resources Engineering Research Group / Institute of Water and Environmental Engineering / Universitat Politècnica de València

OC196

Estimating the economic added-value of improved seasonal forecasts for the Jucar river basin (Eastern Spain)

Hector Macian-Sorribes (Spain) 1; Ilias Pechlivanidis (Sweden) 2; Louise Crochemore (Sweden) 2; Manuel Pulido-Velazquez (Spain) 1

1 – Universitat Politècnica de València (UPV); 2 – Swedish Meteorological and Hydrological Institute (SMHI)

OC197

GestAqua.AdaPT – climate change impacts and operation adaptation in two Mediterranean reservoirs in southern Portugal: Monte Novo and Vigia

Paulo Alexandre Diogo (Portugal) 1; João Pedro Nunes (Portugal) 2; Pedro Beça (Portugal) 1; António Carmona Rodrigues (Portugal) 1; Cláudia Carvalho Dos Santos (Portugal) 3; João Rocha (Portugal) 4

1 – Faculty of Sciences and Technology, New University of Lisbon, MARE; 2 – Faculty of Sciences, University of Lisbon; 3 – CIBIO-InBIO – Universidade do Porto; 4 – Universidade de Aveiro

OC198

Assessment of climate change scenarios combined with anthropogenic influences at the Große Dhünn Reservoir, Germany

Marc Scheibel (Germany) 1; Paula Lorza (Germany) 1; Eleni Teneketzi (Germany) 1; Tim Aus Der Beek (Germany) 2; Rike Becker (Germany) 2; Corinna Wilmers (Germany) 2

1 – Wupperverband; 2 – IWW

SCIENCE SESSION

SS034



16:15 Wednesday

Room S11

Keywords: decision support, flooding, participatory process, SSPs, transdisciplinarity, urban

Analysing co-production and transdisciplinarity frameworks in climate services

Chair | Christopher Lyon | Leeds University

Showcase of research that proposes frameworks for co-production and transdisciplinary adaptation strategies and climate services, tests different methods and analyses their effectiveness in inducing adaptation and engaging stakeholders.

BINGO – a dynamic framework for creating knowledge co-production

Maria João Freitas (Portugal) 1; **Sægrov Sveinung** (Norway) 2; Tonne Muthanna (Norway) 2

1 – LNEC; 2 – NTNU

A three-step participatory approach to climate service co-production

Dragana Bojovic (Spain) 1; Isadora Christel (Spain) 1; Marta Terrado (Spain) 1; Paula Gonzalez (United Kingdom) 2; Erika Palin (United Kingdom) 3

1 – Barcelona Supercomputing Center (BSC); 2 – Department of Meteorology, University of Reading; 3 – Met Office Hadley Centre (UKMO)

Testing co-exploratory approaches for decision support and eliciting information needs in urban contexts in southern Africa

Elizabeth Daniels (United Kingdom) 1; **Sukaina Bharwani** (United Kingdom) 1; Anna Taylor (South Africa) 2; Ruth Butterfield (United Kingdom) 1

1 – SEI; 2 – SEI / University of Cape Town

Going beyond knowledge integration: How participatory adaptation processes contribute to adaptation action

Torsten Grothmann (Germany) 1

1 – University of Oldenburg

Participatory scenario development and multi-criteria analysis for agricultural adaptation strategies at regional level

Carlo Giupponi (Italy) 1; Andrea Povellato (Italy) 2; Marco Valentini (Italy) 1

1 – Ca' Foscari University; 2 – CREA

Stakeholders' involvement in defining climate change adaptation strategies. The case study of Badalona in BINGO project

Montse Martinez (Spain) 1; Beniamino Russo (Spain) 1; Luca Locatelli (Spain) 1; Josep Montes (Spain) 2; Albert Pérez (Spain) 3; Esther Suárez (Spain) 4; Eduardo Martinez (Spain) 5

1 – Aquatec; 2 – Ajuntament de Badalona; 3 – Aigües de Barcelona; 4 – àrea Metropolitana de Barcelona; 5 – CETaqua

OC199

OC200

OC201

OC202

OC203

OC204

SP037



16:15 Wednesday

Room S13

Keywords: standardisation, investment criteria, decision-making, scaling adaptation, adaptive management

SCIENCE PRACTICE SESSION

Standards on climate change adaptation: a new opportunity for businesses and services

Clemens Haße (Germany) 1; Céline Phillips (France) 4; Sarah Duff (United Kingdom) 5; John Dora (United Kingdom) 3; Doogie Black (United Kingdom) 2; Beate Hollweg (Germany) 1

1 – German Environment Agency (UBA); 2 – Trioss Ltd.; 3 – John Dora Consulting Ltd; 4 – Environment & Energy Management Agency (ADEME); 5 – European Bank for Reconstruction and Development

A suite of Climate Change Adaptation (CCA) ‘Standards’ at industry, national, European, and international levels will be launched in the very near future (beginning 2019). This session brings together four of the leading experts involved in their development.

Until recently, the potential role of ‘standards’ in promoting, guiding and scaling action on CC adaptation has remained predominantly untapped. The impact that standards could have in accelerating meaningful action across businesses and services globally can be immense. Many businesses and service providers will already be able to name numerous standards that have influenced their work. CCA Standards can improve the management of climate change risks and opportunities, ensuring climate change resilience is embedded within activities, products and services. They can also play a critical role in accessing finance, in selecting suppliers, in attracting customers, in reassuring shareholders and service users, and in maintaining a high reputation.

The session will open with a ‘scene-setting’ presentation by a leading finance institution, who will define the market drivers for CCA Standards and why they will be so important to the finance community and their relationship with the business community. There will be presentation on the standards and guidance documents currently under development at ISO, the International Organization for Standardization as well as CEN, the European Committee for Standardization. And we will introduce a more demand driven perspective on user needs ranging from multilateral investment bank to national governments.

Presenters

Chair and moderation: **Céline Phillips** | Environment & Energy Management Agency (France)

1. Sarah Duff | European Bank for Reconstruction and Development, Member of the European Financing Institutions Working Group on Adaptation to Climate Change | Standards, and their role in improving the climate resilience of infrastructure investments

2. John Dora | John Dora Consulting Limited (United Kingdom) Convenor of ISO working group on principles, requirements and guidelines for adaptation | How standards could help to make better decisions in adaptation

3. Clemens Haße | Federal Environment Agency (Germany) Member of the ISO working group on vulnerability, impacts and risk assessment | On the way for a standard on vulnerability, impacts and risk assessment

4. Doogie Black | Trioss Ltd (United Kingdom), Project on European climate change resilient standards | Making existing European infrastructure standards climate change resilient

5. Beate Hollweg | Federal Environment Agency (Germany), Member of the ISO working group on investments and financing activities related to climate change | Assessing and reporting investments and financing activities regarding climate change risks

SCIENCE SESSION

Facing up to the challenges of co-producing climate adaptation and services

Chair | Hugo Costa | CCIAM-cE3c, Faculty of Sciences, University of Lisbon

Report on different approaches to facing the complexities and challenges of knowledge co-production and participatory approaches in support of climate change adaptation and disaster risk reduction, with a focus on different methodologies, tools and services for impacts and vulnerability analysis.

Co-creation of an adaptation capability-maturity framework for public sector organisations

Eleanor Murtagh (United Kingdom) 1; **Joseph Hagg** (United Kingdom) 2; **Anna Beswick** (United Kingdom) 3

1 – University of Strathclyde; 2 – University of Edinburgh; 3 – Sniffer

The risks of co-production

Oliver Gebhardt (Germany) 1; **Daniela Siedschlag** (Germany) 1; **Christian Kuhlicke** (Germany) 2

1 – Helmholtz Centre for Environmental Research – UFZ, Department of Economics; 2 – Helmholtz Centre for Environmental Research – UFZ, Department Urban and Environmental Sociology



SS035

16:15 Wednesday

Room S16

Keywords: climate services, co-production of knowledge, long-term sustainability, participative methods

OC205

OC206

OC207

Key challenges to the long-term sustainability of climate services in Europe

Marta Bruno Soares (United Kingdom) 1; **Carlo Buontempo** (United Kingdom) 2

1 – University of Leeds; 2 – European Centre of Medium Range Weather Forecasts

OC208

Examining co-production of knowledge in regional climate outlook forums

Meaghan Daly (United States of America) 1,2; **Suraje Dessai** (United Kingdom) 3

1 – University of New England; 2 – Maine; 3 – University of Leeds

OC209

Mainstreaming and supporting adaptation at sectoral, local and regional levels for climate resilience: Experience of Ireland's National Adaptation Framework

Seosamh Ó Laoi (Ireland) 1; **John O'Neill** (Ireland) 1

1 – Department of Communications, Climate Action and Environment

OC210

Enhancing the robustness of transdisciplinarity for climate services

Dragana Bojovic (Spain) 1; **Marta Terrado** (Spain) 1; **Isadora Christel** (Spain) 1; **Asuncion Lera St. Clair** (Norway) 1

1 – Barcelona Supercomputing Center (BSC)

TOOL-SHED SESSION

TS018



16:15 Wednesday

Room S15

Keywords: emergency management, big data, remote sensing, crowdsourcing, social media

Improving resilience through advanced cybertechnologies

Claudio Rossi (Italy) 1

1 – Links Foundation

I-REACT is the first European-wide platform to integrate emergency management data coming from multiple sources, including that provided by citizens through social media and crowdsourcing. This way, we will be able to produce information faster and allow citizens, civil protection services and policymakers to effectively prevent and/or react against disasters.

Web address: www.i-react.eu

TOOL-SHED SESSION

Climate-fit.city: Your one-stop shop for urban climate data and services

Filip Lefebvre (Belgium) 1; Cedric Hananel (Belgium) 2; Katrien Witpas (Belgium) 2

1 – VITO; 2 – ARCTIK – Communication for sustainability

Urban areas are very vulnerable to the impacts of climate change, because of the high concentration of people, infrastructure, and economic activity, but also because cities tend to exacerbate climate extremes such as heat waves and flash floods. Climate-fit.city will translate the best available scientific urban climate data into relevant information for public and private end-users operating in cities across a range of different sectors.

The demonstration will present the Urban Climate Data Platform and a selection of thematic applications for health, active mobility, emergency planning, cultural heritage, urban planning and building energy applications.

Web address: <http://climate-fit.city/>



TS019

17:15 Wednesday

Room S15

Keywords: urban climate data, risk assessment



Thursday 30 May

The road ahead

The goals and targets of international agreements for 2030 require a joint effort in the next decade to find integrated solutions and inspire action from different actors. Enhancing the coherence between climate change adaptation and disaster risk reduction at the research, policy and practice level is critical to move steadily in the best and most appropriated path towards a resilient Europe. What are the key messages from the conference about the path to follow and solutions and actions to overcome existing barriers?

- Message from Lisbon Municipality – European Green Capital 2020
- Call for Climate Action video by young people @ECCA
- Award distribution and hand-over to ECCA 2021

Speakers

Jean-Eric Paquet

Before starting his current position as Director-General, Jean-Eric Paquet served as a Deputy Secretary-General of the Juncker Commission, and was responsible for Better Regulation and Policy Coordination. He has worked with the European Commission in various areas, including the Directorate-General for Neighbourhood and Enlargement Negotiations (DG Enlargement) and as the Deputy Head of Cabinet for former Commissioner for Research, Philippe Busquin. Jean-Eric was a Head of Unit within the Directorate-General for Mobility and Transport (DG MOVE) before becoming the Director of DG MOVE's TEN-T and Smart Transport directorate.

Jian Liu

Dr. Jian Liu has over 30 years of experience in science and policy, specifically ecosystems management, agriculture, environment and climate change at national, regional and global levels, in particular in developing countries. Jian established and was the first Director of UN Environment's International Ecosystem Management Partnership, the first global centre on ecosystem management in the global south. He has served as the Chief of UN Environment's Climate Change Adaptation Unit and the Deputy Secretary of the Intergovernmental Panel on Climate Change (IPCC).

Closing plenary

14:00–15:45

Grande Auditório

Live performance:

Concert by the children's choir Santo Amaro de Oeiras, Maestrina Yara Gutkin

**Director-General,
Directorate-General
for Research and
Innovation (DG RTD),
European Commission**



**Chief Scientist, UN
Environment & Director
of Science Division, UN
Environment**



**Chief of Regional
Office for Europe and
Central Asia at the
United Nations Office
for Disaster Risk
Reduction (UNISDR)**



Paola Albrito

Paola Albrito directs the regional office activities of UNISDR Europe and Central Asia to support actions in building resilience to disasters within the 55 countries. Based in Brussels, Belgium, she is the UNISDR Representative to the European Institutions. Paola's previous field experience includes coordination of the Common Country Assessment and the United Nations Development Assistance Framework in Djibouti in the UN Resident Coordinator Office as well as acting as focal point to UNOCHA on emergency and rapid response; support to the UN Country Teams in developing sustainable development policies at the United Nations Staff System College in Turin; and programme evaluations as consultant at the International Labour Organisation (Geneva).

**Head of Global Disaster
Risk Reduction, Public
Health England**



Virginia Murray

Virginia Murray's role helps to implement the Sendai Framework for Disaster Risk Reduction via partnerships such as the Integrated Research on Disaster Risk (IRDR) scientific committee, and as her role as co-chair of IRDR's Disaster Loss Data (DATA). She is an executive committee member of the Committee on Data of the International Science Council (CODATA) and a member of the UNSDSN Data for Sustainable Development TReNDS committee. She has helped to develop evidence-based information and advice on flooding, heat, cold, volcanic ash, and other extreme weather and natural hazards events

**Slovenian Secretary
of State for the
Environment**



Marko Maver

Marko Maver has been an advisor at Ernst & Young Slovenia and managed environmental projects organised by Bellona Europa aisbl, Brussels (Belgium); he has also served as a State Secretary at the Office of the Minister of the Environment and Spatial Planning where he was engaged in managing, advising on and designing key system solutions. Marko has a background in environmental policy and economics, globalisation and development, and international environmental protection law.

SCIENCE PRACTICE SESSION

Decision-making options for managing risks

Diana Reckien (Netherlands) 1; Mark New (South Africa) 2; David Viner (South Africa) 3; Annamaria Lammel (France) 4; Reinhard Mechler (Austria) 5; So-Min Cheong (USA) 6

1 – University of Twente; 2 – University of Cape Town; 3 – Mott McDonald; 4 – University of Paris 8, Vincennes-Saint Denis; 5 – International Institute for Applied Systems Analysis; 6 – University of Kansas

The Working Group II (WGII) Contribution to the Assessment Reports (AR) of the Intergovernmental Panel on Climate Change (IPCC) will synthesize scientific knowledge on ‘Decision-making options for managing risks’ (AR6, WG II, chapter 17) – one of the three truly interdisciplinary chapters together with ‘Key risks across sectors and regions’ (AR6, WG II, chapter 16) and ‘Climate resilient development pathways and transformation’ (AR6, WGII, chapter 18). Fostering a focus on the interdisciplinary and cross-cutting issues of climate change impacts and adaptation is needed, as various studies have shown that the sole provisioning of climate and adaptation knowledge does not necessarily lead to adaptation uptake and the reduction of vulnerabilities. In that respect a great deal of attention will be placed upon these chapters teams and chapters – they are seen as among the key chapters of AR6 with very wide applicability.

WGII, Chapter 17: ‘Decision making options for managing risk’ will mainly deal with two aspects: 1) drivers of decision-making, including values, perceptions, differential power and influence, behaviour, and incentives, and 2) Non-monetized and monetized costs and losses, benefits, synergies, and trade-offs, including distributional aspects and the social cost of carbon. These aspects will have to be considered across multiple scales, institutions, and systems, including case studies.

This session aims to collect and pool the currently available scientific evidence on the above mentioned issues and to attract scholars working on the issues to present their knowledge and contribute to the overall assessment goals. Therefore, this session invites contributions from all relevant disciplines investigating the science of decision making of individuals, households, governments, non-governmental organizations, as well as the private sector, including insurances, related to risk, risk management, impacts, and reasons for concern. The overall target of these will be to explore ways to generate effective, fair, and inclusive decision-making. This also includes conditions and mechanisms to reduce risk, i.e. conditions for adaptation. The latter may in particular involve lessons from case studies as evidence-based stories of opportunities and barriers related to climate risk management and adaptation.

START OF SESSION



SP038

09:00 Thursday

Room PA

Keywords: perceptions and behaviour, differential power, (non-monetized) costs, other synergies and trade-offs, planning and implementation

Presenters

1. **Diana Reckien** | University of Twente
2. **Mark New** | University of Cape Town
3. **David Viner** | Mott McDonald
4. **So-Min Cheong** | University of Kansas, USA
5. **Annamaria Lammel** University of Paris 8, Vincennes-Saint Denis
6. **Reinhard Mechler** | International Institute for Applied Systems Analysis

SCIENCE SESSION

SS036



09:00 Thursday

Room S1

Keywords: action, governance, mechanisms, polycentricity, strategies, urban

Experiences and lessons in multilevel governance of adaptation and risk management

Chair | Ghislain Dubois | TEC

Showcase of experiences focused on the importance of governance arrangements in mediating complexity and uncertainty in social-ecological systems at several levels, from city to national and transnational-level.

OC211

The pursuit of well-being: opportunities and challenges for aligning flood & coastal erosion risk management with well-being in Wales, UK

Meghan Alexander (United Kingdom) 1; **Rhoda Ballinger** (United Kingdom) 1; **Emma Mckinley** (United Kingdom) 1

1 – Cardiff University

OC212

Can citizen sensing contribute to adaptive governance?

Sara Santos Cruz (Portugal) 1; **Paulo Conceição** (Portugal) 1; **Sirkku Juhola** (Sweden) 2; **Ana Monteiro** (Portugal) 1; **Filipa Malafaya** (Portugal) 1; **Paula Gonçalves** (Portugal) 1; **Tina-Simone Neset** (Sweden) 2

1 – CITTA – University of Porto; 2 – Linköping University

OC213

PolycentriCities – different paths to ambitious climate cooperation among cities

Matteo Roggero (Germany) 1; **Anastasiia Goggelf** (Germany) 1; **Klaus Eisenack** (Germany) 1

1 – Humboldt-Universität zu Berlin

Inclusive polycentric climate governance and forest-maintaining development? The case of the GCF Task Force

Fronika De Wit (Portugal) 1; Paula Martins Freitas (Brazil) 2; João Ferrão (Portugal) 1

1 – ICS – University of Lisbon; 2 – FAO Faculdade da Amazonia Ocidental

Developing a research agenda to support national climate change adaptation policy

Anne Marte Bergseng (United Kingdom) 1

1 – ClimateXChange

Mapping Institutional Innovation in multi-level governance policy contexts: the case of climate change adaptation in Portugal

Joao Mourato (Portugal) 1; Fronika De Wit (Portugal) 1; Alexandra Bussler (Portugal) 1; Joao Ferrao (Portugal) 1

1 – ICS – Institute of Social Sciences – University of Lisbon

SCIENCE SESSION

Preparedness and assessment approaches for increasing climate related risks

Chair | Karolina Kalinowska | DG ECHO, European Commission

Summary of results from research dealing with increasing water- and coastal-related climate change impacts such as changing patterns of precipitation, flooding due to increased rainfall and sea level rise, and consideration of secondary impacts, and risk management and response options.

Data analysis to support flooding risk identification: approach in Lisbon

Maria Do Céu Almeida (Portugal) 1; Maria João Telhado (Portugal) 2; Marco Morais (Portugal) 2; Luisa Coelho (Portugal) 2; Ruth Lopes (Portugal) 3; João Barreiro (Portugal) 3

1 – LNEC; 2 – CML; 3 – HIDRA

Synergies and barriers with integrating flooding from heavy rainfall into the implementation of EU floods directive

Philip Bubeck (Germany) 1; Miriam Riese (Germany) 1; Annegret H. Thieken (Germany) 1

1 – Potsdam University

OC214

OC215

OC216



SS037

09:00 Thursday

Room S2

Keywords: coastal protection, community relocation, flooding, health, risk assessment, sea level rise, setback zones

OC217

OC218

OC219

Risk assessment and preparedness to vector-borne disease eruptions in Europe and the Mediterranean: the case of West Nile virus

Shlomit Paz (Israel) 1

1 – University of Haifa

OC220

Improving development outcomes and reducing disaster risk through planned community relocation

John Handmer (Australia) 2; Johanna Nalau (Australia) 1

1 – Griffith Climate Change Response Program, Griffith Institute for Tourism, School of Environment and Science, Griffith University; 2 – Mathematics & Geospatial Science, School of Science, College of Science, Engineering & Health, RMIT University

OC221

Scoping the costs of climate change impacts through the social determinants of health and wellbeing in Victoria, Australia

Roger Jones (Australia) 1

1 – Victoria University Melbourne

OC222

Insights from testing a Dynamic Adaptive Policy Pathways approach for spatial planning at the municipal level

Christoffer Carstens (Sweden) 1; Karin Mossberg Sonnek (Sweden) 2; Riitta Rätty (Sweden) 2; Annika Carlsson-Kanyama (Sweden) 3; Per Wikman Svahn (Sweden) 3

1 – County Administrative Board Gävleborg; 2 – FOI; 3 – Royal Institute of Technology

SCIENCE PRACTICE SESSION

SP039



09:00 Thursday

Room S5

Keywords: adaptation pathways, climate-resilience, development, planning

Adaptation pathways for climate-resilient development

Saskia Werners (Netherlands) 1; Edmond Totin (Benin) 2; Samavia Batool (Pakistan) 3; James Butler (Australia) 4; Russell Wise (Australia) 4; Zita Sebesvari (Germany) 5; Douglas Wafula Juma (Australia) 6; Sharlene Gomes (Netherlands) 7

1 – Wageningen University & Research; 2 – Université; Nationale d'Agriculture; 3 – Sustainable Development Policy Institute; 4 – CSIRO Land & Water; 5 – United Nations University; 6 – Macquarie University; 7 – Delft University of Technology

Climate change is one of the major challenges for achieving sustainable development. In order for development to be climate-resilient it needs to include choices and actions that reduce climate change impacts and sustain development efforts over time. This shows how the global commitments set out in the 2030

Agenda for Sustainable Development Goals (SDGs), the Paris Agreement on climate change, and the Sendai Framework for Disaster Risk Reduction are closely linked. Integration of the three agendas offers opportunities as well as huge challenges, and calls for new approaches that take into account both short and long-term time horizons in the frame of so-called ‘climate resilient development pathways’.

In the context of adaptation to climate change, adaptation pathways have been proposed as a promising decision-focused approach for planning under uncertainty. Pathways help decision-makers to sequence measures for flexible implementation with limited undesirable and mal-adaptive consequences. In addition, participatory development of pathways potentially ‘primes’ stakeholders’ capacity for change, and facilitates transformations. Researchers and practitioners are becoming responsive to these potentials, and are experimenting with the application of pathways in different policy situations, including development, disaster risk and adaptation planning.

With this session, we want to discuss how adaptation pathways can make development climate-resilient. We will present cases of pathway development, which range (i) in methodological approach from community-based to expert-driven, (ii) in goal from adaptation policy to capacity building, and (iii) in focus from incremental to transformational change. Based on the cases, we propose guiding principles for pathway formulation. In addition, we will discuss how co-creation of pathways can give actors agency to plan and implement activities following an integral vision of sustainable development, disaster risk reduction and climate change resilience.

Our session brings together a dedicated team of researchers and strategic partners from four consortia supported by the Collaborative Adaptation Research Initiative in Africa and Asia (CARIAA) Programme www.cariaa.net, together with CSIRO, the United Nations University, the Stockholm Resilience Centre, and Delft University of Technology. Together we pitch and discuss examples of pathway development from semi-arid and coastal regions of West Africa, Pakistan, India, Bangladesh, Nepal, Papua New Guinea and Vietnam.

Presenters

1. Saskia Werners | Wageningen University & Research, the Netherlands | Framing adaptation pathway development and guiding principles

2. Edmond Totin | Université Nationale d’Agriculture-Benin | Potential of scenario planning to support adaptation pathways in rural Mali

3. Murtuza Zulkar Nain Noman | General Economics Division – Planning Commission, Bangladesh | Adaptation pathways development under the Bangladesh Delta Plan 2100

4. Samavia Batool | Sustainable Development Policy Institute, Pakistan | Adaptation pathways for climate resilient cotton production in Pakistan

5. Katharine Vincent | KULIMA. South Africa | The process of developing adaptation policy trajectories in the DECCMA project

6. James Butler and Russell Wise | CSIRO Land & Water, Australia | Adaptation pathways for seascapes: Integrating politics, decision-making and capacity-building in Papua New Guinea

7. Zita Sebesvari | United Nations University, Germany | Resilience in deltas at the crossroads of various development pathways

8. Douglas Wafula Juma | Macquarie University, Australia | The fitness of adaptation pathways

9. Sharlene Gomes and Leon Hermans | Delft University of Technology, the Netherlands | Development of adaptation pathways for peri-urban areas in India

10. Discussant: Fatima Denton | United Nations University Institute for Natural Resources in Africa (UNU-INRA)

SCIENCE SESSION

SS038



09:00 Thursday

Room S6

Keywords: climate change, co-creation, infrastructures, natural hazards, resilience, risk assessment

OC223

Assessment methods and approaches for climate vulnerability and resilience

Chair | Reimund Schwarze | Helmholtz Centre For Environmental Research – UFZ

Illustrative case studies focused on methodological approaches to the assessment of impacts, vulnerability, risks and resilience to climate change, including analysis of infrastructure, systems and sectors at the national- and city-level.

Co-creation of climate resilience for interconnected critical infrastructures. The EU-CIRCLE approach

Athanasios Sfetsos (Greece) 1; Diamando Vlachogiannis (Greece) 1; Frederique Giroud (France) 2; Alice Clemenceau (France) 2; Catherine Freissinet (France) 3; Jean Lecroart (France) 3; Louisa Shakou (Cyprus) 4; Geroge Boustras (Cyprus) 4; Lydia Vamvakieridou-Lyroudia (United Kingdom) 6; Albert Chen (United Kingdom) 6; Fuad Ali (United Kingdom) 7; Bingu Ingirige (United Kingdom) 7; Ralf Hedel (Germany) 8; Stefan Hahmann (Germany) 8; Ilias Gkotsis (Greece) 9; Geroge Eftychidis (Greece) 9; Dave Stewart (United Kingdom) 5; Mike Wood (United Kingdom) 5

1 – NCSR Demokritos; 2 – CEREN; 3 – ARTELIA; 4 – EUC; 5 – Torbay Council; 6 – University of Exeter; 7 – University of Salford; 8 – Fraunhofer; 9 – KEMEA

How vulnerability assessment can help to develop effective climate actions

Ares Gabàs (Spain) 1; Irma Ventayol (Spain) 1

1 – Barcelona City Council – RESCUE partner

Interacting climate risks within the built environment, natural environment and infrastructure: evidence in support of the third UK CCRA

Paul Munday (United Kingdom) 1; Chris Rees (United Kingdom) 2

1 – WSP; 2 – Risk Solutions

Driving climate change adaptation through Environmental Impact Assessment (EIA): emerging practice on assessing resilience of proposed projects

Nikki Van Dijk (United Kingdom) 1; Paul Munday (United Kingdom) 1; Tom Wood (United Kingdom) 1; Katharine Thorogood (United Kingdom) 1

1 – WSP

Adapting to climate change: a replicable case study in the power generation sector

Chiara Di Silvestro (Italy) 1

1 – Tractebel – ENGIE

A cultural heritage sector approach to assessing climate change risk

David Harkin (United Kingdom) 1; Mairi Davies (United Kingdom) 1; Emily Tracey (United Kingdom) 1

1 – Historic Environment Scotland

SCIENCE SESSION

Climate change adaptation and sustainable development

Chair | Miguel Martínez-Botí | DG RTD, European Commission

Presentation of research that explored and tracked co-benefits and trade-offs between adaptation and mitigation, assessed the water-energy-food nexus, and examined the legal dimensions of climate change-induced migration, in view of the Sustainable Development Goals and increased ambition.

OC224

OC225

OC226

OC227

OC228



SS039

09:00 Thursday

Room S7

Keywords: global stocktake, migration, Paris Agreement, sustainable development goals, trade-offs, water energy-food nexus

OC230

Adaptation-mitigation trade-offs in the European land system

Mark Rounsevell (Germany) 1; Calum Brown (Germany) 1; Heera Lee (Germany) 1; Bumsuk Seo (Germany) 1

1 – Karlsruhe Institute of Technology

OC231

The development of a Water-Energy-Food nexus index, and its application to the Southern African Development Community

Gareth Simpson (South Africa) 1

1 – Jones & Wagener

OC232

The economics of the water-food-welfare nexus: learning from a hydro-economic model

Roberto Ponce-Oliva (Chile) 1; Francisco Fernandez-Jorquera (Chile) 2; Felipe Vasquez-Lavin (Chile) 3

1 – School of Business and Economics, Universidad del Desarrollo. Chile; 2 – School of Agronomy, Faculty of Sciences, Universidad Mayor, Santiago, Chile; 3 – School of Business and Economics. Universidad del Desarrollo. Chile

OC233

Forest management to decrease energy consumption for urban water supply in a mixed groundwater and surface water system

Nicu Constantin Tudose (Romania) 1; Cezar Ungurean (Romania) 1; **Mirabela Babata** (Romania) 1; Serban Octavian Davidescu (Romania) 1

1 – National Institute of Research and Development in Forestry

OC234

Climate change induced migration: deliberations and interstices under present international legal regime

Vikram Singh (India) 1

1 – Ph.D Scholar at National Law School of India University Bangalore

SCIENCE SESSION

Climate services and methods for hydrology and flood control

Chair | Louis Celliers | Climate Service Center Germany (HZG)

Summary of research and experiences with co-production of knowledge, solutions and services – models, web-based tools, apps – that focus on the water sector, addressing risks and opportunities in the management of floods and droughts in Europe.

Making decadal predictions and climate scenario simulations usable for the Wupper association's water management challenges

Edmund Meredith (Germany) 1; Henning Rust (Germany) 1; Uwe Ulbrich (Germany) 1; Paula Lorza (Germany) 2; Marc Scheibel (Germany) 2

1 – Freie Universität Berlin; 2 – Wupperverband

Flood resilience of solid waste management in RESCCUE Project

Eduardo Martínez-Gomariz (Spain) 1; Salvador Vela (Spain) 1; Beniamino Russo (Spain) 2; Manuel Gómez (Spain) 3; Aurea Plumed (Spain) 4

1 – Cetaqua, Water Technology Centre; 2 – Aquatec; 3 – Flumen Research Institute (Technical University of Catalonia); 4 – Barcelona City Council

Tailoring to the needs of users of climate services for the European water sector

Bart Van Den Hurk (Netherlands) 1; Janet Wijngaard (Netherlands) 1; Bernd Eggen (United Kingdom) 2; Erik Kjellström (Sweden) 3; Linus Magnusson (United Kingdom) 4; David Lavers (United Kingdom) 4; Hans De Moel (Netherlands) 5; Albrecht Weerts (Netherlands) 6; Maria-Helena Ramos (France) 7; Bastian Klein (Germany) 8; Laurent Pouget (Spain) 9; Johannes Hunink (Spain) 10; Ertug Ercin (Netherlands) 10; Maria Mañez (Germany) 11; Cédric Hananel (Belgium) 12

1 – KNMI; 2 – MetOffice; 3 – SMHI; 4 – ECMWF; 5 – IVM; 6 – Deltares; 7 – IRSTEA; 8 – BFG; 9 – CETAQUA; 10 – FW; 11 – HZG; 12 – ARCTIK

Climate Road – a climate solution that both collects rain and produce green energy

Theis Raaschou Andersen (Denmark) 1; Søren Erbs Poulsen (Denmark) 2

1 – Head of program, Associate professor ph.d, VIA University College; 2 – VIA



SS040

09:00 Thursday

Room S8

Keywords: climate services, flood risk management, green energy, solid waste management, users

OC235

OC236

OC237

OC238

OC239

CLIME, an interactive multi-user platform for climate analysis. A pilot application

Giuliana Barbato (Italy) 1; Alessandra Lucia Zollo (Italy) 1,2; Veronica Villani (Italy) 1; Paola Mercogliano (Italy) 1,2

1 – CMCC Foundation (Euro-Mediterranean Center on Climate Change); 2 – CIRA Italian Aerospace Research Centre

OC240

National climate services in Norway

Inger Hanssen-Bauer (Norway) 1; Hege Hisdal (Norway) 2; Hans Olav Hygen (Norway) 1; **Stephanie Mayer** (Norway) 3

1 – Norwegian Meteorological Institute; 2 – Norwegian Water Resources and Energy Directorate (NVE); 3 – NORCE research

R9 SCIENCE PRACTICE SESSION

SP040



09:00 Thursday

Room S9

Keywords: place-based adaptation, regional, cross-border, case studies, collaboration

Connecting the dots: challenges and opportunities of place-based adaptation from a regional perspective in the UK and Ireland

Stephen Jones (United Kingdom) 1; Barry O'Dwyer (Ireland) 2; Anna Beswick (United Kingdom) 3; Eve Leegwater (United Kingdom) 4; Stephen Flood (Ireland) 2; Shona Paterson (Ireland) 2; Cassandra Moll (United Kingdom) 1; Joseph Hagg (United Kingdom) 3; Ellie Murtagh (United Kingdom) 3; Jane McCullough (United Kingdom) 1; Sylvie Allan (United Kingdom) 4; Jim Poole (United Kingdom) 5

1 – Climate Northern Ireland; 2 – Climate Ireland; 3 – Adaptation Scotland; 4 – Environment Agency; 5 – Natural Resources Wales

Effective adaptation to climate requires the vertical and horizontal integration of adaptation across all levels of governance/scales (National, sectoral and local). Place-based approaches to adaptation provide opportunities for progress by addressing cross-sectoral and multi-level governance concerns. This process involves assessing the impacts and trade-offs of climate change and adaptation at the local scale, and building adaptive capacity in vulnerable communities at risk from climate impacts. However, place-based adaptation faces a number of challenges in coordinating a diverse range of stakeholders across a range of sectors and levels of governance, attempting to integrate national requirements of adaptation planning in the context of local policy.

The session provides a forum for sharing experiences of place-based adaptation and identifying opportunities and challenges. The session will begin with a brief session overview, characterizing approaches to place-based adaptation.

It will then proceed through the four regions one at a time, with each giving a 10 minute presentation followed by 10 minutes of group discussions on the challenges and opportunities outlined.

Each of these four small 20 minute sessions will focus on ongoing place-based adaptation initiatives in the region, identify opportunities and challenges for place-based adaptation and allow for contribution from practitioner experience of adaptation planning from across Europe.

A final plenary session will clarify key lessons for place-based adaptation from a regional perspective, with learning outcomes for participants including the following:

- Explore a variety of partnerships and methods in place to support place-based adaptation;
- Illustrate challenges and opportunities with regional case studies;
- Discuss and critique challenges, opportunities and methods within each country/region and also within different sectors;
- Define the key recurring themes throughout place-based adaptation work based on practical examples of how they could be addressed.

Presenters

1. Stephen Jones | Jane McCullough | Cassandra Moll | Climate Northern Ireland | A regional approach to adaptation – combining cross-sector partnerships with local and strategic governance

2. Barry O'Dwyer 1 | Shona Paterson 1 | and Stephen Flood 1,2 | Climate Ireland – Harnessing the power of co-creation and social learning to adapt to climate change at the local level

1 – MaREI, University College Cork, Cork, Ireland; 2 – New Zealand Climate Change Research Institute, Victoria University of Wellington, New Zealand

3. Anna Beswick | Joseph Hagg | Ellie Murtagh | Adaptation Scotland | Place based adaptation in Scotland – capabilities, maturity and outcomes

4. Eve Leegwater | Sylvie Allan | Environment Agency, England, UK | England's evolving approach to its places

SCIENCE PRACTICE SESSION

SP041



09:00 Thursday

Room S10

Keywords: data, decision support tools, infrastructure, resilience, analytics

Increasing climate resilience of infrastructure systems using new data and visualisation, analytics, and decision support tools

Fahim Tonmoy (Australia) 1; Jean Palutikof (Australia) 3

1 – School of Engineering and Built Environment, Griffith University, Australia; 2 – Department of Civil, Environmental and Construction Engineering, University of Central Florida, USA; 3 – National Climate Change Adaptation Research Facility, (NCCARF), Griffith University, Australia

Increased frequency and intensity of extreme events due to climate change are likely to affect infrastructure and hence regional economies and millions of people all over the world. By 2040, the global population will grow by almost 2 billion people – a 25% increase. Rural to urban migration will continue with the urban population growing by 46%, triggering massive stress on existing aging infrastructure and demand for new infrastructure. Thus, our cities have become more vulnerable because of the increasing rate of urban migration and greater concentration of critical infrastructures, many of them located in coastal and other areas naturally vulnerable to major disasters. The potential for severe and widespread impacts of disasters has never been greater in society than today, and as climate change accelerates in the future, the risks are only likely to grow.

Our infrastructure systems are becoming increasingly interconnected and interdependent. Critical infrastructures such as telecommunications, electric power generation and transmission, transportation, banking and finance, water supply systems, hospitals and emergency services have become the components of a larger interconnected system. A disruption in one infrastructure can cascade into multiple infrastructures, with massive risks to economies, businesses and society in general. Therefore, it is important to investigate innovative ways to increase the resilience of our interconnected and interdependent infrastructure systems, and identify data, methods and tools that can help build adaptive capacity to present-day and future climate change.

This session will aim to attract presentations from the following topics:

- Development and use of knowledge and data portals to support adaptation to climate change by government, infrastructure providers and managers, including policy development as well as planning and project implementation
- Datasets and data analytics approaches to support climate change adaptation in infrastructure
- New developments in climate change resilience, risk and vulnerability analysis methods for infrastructure systems
- Models of interdependent infrastructure systems and how these can be used to explore vulnerabilities to climate change and changing frequency and severity of extreme events

- Application of modelling approaches for infrastructure systems disruptions and disruptive networks modelling to identification of adaptation options.
- Interrelationships between Infrastructure and emergency management, including co-benefits of resilience building, and data and methods to support systems approaches to adaptation.
- Risk and resilience analysis of critical infrastructures.
- Sensing and monitoring of infrastructures for disaster risk reduction.
- Decision support tools for planning resilient infrastructure systems.

Presenters

1. Dr David Rissik | Senior Principal, Climate Change Adaptation, BMT | The challenge of providing health care to small populations and large distances. Building resilience in the hospital and health service of Queensland, Australia

2. Lucie Royer | Climate change and adaptation Consulting and research, TEC Conseil | Adaptation pathways in practice: a toolkit for authorities

3. Prof Jean Palutikof | Director, National Climate Change Adaptation Research Facility, (NCCARF), Griffith University, Australia | Ensuring relevance, accessibility and credibility of decision support resources: the case of CoastAdapt

4. Roger Street | Environmental Change Institute, Oxford University, UK | Building resilience in UK infrastructure: Exploring the roles of adaptation reporting and resilience research

5. Dr. Fahim Tonmoy | Senior Engineer, BMT Global, Adjunct Research Fellow, School of Engineering, Griffith University and Adjunct Lecturer, School of Civil Engineering, University of Sydney | Coastal disaster resilience under smart city frameworks: current state, challenges, and opportunities

6. Rafaela Matos | LNEC | Advice in collaborative management in climate change adaptation

SCIENCE SESSION

Co-production of knowledge for urban adaptation and planning

Chair | Oleksandr Sushchenko | Helmholtz Centre For Environmental Research – UFZ

Account of lessons learned through recent regional and local experiences with processes of knowledge co-production aimed at urban adaptation, sustainability planning and practical implementation actions.



SS041

09:00 Thursday

Room S11

Keywords: cities, citizen science, climate services, local communities, local implementation, urban areas

OC241

Co-production of knowledge on urban gardens to aid urban planning and encourage citizens to implement local scale adaptation solutions

Gina Cavan (United Kingdom) 1; Konstantinos Tzoulas (United Kingdom) 1; Fraser Baker (United Kingdom) 1; Claire Smith (United Kingdom) 2

1 – Manchester Metropolitan University; 2 – University of Leicester

OC242

How local authorities of small and medium sized communities can be actively and successfully involved in climate change adaptation

Caterina Joseph (Germany) 1; **Dominic Rumpf** (Germany) 1; Andreas Voellings (Germany) 1; Majana Heidenreich (Germany) 2; Werner Sommer (Germany) 1; Andrea Hausmann (Germany) 1

1 – Saxon State office for Environment, Agriculture and Geology (Landesamt fuer Umwelt, Landwirtschaft und Geologie LfULG), subunit of the Saxon State Ministry for Environment and Agriculture (Sächsisches Staatsministerium für Umwelt und Landwirtschaft); 2 – Technische Universität Dresden, Faculty of Environmental Sciences, Institute of Hydrology and Meteorology, Chair of Meteorology (Technische Universität Dresden, Fakultät Umweltwissenschaften, Institut für Hydrologie und Meteorologie, Professur für Meteorologie)

OC243

Co-designing European adaptation plans at a local and regional level

Stephen Flood (Ireland) 1; Cathy Burns (United Kingdom) 4; Barry O'dwyer (Ireland) 1; Bengt-Gunnar Jonsson (Sweden) 2; Jennie Sandström (Sweden) 2; Jane Mccullough (United Kingdom) 3; Stephen Jones (United Kingdom) 3

1 – Impacts and Adaptation Group, MaREI Centre – ERI, University College Cork; 2 – Department of Natural Sciences (NAT), Mid Sweden University, Sweden; 3 – Climate Northern Ireland; 4 – Derry City & Strabane District Council.

OC244

Portrait of a climate city: How climate change is changing the way Bergen interprets and adapts to its climate

Scott Bremer (Norway) 1; Werner Krauss (Germany) 2; Arjan Wardekker (Netherlands) 3; Juan Baztan (France) 4; Charlotte Da Cunha (France) 4; Jean-Paul Vanderlinden (France) 4

1 – University of Bergen; 2 – University of Bremen; 3 – Utrecht University; 4 – University of Versailles Saint-Quentin-en-Yvelines

OC245

Governance for the Green City: lessons on coproduction from Greater Manchester, UK

Ryan Bellinson (United Kingdom) 1

1 – Urban Institute, University of Sheffield

Smart Sustainable Districts – sustainable and healthy Alfama for all

Vera Gregório (Portugal) 1; Maria João Ramos (Portugal) 1; Júlia Seixas (Portugal) 2

1 – Lisboa E-Nova – Energy and Environment Agency; 2 – Faculdade de Ciências e Tecnologia – NOVA University of Lisbon

SCIENCE SESSION

Managing climate change risk

Chair | Valentina Giannini | CMCC

Report on a range of different risk management approaches from various studies around the world, aimed at practical solutions to tackle potential problems in assessing risk – and its management – at different stages of the adaptation process.

A framework tool for the Nature Based Solutions (NBSs) assessment in mountainous and rural areas considering climate change

Silvia Autuori (Italy) 1; Francesco De Paola (Italy) 1; **Francesco Pugliese** (Italy) 1; Marialuce Stanganelli (Italy) 1; Gianfranco Urciuoli (Italy) 1; Farrokh Nadim (Norway) 2; Amy Oen (Norway) 2; Maurizio Giugni (Italy) 1

1 – University of Naples Federico II; 2 – Norwegian Geotechnical Institute

FOSPREF-Wind: A portable FOSS platform and modelling chain to aid in wind risk forest management under a changing climate

Tom Locatelli (United Kingdom) 1; Georgios Xenakis (United Kingdom) 1

1 – Forest Research

Adapting to extreme heat in the city: Integrating citizen science data with urban climate modelling approaches

Eliška K. Lorencová (Czech Republic) 1; Jan Geletič (Czech Republic) 2; Timon Mcphearson (United States of America) 3; Petr Bašta (Czech Republic) 1; **Vojtěch Cuřín** (Czech Republic)

1 – Global Change Research Institute of the Czech Academy of Sciences (CzechGlobe); 2 – Institute of Computer Science of the Czech Academy of Sciences; 3 – Urban Systems Lab, The New School

OC246



SS042

09:00 Thursday

Room S13

Keywords: frameworks, interdisciplinary approach, multi-criteria analysis, nature based solutions, risk management, urban heat island

OC247

OC248

OC249

OC250

Assessment of the future drought risk management through probabilistic reservoir storage indicators in the Júcar River Basin (Spain)

Sara Suárez-Almiñana (Spain) 1; Abel Solera (Spain) 1; Joaquín Andreu (Spain) 1; Jaime Madrigal (Spain) 1

1 – Instituto de Ingeniería del Agua y Medio Ambiente, Universitat Politècnica de València

OC251

Upscaling of solar pump drip and sprinkler irrigation systems in the Indus Basin

Hester Biemans (Netherlands) 1; Christian Siderius (Netherlands) 1; Bashir Ahmad (Pakistan) 2

1 – Wageningen University and Research; 2 – Pakistan Agricultural Research Council

OC252

Assessing household vulnerability in semi-arid areas of Mali: A multidimensional approach

Alcade C. Segnon (Benin) 1,2,3; Edmond Totin (Benin) 2,4; Robert B. Zougmore (Mali) 2; Enoch G. Achigan-Dako (Benin) 3; Benjamin D. Ofori (Ghana) 1; Chris Gordon (Ghana) 1

1 – Institute for Environment and Sanitation Studies, University of Ghana, Ghana; 2 – CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Mali; 3 – Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin; 4 – Université Nationale d'Agriculture du Bénin, Benin

SCIENCE SESSION

SS043



09:00 Thursday

Room S16

Keywords: big data, climate adaptation policy, indicators, local implementation, monitoring, urban areas

Measuring progress in climate change adaptation

Chair | Jean Palutikof | NCCARF – Griffith University

Summary of research results that focus on how climate change adaptation has been integrated in existing policy, with special attention on how to track, monitor, evaluate and report adaptation actions by local governments, business, civil society and organisations.

OC253

Framing and monitoring urban climate resilience in German municipalities – insights from an ongoing research project

Christian Kind (Germany) 1; Theresa Kaiser (Germany) 1; Daniel Feldmeyer (Germany) 2; Daniela Wilden (Germany) 3

1 – Adelphi; 2 – University of Stuttgart; 3 – Justus Liebig University Giessen

Are world-wide local climate adaptation plans on track to effectively reduce future risks?

Marta Olazabal (Spain) 1; **Maria Ruiz De Gopegui** (Spain) 1

1 – Basque Centre for Climate Change, BC3

Tracking integration of climate change adaptation using machine learning

Robbert Biesbroek (Netherlands) 1; **Ioannis Athanasiadis** (Netherlands) 1; **Shashi Badloe** (Netherlands) 1

1 – Wageningen University & Research

How well are we adapting? Co-designing an ME&R tool for local governments

Susie Moloney (Australia) 1; **Helen Scott** (Australia) 2

1 – RMIT University, Australia; 2 – Kingston City Council

Fostering psychosocial resilience when facing heatwaves: A longitudinal analysis of citizens evaluation of demands and coping resources

Samuel Domingos (Portugal) 1; **Rui Gaspar** (Portugal) 2,3; **João Marôco** (Portugal) 1; **Hugo Fonseca** (Portugal) 4

1 – ISPA – Instituto Universitário, William James Center for Research; 2 – Católica Research Centre for Psychological, Family and Social Wellbeing (CRC-W), Universidade Católica Portuguesa;

3 – Universidade do Algarve, Faculdade de Ciências Humanas e Sociais; 4 – ISCTE-IUL, Instituto Universitário de Lisboa

A continuous process in urban resilience to face climate change in Lisbon

Maria Telhado (Portugal) 1; **Marco Morais** (Portugal) 1; **Ana Cristina Lourenço** (Portugal) 1; **Inês Metelo** (Portugal) 1

1 – Lisbon City Council

TOOL-SHED SESSION

BRIGAD tools: practical support for innovators to get from an idea to a signed deal

Marta Rica (Portugal) 1; **Marco Hartman** (Netherlands) 2; **Gerardo Anzaldúa** (Netherlands) 1

1; 2 – Consultants

OC254

OC255

OC256

OC257

OC258

TS020



09:00 Thursday

Room S15

Keywords: testing, business, strategy, marketplace, online tools

BRIGAD supports climate innovations with testing, business development and online visibility through several practical tools: a) TIF: BRIGAD's Test and Implementation Framework for climate innovations provides a structured and systematic method for solution developers to move their idea forward in the TRL scale; b) MAF+: The Market Analysis Framework is an online collaboration system that enables innovators to identify business opportunities, define their market, recognize and evaluate their competitors, and conceive a suitable business model; c) CIW: The Climate Innovation Window is a portal created to showcase and facilitate the market uptake of new solutions to climate change adaptation.

The TIF Tool is designed to help innovators identify possible technical, environmental, sectoral and societal concerns that their innovations may raise early on –and iteratively throughout the development of their innovation– so that they may modify their designs to better address their end users' needs. The TIF Tool should be applied at critical points in the development process at which innovators should pause to identify and address technical, environmental, sectoral and social concerns.

The MAF+ aims to trigger change in European innovation by getting innovators, researchers and entrepreneurs comfortable with putting business development and marketing concepts into practice. The goal is to increase the innovators' capacity to recognize actual market needs and incorporate them into their product development process. The underlying vision is "European innovation that is user-centric and globally competitive".

The CIW is an online interactive platform presenting innovations and connecting them to end users and qualified investors. Innovations are defined here as new products, processes and forms of organization into adaptation solutions to climatic events, and which are in their final stages of development. The use of the BRIGAD approach ensures the generation of key information for end-users and investors and allows a reliable comparison among different potential solutions.

Web address: <https://climateinnovationwindow.eu/>

TOOL-SHED SESSION

TS021



10:30 Thursday

Room S15

Keywords: adaptation measures,
decision support, portfolio

BINGO Online portfolio of adaptation measures

Henk-Jan Van Alphen (Norway) 1

1 – KWR

This online portfolio contains adaptation measures that have been collected and analysed in the BINGO-project.

The information is focused on strategists, decision makers and policy makers in different sectors, such as water resource management, urban drainage, public water supply and agriculture. The information in the database is primarily focus on governance aspects of the measures, using the three-layer-framework that has also been used in BINGO.

Web address: [http://beta.tools.watershare.eu/bingo/\\$/](http://beta.tools.watershare.eu/bingo/$/)

SCIENCE PRACTICE SESSION

Bridging the health adaptation gap: Insights from UNEP's Adaptation Gap Report 2018

Gerardo Sanchez Martinez (Denmark) 1; **Henry Neufeldt** (Denmark) 1; **Peter Berry** (Canada) 2; **Cristina Linares** (Spain) 3; **Virginia Murray** (United Kingdom) 4; **Rohaida Ismail** (United Kingdom) 4; **Gueladio Cisse** (Switzerland) 5; **Ulisses Confalonieri** (Brazil) 6; **Julia Menezes** (Brazil) 6; **Kathryn Bowen** (Australia) 7; **Revati Phalkey** (United Kingdom) 8

1 – Danish Technical University; 2 – Health Canada; 3 – Instituto de Salud Carlos III; 4 – Public Health England; 5 – Swiss Tropical and Public Health Institute; 6 – Fundação Oswaldo Cruz; 7 – Australian National University; 8 – University of Nottingham

There is ample evidence that climate variability and change significantly enhance health burdens which are felt disproportionately by the vulnerable and poor. While largely preventable, in the absence of rapid and sustained efforts from local to global levels by health officials and partners in other sectors, these health burdens are projected to increase with climate change. In addition, climate change could result in an increase of more than 100 million people in extreme poverty, reversing past progress in development and exposing them to additional health risks.

In 2018, the UN Environment Adaptation Gap Report featured Health as a theme due to the growing threat of climate-related health impacts facing countries and particularly vulnerable populations even for a 2°C temperature rise that was, until recently, considered safe (IPCC, 2014; 2018).

According to the World Health Organization, climate change is projected to cause approximately 250,000 additional deaths per year between 2030 and 2050 (WHO, 2014). This contrasts with the limited amount of attention and funding allocated to adaptation for health. The purpose of the report is to shed more light on the adaptation gap and options to bridge this gap.

While protecting health and well-being is frequently highlighted as a central objective of national and international climate-relevant policies, evidence shows that progress has been made in reducing climate sensitive diseases and injuries, we are globally well below the required level of action in health adaptation.

START OF NEXT SESSION



SP042

11:15 Thursday

Room PA

Keywords: climate change, health, resilience, health systems, burden of disease

Current efforts to adequately protect the health of populations and communities from most climate-sensitive risks are clearly not sufficient, although there is great variability across and within countries and regions. Greater efforts are urgently needed. From a general health systems resilience perspective, key areas of action include: enhancing collaboration and coordination to protect health from climate change; harnessing health co-benefits of both mitigation and adaptation measures; and empowering the health sector to access national and international adaptation funding, among others. Beyond these system-wide activities, researchers and practitioners largely agree on specific recommendations for bridging the health adaptation gap in crucial areas like extreme weather events, infectious diseases and food insecurity. These were summarized into UN Environment's 2018 Adaptation Gap Report, targeting climate negotiators at COP 24 and national climate change decision makers, and constituting the basis of this session.

Presenters

1. **Gerardo Sanchez Martinez** | The UNEP DTU Partnership | **Peter Berry** | Health Canada | **Henry Neufeldt** | The UNEP DTU Partnership
2. **Cristina Linares** | Instituto de Salud Carlos III | **Virginia Murray** and **Rohaida Ismail** | Public Health England
3. **Gueladio Cisse** | Swiss Tropical and Public Health Institute | **Ulisses Confalonieri** and **Julia Menezes** | FIOCRUZ
4. **Kathryn Bowen** | ANU College of Health and Medicine | **Revati Phalkey** | University of Nottingham Faculty of Medicine & Health Sciences

SCIENCE PRACTICE SESSION

SP043



11:15 Thursday

Room S1

Keywords: monitoring, reporting and evaluation, national adaptation policy and governance

Understanding practice, progress and lessons learned in adaptation – approaches to monitoring, reporting and evaluation at national level and the way forward

Kirsi Mäkinen (Finland) 1; **Francisco Heras** (Spain) 2; **Markus Leitner** (Austria) 3; **Anna Schmidt** (Austria) 3; **Juha-Pekka Majjala** (Finland) 4; **Andrew Russell** (United Kingdom) 5; **José Paulino** (Portugal) 6; **Timo Leiter** (United Kingdom) 7

1 – Finnish Environment Institute; 2 – Spanish Climate Change Office (Spanish Ministry for the Ecological Transition); 3 – Environment Agency Austria; 4 – Ministry of Environment, Finland; 5 – Adaptation Sub-Committee of the Committee on Climate Change; 6 – Agência Portuguesa do Ambiente; 7 – London School of Economics, UK

As the number of countries that move from planning to implementing national adaptation policies, strategies and plans increases, so does the need for approaches and methods to track progress and understand the effects of adaptation policies and measures. Monitoring and evaluation of these national plans and strategies is being increasingly recognised at the international level as a crucial step of the process of adapting to climate change since they enable countries to better address climate risks, improve the effectiveness of adaptation measures, and increase accountability. Countries are gradually engaging in monitoring, evaluating and learning from their adaptation plans, policies, programmes and actions.

Countries are increasingly required to report on their efforts to adapt to climate change e.g. through their international commitments to the Paris Agreement. Assessments of emerging practice of national level adaptation monitoring, reporting and evaluation (MRE) in Europe (EEA Technical report No 20/2015) and the latest OECD Climate Change Expert Group Paper No. 2017(3) (Insights from national adaptation monitoring and evaluation systems) have shown that while adaptation priorities and climate risks vary across countries, the challenges of understanding progress in adaptation are often shared. Recently the evaluation of the EU Adaptation Strategy found that most EU Member States have plans for periodic reviews of their national adaptation policies. Whilst evidence of practical experiences remains limited, there is a pressing need to facilitate spreading of lessons learnt and sharing of experiences across countries.

This session focuses on latest developments in adaptation MRE at national level mostly in Europe. It looks into countries that have practical experience in monitoring and evaluating their national adaptation strategies and plans to share lessons learnt and discuss their approaches to commonly faced challenges. Specific topics include stakeholder engagement, the role of adaptation indicators in monitoring, reporting and evaluation, and the use of knowledge generated by MRE efforts to improve and further promote policy and practice. The final objective is to contribute to strengthen the knowledge base about monitoring and evaluation in mostly European countries and to foster learning from the evaluation of adaptation policies. In addition, the session reflects on the links of national MRE activities to knowledge needs at different levels of governance (local and international) and provides a space where experiences and lessons learned from the audience can feed into MRE practice.

Presenters

1. **Anna Schmidt** | **Markus Leitner** | EAA, Austria

2. **José Paulino** | Environment Protection Agency, Portugal

3. **Kirsi Mäkinen** | Finnish Environment Institute SYKE, Finland | **Juha-Pekka Majjala** | Ministry of Environment, Finland

4. **Andrew Russell** | CCC-ASC, UK

5. **Francisco Heras** | Spanish Climate Change Office, Spain

6. **Timo Leiter** | GIZ, Germany | **Neha Rai** | IIED

SS044



11:15 Thursday

Room S2

Keywords: collaboration,
collective action,
communication, cross-border,
cross-disciplinary, governance

SCIENCE SESSION

Challenging traditional boundaries in adaptation and disaster risk reduction

Chair | Maddalena Dali | DG CLIMA

Presentation of projects and studies that analyse and challenge typical boundary divides, and pursue new avenues for exchange of guidance and collaboration across cities and regions, as well as between partners, actors and institutions involved in climate adaptation and disaster risk reduction.

OC259

Merit goods and climate adaptation: international cross-city assessment of green roof policies

Anke Wolff (Germany) 1; Matteo Roggero (Germany) 1

1 – Humboldt-Universität zu Berlin

OC260

Plurifor project: a transnational plan for the management of forest fire risk

Conceição Colaço (Portugal) 1; Alejandro Cantero (Spain) 2; Enrique Jimenez Carmona (Spain) 3; José Fernández Alonso (Spain) 3; Cristina Fernández Filgueira (Spain) 3; Sandra Sánchez García (Spain) 4; Elena Canga Líbano (Spain) 4; Sarah Yoga (France) 5; Francisco Rego (Portugal) 1

1 – Centre for Applied Ecology Prof. Baeta Neves (CEABN-InBIO), School of Agriculture, University of Lisbon; 2 – HAZI; 3 – CIF-Lourizan, Pontevedra; 4 – CETEMAS, Asturias, 33936; 5 – European Forest Institute – Planted Forests Facility.

OC261

The European landscape of CCA and DRR communities – findings of a Social Network Analysis

Eleni Karali (Greece) 1; Dragana Bojovic (Spain) 2; Carlo Giupponi (Italy) 3; **Gabriela Michalek** (Germany) 4; Reimund Schwarze (Germany) 4

1 – Ministry of Environment & Energy; 2 – Barcelona Super Computing Center; 3 – Università Ca' Foscari di Venezia; 4 – Helmholtz Center for Environmental Research

OC262

Building « cross-border solidarity » for climate change adaptation: Estuarine areas and Bordeaux metropolis co-operative governance

Glenn Mainguy (France) 1,2; Charles De Godoy Leski (France) 1; Nicolas Rocle (France) 1; Denis Salles (France) 1

1 – IRSTEA; 2 – Centre Emile Durkheim UMR CNRS 5116

Theorizing the practice of climate adaptation governance: a conceptual framework towards more effective adaptation practice

Marco Pütz (Switzerland) 1; Dominik Braunschweiger (Switzerland) 1

1 – Swiss Federal Institute for Forest, Snow and Landscape Research WSL

BEGIN: experiences, methods and guidelines to accelerate effective city-to-city learning to reach transformational change

Max Berkelmans (Spain) 1; Sebastiaan Van Herk (Spain) 1; William Van Herk (Netherlands) 2; Jesse Renema (Spain) 1

1 – Bax & Company; 2 – IHE Delft

SCIENCE PRACTICE SESSION

Global climate change impacts via European foreign trade

Madeleine Guyer (Switzerland) 1; Kevin Adams (Sweden) 2; Nina Knittel (Austria) 3; Frida Lager (Sweden) 2; Clemens Hasse (Germany) 4

1 – INFRAS; 2 – SEI; 3 – Uni Graz; 4 – UBA

Until now, the effects of climate change have mostly been studied within political boundaries. However, depending on the extent of global connections with vulnerable countries, international effects of global climate change come to the fore. This applies especially for countries which are strongly interwoven with the global economy, such as European countries with vital international trade relations, a pronounced global division of labour, highly interlinked industrial production processes and a high importance of imports and exports. Thus, European countries may be affected by global climate change via trade flows: the more open an economy, the higher its exposure to economic impacts of climate change through international impact chains. In this session four contributing authors present their latest research results on this topic, showing that climate change impacts transferred via international impact chains are at least as important as climate change impacts that occur within (national/political) borders.

Presenters

1. Madeleine Guyer | INFRAS Switzerland

2. Kevin Adams | SEI, Sweden

3. Nina Knittel | Uni Graz, Austria

OC263

OC264



SP044

11:15 Thursday

Room S5

Keywords: international climate impacts, impact chains, cross-border adaptation, trade impacts, economic impacts of climate change

4. Frida Lager | SEI, Sweden

5. Clemens Hasse | UBA, Germany

SCIENCE SESSION

SS045



11:15 Thursday

Room S6

Keywords: capacity building, computational sustainability, nature-based solutions, resilience assessment, urban resilience

Assessing adaptive capacity and building climate resilience

Chair | Nicolas Faivre | DG RTD, European Commission

Report on studies and projects that assessed the potential direct and indirect impacts associated with climate change, and diagnosed adaptive capacity with a view to building resilience planning and supporting adaptation action.

OC265

Biodiversity conservation, land-use planning and climate change: a sixty-years perspective of threatened mammal species in Europe

Diogo Alagador (Portugal) 1; **Jorge Orestes Cerdeira** (Portugal) 2; **Miguel Bastos Araujo** (Spain) 3

1 – Research Center on Biodiversity and Genetic Resources, Universidade de Évora; 2 – Department of Mathematics, Faculdade de Ciências e Tecnologia, Universidade NOVA de Lisboa; 3 – Museo Nacional de Ciencias Naturales, Consejo Superior de Investigaciones Científicas, CSIC, Madrid

OC266

Assessing resilience to climate change in urban areas. Framework to support resilience action planning

Maria Adriana Cardoso (Portugal) 1; **Rita Brito** (Portugal) 1; **Giovanni Pagani** (Spain) 2; **Helene Fourniere** (Spain) 2; **Luis Mesquita David** (Portugal) 1; **Maria Do Céu Almeida** (Portugal) 1

1 – Laboratório Nacional de Engenharia Civil; 2 – UN-HABITAT

Holistic resilience analysis in Barcelona in a context of climate change. The RESCUE project

Marc Velasco (Spain) 1; Beniamino Russo (Spain) 1; Ignasi Fontanals (Spain) 2; Lluís Fontanals (Spain) 2; Pere Malgrat (Spain) 1

1 – Aquatec – SUEZ Advanced Solutions; 2 – Opticits

Effective diversity and inclusion in Australian emergency management organisations and its role in building resilience.

Celeste Young (Australia) 1; Roger Jones (Australia) 1; Margarita Kumnick (Australia) 1

1 – Institute of Sustainable Industries and Liveable Cities, Victoria University, Melbourne Australia

Building regional adaptation capacity and expertise in Canada: mobilizing knowledge to increase adaptation action in different sectors

Dominique Auger (Canada) 1; Mary-Ann Wilson (Canada) 1

1 – Natural Resources Canada

Bringing the Mediterranean to Birmingham: nature-based solutions for the impact of extreme heat on regional interdependent infrastructure

Emma Ferranti (United Kingdom) 1

1 – University of Birmingham

SCIENCE PRACTICE SESSION

The insurance value of nature – ecosystem-based solutions to increase the resilience against climate change and natural disasters

Roland Olschewski (Switzerland) 1; **Christian Unterberger** (Switzerland) 1; Elena Lopez Gunn (Spain) 2; Roxane Marchal (Switzerland) 1

1 – WSL; 2 – ICATALIST

This session highlights research results concerning the insurance value of nature and presents different approaches to harness ecosystem-based solutions to increase society's resilience to climate change and natural hazards. Ecosystems provide a multitude of ecosystem services. Among others they supply and regulate water, sequester carbon and control gravitational hazards. Via these services ecosystems play an important role in mitigating the impact of climate change and adapting to it.

OC267

OC268

OC269

OC270



11:15 Thursday
Room S7

Keywords: climate change adaptation, insurance value, ecosystem services, resilience

While technical adaptation and mitigation measures often come with considerable costs and limited lifetime, nature-based solutions rely on services directly provided by ecosystems to address environmental, social and economic challenges in a sustainable way. These approaches can provide precautionary and cost-efficient alternatives to limit the magnitude and impact of climate change. Additionally, ecosystem-based solutions generate co-benefits, such as the restoration of degraded ecosystems, which positively affect communities' beyond the mere reduction in damage potential (e.g., increased seafood abundance supporting on-shore fishing, improved urban and rural environments supporting income opportunities). To assure that ecosystems provide these services they need to be managed accordingly. This session focuses on nature-based approaches as a way to naturally adapt to climate change by increasing the resilience against different types of natural hazard via selected ecosystem management strategies.

When it comes to the implementation of nature-based solutions, local conditions play an important role. This includes the awareness and acceptance of communities, local coping capacities as well as specific environmental and biological conditions. Researchers from three different projects (NAIAD, ResilNam and DIVES) will evaluate ecosystem-based solutions in different geographical locations and at various spatial scales regarding their capacity to increase the local resilience to climate change and natural hazards. Being aware of the importance of local knowledge and acceptance when it comes to planning and implementing these solutions, ways to achieve social acceptance and to overcome barriers for implementation will be discussed.

Although ecosystem-based solutions are supported and inspired by nature, their implementation comes with additional costs. Forests need to be managed to retain their protective functions against natural hazards and active interventions in the ecosystems surrounding watersheds and coastal regions are needed to reduce the vulnerability against flooding. Hence, when analysing the insurance value of nature it is important to account for arising costs, contrast them to the damages prevented and compare them to conventional risk reduction measures. By presenting cost-benefit analyses and emphasizing the co-benefits of nature-based solutions our session will capture also these aspects.

Presenters

1. Peter Antkowiak | Chair of Forestry Economics and Forest Planning, University of Freiburg | Project DIVES

2. Philip Bubeck | Institute of Earth and Environmental Science, University of Potsdam | Project ResilNam

3. David Moncoulon and Roxanne Marchal | Caisse de Reassurance, (CCR) France and Philippe Le Coent, BRGM, France

4. Mark Mulligan | Kings College, London | **Sophia Burke** | AMBIOTEK, UK

5. Elena Lopez Gunn and Beatriz Mayor, ICATALIST, Spain

SCIENCE SESSION

Climate services and methods for agriculture and food production

Chair | María Máñez Costa | Climate Service Center Germany (HZG)

Showcase of examples of co-production of knowledge, solutions and climate services focused on the agricultural and food production sectors in Europe and selected developing countries, including different methods and tools – models, apps – to deliver effective solutions.

Informing robust water management adaptation with nexus modelling

Andrea Momblanch (United Kingdom) 1; **Ian P Holman** (United Kingdom) 1; **Dau Quan** (United Kingdom) 2; **Adebayo J Adeloye** (United Kingdom) 2; **Chandra Sp Ojha** (India) 3; **Sanjay K Jain** (India) 4; **Daniel L Bannister** (United Kingdom) 5; **Andrew Orr** (United Kingdom) 5; **Anil Kulkarni** (India) 6; **Vijay Shankar** (India) 7; **Sikhululekile Ncube** (United Kingdom) 2; **Lindsay Beevers** (United Kingdom) 2; **Boris Snapir** (United Kingdom) 1; **Toby Waine** (United Kingdom) 1

1 – Cranfield University; 2 – Heriot-Watt University; 3 – Indian Institute of Technology Roorkee; 4 – National Institute of Hydrology Roorkee; 5 – British Antarctic Survey; 6 – Indian Institute of Science Bangalore; 7 – Indian Institute of Technology Hamirpur

New web-based service to evaluate and reduce the vulnerability of European farms to climate change

Nicolas Metayer (France) 1; **Vanessa Sanchez** (Spain) 2; **Carolina Wackerhagen** (Germany) 3; **Ragnar Leming** (Estonia) 4

1 – Solagro; 2 – Fundacion Global Nature; 3 – Bodensee Stiftung; 4 – Eesti Maaülikool

Co-development of tailored climate services for adding value to olives, grapes and durum wheat production systems

E. Mihailescu (United Kingdom) 1; **M. Bruno Soares** (United Kingdom) 1; **J. Lopez-Nevado** (Spain) 2; **A. Graca** (Portugal) 3; **N. Fontes** (Portugal) 3; **M. Teixeira** (Portugal) 3; **C. Monotti** (Italy) 4; **M. Terrado** (Spain) 5; **N. Gonzalez-Reviriego** (Spain) 5; **R. Marcos** (Spain) 5; **R. Arjona** (Spain) 6; **A. Dell'Aquila** (Italy) 7; **L. Ponti** (Italy) 7; **S. Calmanti** (Italy) 7; **M. G. Sanderson** (United Kingdom) 8; **C. Giannakopoulos** (Greece) 9; **E. Zamora-Rojas** (Spain) 10; **S. Maglaver** (Greece) 11; **A. Toreti** (Italy) 12



SS046

11:15 Thursday

Room S8

Keywords: climate services for agriculture, farming support, food production, water-food-energy nexus, water resource modelling

OC271

OC272

OC273

1 – School of Earth and Environment, University of Leeds; 2 – DCOOP Sociedad Cooperativa Andaluza; 3 – Sogrape Vinhos S. A; 4 – Barilla G. & R. Fratelli SPA; 5 – Barcelona Supercomputing Center; 6 – Easytosee Agtech, Sociedad Limitada; 7 – Agenzia Nazionale per le Nuove tecnologie, l'Energia e lo Sviluppo Economico Sostenibile; 8 – The Met Office; 9 – The National Observatory of Athens; 10 – GMV Aerospace and Defence S.A; 11 – University of Thessaly; 12 – European Commission, Joint Research Centre

OC274

Prototype climate information services for agriculture against pluviometric extremes in the West African Sahel

Seyni Salack (Burkina Faso) 1

1 – WASCAL

OC275

Service platform to boost climate smart agriculture

Ingrid Coninx (Netherlands) 1; **Remco Kranendonk** (Netherlands) 1

1 – Wageningen University & Research

OC276

Assessment of climate change impacts, risks and adaptation opportunities for agricultural sector in Central Asia

Anastasia Lobanova (Germany) 1; **Iulii Didovets** (Germany) 1; **Christoph Menz** (Germany) 1; **Atabek Umirbekov** (Kazakhstan) 2; **Zhanna Babagalieva** (Kazakhstan) 2; **Fred Hattermann** (Germany) 1; **Valentina Krysanova** (Germany) 1

1 – Potsdam Institute for Climate Impact Research; 2 – Regional Environmental Centre for Central Asia

SCIENCE PRACTICE SESSION

SP046



11:15 Thursday

Room S9

Keywords: practitioners, computer models, scenario simulations, evaluation, climate adaptation data

Tools and data for climate resilient cities

Andreas Baumgaertner (Germany) 1; **Andreas Schmidt** (Germany) 1; **Susanne Lorenz** (United Kingdom) 2; **Annegret Thieken** (Germany) 3; **Rosmarie De Wit** (Austria) 4; **Veronika Wirth** (Germany) 5; **Teresa Zölch** (Germany) 5; **Jordi Prades Tena** (Spain) 6

1 – DLR Project management agency; 2 – Sustainability Research Institute and ESRC Centre for Climate Change Economics and Policy, University of Leeds; 3 – University of Potsdam; 4 – Zentralanstalt für Meteorologie und Geodynamik, Vienna; 5 – City of Munich, Department of Health and Environment; 6 – Universitat Rovira i Virgili

Climate change adaptation research produces a large amount of data and in recent years has increasingly tried to make such data available to practitioners via specific user interfaces. Municipalities, especially in the context of planning processes, have specific needs for data e.g. for deliberation processes.

In transdisciplinary projects, the (municipal) users are brought together with (data-generating) researchers. So far, there is little understanding on how such data and tools actually advance urban adaptation to climate change and what factors influence it. The workshop is therefore intended to enable the exchange of experiences on this issue.

Presenters

Dr. Andreas Baumgaertner, Dr. Andreas Schmidt | DLR Project Management Agency
| **Dr. Karsten Hess** | Federal Ministry of Education and Research | Introduction
Research promoting urban climate resilience

Susanne Lorenz, PhD | Sustainability Research Institute and ESRC Centre for Climate Change Economics and Policy, University of Leeds, UK | Examining the barriers to using climate projections in local adaptation planning

Prof. Dr. Annegret Thieken | University of Potsdam, Germany | Climate adaptation – information needs and gaps of urban administrations

Dr. Rosmarie de Wit | Zentralanstalt für Meteorologie und Geodynamik, Vienna, Austria | The CLARITY climate service modelling chain supporting urban climate change resilience

Dr. Veronika Wirth, Dr. Teresa Zölch | City of Munich, Department of Health and Environment | Using urban climate data to implement adaptation in the City of Munich

Dr. Jordi Prades Tena | Universitat Rovira i Virgili | Communication Strategy for Delivering Effective Climate Services

SCIENCE SESSION

Urban climate adaptation

Chair | Sofia Simões | UNL

Illustrative case studies that take an urban perspective on the adaptation challenge and consider impacts on the high-complexity systems operating within cities – food, energy, water, waste and transport – in view of developing appropriate data sets, frameworks and methodologies for planning.

Evaluation of the cooling potential of green spaces in Lisbon as a measure of climate change adaptation

Cláudia Reis (Portugal) 1; **António Lopes** (Portugal) 1

1 – Instituto d^e Geografia e Ordenamento do Território – Universidade de Lisboa



SS047

11:15 Thursday

Room S10

Keywords: big data, climate impact assessment, decision support, flooding, power system, urban climate change

OC277

OC278

Lessons learned from applying quantitative vs. semi-quantitative adaptation pathway approach. A case study from Bilbao, Spain

Saioa Zorita (Spain) 1; Maddalen Mendizabal (Spain) 1; José Antonio Martínez (Spain) 1; Efrén Feliu (Spain) 1

1 – Tecnalía

OC279

Impacts of flooding on Barcelona's electrical distribution network

Anna Palau Mayo (Spain) 1; Mikel De Prada (Spain) 1; José Luis Domínguez-García (Spain) 1; Miguel Pardo (Spain) 2; Miguel Duarte (Spain) 2; Daniel Sánchez Muñoz (Spain) 1

1 – IREC; 2 – ENDESA

OC280

Breadcrumb data for urban climate adaptation

Marius Waelchli (Switzerland) 1

1 – ETH Zürich

OC281

Simulating complexity of urban systems in the context of climate change through system dynamic modelling

Cristobal Reveco (Germany) 1; Dmitrii Kovalevskii (Germany) 1

1 – Helmholtz-Zentrum Geeshacht, GERICS

OC282

Adapting the German transport system to climate change and extreme weather events

Stephanie Hänsel (Germany) 1; Christoph Brendel (Germany) 1; Susanne Brienlen (Germany) 1; Markus Forbriger (Germany) 2; Jens Kirsten (Germany) 3; Martin Klose (Germany) 3; Anne Farina Lohrengel (Germany) 3; Enno Nilson (Germany) 4; Maike Norpoth (Germany) 2; Rita Seiffert (Germany) 5; Nils Schade (Germany) 6; Andreas Walter (Germany) 1

1 – Deutscher Wetterdienst; 2 – Federal Railway Authority; 3 – Federal Highway Research Institute; 4 – German Federal Institute of Hydrology; 5 – Federal Waterways Engineering and Research Institute; 6 – Federal Maritime and Hydrographic Agency

SCIENCE PRACTICE SESSION

How to make CCA partnerships work? Adaptive governance reflections on the CCA cross-border and cross-authority partnership 'EU LIFE C2C CC'

Dorthe Selmer (Denmark) 1; Helle Ørsted Nielsen (Denmark) 2; Mia Rix (Denmark) 3; Theis Andersen (Denmark) 4; **Bjarke Horst Jensen** (Denmark) 5; Bertel Meilvang (Denmark) 6

1 – Central Region Denmark; 2 – Aarhus University; 3 – Randers Municipality; 4 – VIA University College; 5 – Hedensted Municipality; 6 – Samsø Municipality

Collaborative partnerships, stakeholder involvement and policy experimentation have emerged as key recommendations in the governance literature for how to manage complex natural and social systems under conditions of uncertainty (Ostrom 2010; Huitema *et al* 2009; 2018). While there is evidence that such institutional mechanisms allow for flexible and adaptive approaches to resource management, they also face challenges related to coordination, conflicts of interest and how-to upscale evidence from local experiments. Therefore, it is important to understand how and under what circumstances adaptive governance may improve climate governance. One question is: Do different types of partnerships vary in their ability to promote coordination, trust and learning?

This session discusses different types of cross-border collaboration and solutions from a governance perspective on collaborative mechanisms. Within CCA implementation it is well known that cities are key drivers for action (Rosenzweig 2011, Bulkeley 2010), and this session will focus on a joint CCA partnership on collaboration among actors at the local and regional level. The partnership of the EU LIFE IP project Coast to Coast Climate Challenge (C2C CC) consists of 31 partners and 20 supporting stakeholders representing municipalities, utilities, knowledge institutions, national agencies, businesses and NGOs. The project has 24 sub-projects on different CCA aspects and where the common dominator is cross-border and cross-authority collaboration i.e. collaboration between neighbouring municipalities, between municipalities and water utilities, and collaboration between various actors such as knowledge institutions, businesses and community actors. C2C CC is thus a showcase for network governance and an example of various types of cross-border collaboration and the collaborative mechanisms that may occur within a partnership. This session discusses from a science-practice perspective different types of cross-border collaboration and the experienced drivers and implications. The presentations illuminate on drivers as policy entrepreneurs, regional growth, innovation, capacity building and networking, and need for action; and implications for division of responsibility, legitimacy, planning processes, knowledge sharing etc.



SP047

11:15 Thursday

Room S11

Keywords: governance, collaborative mechanisms, partnership, cross-border collaboration

The drivers and implications presented in the presentations will following be discussed in a panel debate, where the chair and the audience ask reflective governance questions from science and practice, respectively. The panel consists of the presenters, representing the partnership, and who jointly will reflect on the partnership. The outcome for science is a theoretical contribution from practice on collaborative mechanisms of adaptive governance, and for practice a showcase on adaptive governance, where the importance of cross-border collaboration is tested.

Presenters

1. Dorte Selmer | Central Denmark Region (CDR) | EU LIFE IP project C2C CC and why CDR is taking the role of facilitating cross border governance of CCA without a regulatory mandate

2. Bjarke Horst Jensen | Hedensted Municipality | CCA collaboration across 7 municipalities in the large river catchment of Gudenå

3. Maria Elise Sørensen | Why citizen driven partnership makes sense, a C2C CC project

4. Bertel Meilvang | Samsø Municipality | The implications of being an island in a cross-border partnership

5. Theis Raaschou Andersen | VIA University College | Science-practice collaboration in a CCA innovation project: The Climate Road of Hedensted

6. Helle Ørsted Nielsen | Aarhus University | Adaptive governance: theoretical promise and empirical evidence.

SCIENCE PRACTICE SESSION

SP048



11:15 Thursday

Room S13

Keywords: warning systems, climate change, adaptation pathways, participatory approaches, impacts modelling

Participatory approaches to develop warning systems for natural hazards and a scientific based regional adaptation plan (PIAAC-AMAL). Cases of the Nordic countries and Southern Portugal region

João Pedro Nunes (Portugal) 1; Inês Morais (Portugal) 1; Bruno Aparício (Portugal) 1; **Luís Filipe Dias** (Portugal) 1; Amandine Pastor (France) 1,2; Filipe Duarte Santos (Portugal) 1; André Oliveira (Portugal) 1; Peter Van Der Keur (Denmark) 3; Hans-Jørgen Henriksen (Denmark) 3; Matthew J Roberts (Iceland) 4; Karoliina Pilli-Sihvola (Finland) 5; David Egilson (Iceland) 4; Amandine Harjanne (Finland) 3; Cristina Veiga-Pires (Portugal) 6,7; Ana Rita Carrasco (Portugal) 7; Bruno Sampath (Portugal) 7; Susana Costas (Portugal) 7; Isabel Mendes (Portugal) 7; Delminda Moura (Portugal) 7

1 – CCIAM/CE3C-FCUL: Climate Change Impacts, Adaptation and Modelling, Faculdade de Ciências – UL, Portugal; 2 – IRD – INRA, UMR LISAH, Montpellier, France; 3 – Geological Survey of Denmark and Greenland (GEUS); 4 – Icelandic Met Office (IMO); 5 – Finnish Meteorological Institute (FMI); 6 – Faculty of Sciences and Technology, University of Algarve, Portugal; 7 – CIMA-UALG: Marine and Environmental Research Centre, University of Algarve, Portugal

Hazard impacts are changing due to modern-day issues such as urbanization and land use change, infrastructure vulnerabilities or globalization. Additionally, climate change will pose as an extra pressure to artificialized and natural systems, with the increase of the severity of extreme weather events, such as droughts, heat waves, floods as well as changes in temperature and precipitation. Despite the advances in data, technology and methodology that allows for an increase in knowledge related with climate events, there is still lack of public and decision makers awareness, which can lead to a poor adaptation capacity.

To deal with this, there are several methods to increase preparedness, including improved institutional and decision makers empowerment, the enhancement of established knowledge, the design and implementation of co-creation techniques for planning, public participation by means of community-based monitoring and filling of data gaps, risk-management solutions or monitoring techniques.

In this session, we will present and discuss two different approaches to increase climate related awareness: the first associated with a participatory approach to empower decision-makers in southern Portugal through a design of a climate change adaptation plan; and the second related with the importance of citizen aided monitoring approaches to improve natural hazard monitoring in the Nordic countries.

The Nordic countries examples focus on the public's role in the early warning and monitoring process. Public observations in various forms – for instance photographs and social media updates – could be incorporated into existing monitoring networks and forecasting systems so that: (i) more timely and accurate warnings can be issued; (ii) more comprehensive compilations of damage impacts are received; and (iii) hazard awareness and perception of risk are improved. By taking advantage of the latest technological developments, citizen observations can support two-way information sharing by means of public-aided early warning and the improved individual's perception of natural risk. We will illustrate this approach with examples of recent natural hazards in Nordic countries from the perspective of families experiencing natural hazards (Abstract 2, 3 and 6).

Southern Portugal is in the Mediterranean area, known to be a climate change hotspot. Hence, it is required to have a scientific base empowerment of decision makers in climate change impacts and potential solutions, as well as community involvement in the decision process. In order to address these challenges, a multidisciplinary approach was applied to develop a Regional Adaptation Plan for Algarve (Southern Portugal), which includes several climate change impacts assessments in multiple sectors (e.g. water, human health or coastal areas) and the design of adaptation measures with the development of adaptation pathways (Abstract 1, 4 and 5).

Presenters

1. Nunes, Morais, Aparício, Fonseca and Pastor | IRD-INRA | **Santos and Dias** | CCIAM/cE3c-FCUL | Co-creating climate change adaptation pathways for water resources in southern Portugal

2. Peter van der Keur | **Hans-Jørgen Henriksen** | GEUS | Urban flooding and monitoring shallow groundwater: Nature-based solutions in Copenhagen

3. Matthew James Roberts | **David Egilson** | IMO | The incorporation of public observations in Icelandic Meteorological Office monitoring system

4. Oliveira, Aparicio, Santos, Dias | CCIAM/cE3c-FCUL | Heat-related mortality projections under climate change scenarios in southern Portugal

5. Veiga-Pires | CIMA-UALG; FCT-UALG | **Carrasco, Sampath, Costas and Mendes** | CIMA-UALG | **Moura** | CIMA-UALG; FCT-UALG | **Dias** | CCIAM/cE3c-FCUL | The importance of coastal zone knowledge for co-creating climate change adaptation pathways: A case study from southern Portugal

6. Karoliina Pilli-Sihvola | **Atte Harjanne** | FMI | The experience in public observations through the mobile Weather app

SCIENCE SESSION

SS048



11:15 Thursday

Room S16

Keywords: adaptive behaviour, climate services, heat island effect, heat stress, heat waves, urban planning

Climate services and methods for heat and health in urban areas

Chair | Peter Bosch | TNO

Summary of research results focused on the co-production and participatory development of methods and tools for services that address risks and opportunities in the management of heat and health issues, including pollen and vector-borne diseases in urban areas across Europe.

OC283

Engaging the health community in climate change risks

Julie Berckmans (Belgium) 1; **Hans Hooyberghs** (Belgium) 1; **Filip Lefebvre** (Belgium) 1; **Koen De Ridder** (Belgium) 1

1 – VITO

OC284

Dealing with heat stress at open air events: A multi-method approach on visitors' vulnerability, risk awareness and adaptive behaviour

Anna Heidenreich (Germany) 1; **Martin Buchner** (Germany) 1; **Ariane Walz** (Germany) 1; **Annegret Thieken** (Germany) 1

1 – University of Potsdam

Stockholm as a heat resilient city for the future – the role of climate services in urban planning

Jorge H. Amorim (Sweden) 1; David Segersson (Sweden) 1; Christina Wikberger (Sweden) 2; Christer Johansson (Sweden) 2; Isabel Ribeiro (Sweden) 1; Lena Strömbäck (Sweden) 1

1 – Swedish Meteorological and Hydrological Institute (SMHI); 2 – Stockholm City

Connecting Nature project – researching and communicating the use of innovative nature base solutions to address impacts of a changing climate

Sonia Milne (United Kingdom) 1; **Gillian Dick** (United Kingdom) 1

1 – Climate Change Strategy, Glasgow City Council

Citizen Sensing – co-development of climate services to increase urban climate resilience

Tina-Simone Neset (Sweden) 1; Tomasz Opach (Norway) 2; Carlo Navarra (Sweden) 1; Lotta Andersson (Sweden) 3; Julie Wilk (Sweden) 1; Jacob Wikner (Sweden) 1; Sirkku Juhola (Finland) 4; Jan Ketil Rød (Norway) 2; Sara Santos Cruz (Portugal) 5; Annette Zijdervelden (Netherlands) 6

1 – Linköping University; 2 – NTNU; 3 – SMHI; 4 – Helsinki University; 5 – University of Porto; 6 – Deltares

Demonstrating the effects of climate adaptation measures for the Austrian city of Linz as part of CLARITY's climate services

Astrid Kainz (Austria) 1; Maja Zuvela-Aloise (Austria) 1; Robert Goler (Austria) 1; Rosmarie De Wit (Austria) 1; Claudia Hahn (Austria) 1

1 – Zentralanstalt für Meteorologie und Geodynamik (ZAMG)

TOOL-SHED SESSION

Making it local: Using the Place Standard tool for climate adaptation

Joseph Hagg (United Kingdom) 1; Anna Beswick (United Kingdom) 2

1 – University of Edinburgh; 2 – Sniffer/Adaptation Scotland

The Place Standard tool provides a simple framework to structure conversations about place. It allows you to think about the physical elements of a place (for example its buildings, spaces, and transport links) as well as the social aspects (for example whether people feel they have a say in decision making).

OC285

OC286

OC287

OC288



TS022

11:15 Thursday

Room S15

Keywords: place, local, social, engagement, community

One of the Place Standard's strengths is that it enables different groups to come together and to cooperate in order to make a balanced assessment of a place. It provides an opportunity for citizens to have more influence in local decision-making and, in doing so, improves democratic engagement.

The tool was developed to improve the quality and design of places to improve health and reduce health inequalities. It is now widely used in Scotland – and being used internationally (including Netherlands, Latvia, Macedonia and Turkey). As part of an ongoing improvement programme, the tool will be looking to better address sustainability and climate change issues.

Adaptation Scotland is working with partners to further develop the use of the tool for climate adaptation. This includes adjustments to questions, briefing materials and training for facilitators, and guidance on analysis of results from an adaptation perspective. Our early experience using the tool show it to be a powerful way to integrate adaptation into local situations.

At the ECCA tool shed we will offer a participants a hands-on facilitated demonstration of the Place Standard tool. The Place Standard tool is available in a variety of formats: handbook, online and app (apple and android).

Web address: www.placestandard.scot

TOOL-SHED SESSION

TS023



12:30 Thursday
Room S15

Keywords: collaboration,
communication, coordination,
visualisation, connections

Search and discovery of climate adaptation and disaster risk reduction landscape

Sukaina Bharwani (Sweden) 1; **Julia Barrott** (Sweden) 1

1 – Stockholm Environment Institute

The PLACARD Connectivity Hub is where the climate change adaptation (CCA) and disaster risk reduction (DRR) communities come together to better understand which organisations are working on what issues, and where overlaps and synergies may be.

The Hub will improve collaboration, communication and coordination between the CCA and DRR communities and reduce incidences of redundancy and replication, which can arise from a lack of awareness of parallel and complementary work.

The design provides a highly visual, interactive and comprehensive overview of CCA and DRR signature spaces, from a range of European and global CCA and DRR platforms, such as the European Climate Adaptation Platform Climate-ADAPT, UNISDR's knowledge sharing platform on disaster risk reduction, PreventionWeb, and SEI's global climate adaptation platform, weADAPT. The hub includes:

- A dynamic and interactive online visualisation of the landscape of organisations and activities, connecting the topic-specific knowledge networks on CCA and DRR.
- Content including articles, authors, topics and organisations, allowing users to find relevant evidence, expertise, tools and methods, good practice insights, and peers.
- Newly developed PLACARD taxonomies for CCA and DRR that provide excellent search abilities for discovering new projects, organisations and individuals with key expertise.
- A glossary that includes definitions of commonly used terms in CCA and DRR and usage notes.
- PLACARD: Words matter – using language & technology to better inform the CCA and DRR communities.

Web address: www.placard-network.eu/our-work/connectivity-hub

TOOL-SHED SESSION

Mapping governance of adaptation to climate change to support decision-making

Dominik Braunschweiger (Switzerland) 1,2; **Marco Pütz** (Switzerland) 1; **Frank Heidmann** (Germany) 3; **Mark-Jan Bludau** (Germany) 3

1 – Swiss Federal Institute for Forest, Snow and Landscape Research WSL; 2 – Schweiz; 3 – Potsdam University of Applied Sciences.

Climate change severely affects the Alpine space. Adaptation to climate change is needed in order to deal with these impacts but the implementation of national adaptation strategies is inhibited by multiple obstacles. Our aim is to provide a better understanding of the governance of adaptation to climate change in Switzerland.

We conceptualize governance as an interplay of policies, measures, actors and knowledge and visualize their interactions. That means we identify and visualize (i) who or what implements which policies and measures, (ii) who or what informs which policies, measures and actors and (iii) who decides, funds and monitors which policies and measures.

Following a qualitative research design our mapping is based on expert assessments on the most relevant adaptation policies, measures, actors, knowledge resources, and interactions. The data was collected from progress and final reports of the Swiss National Adaptation Strategy, the National Adaptation Action Plan, the Pilot Program Adaptation to Climate Change, the Grisons Climate Strategy, and other studies commissioned by the Climate Division of the Federal Office for the Environment.



TS024

13:00 Thursday

Room S15

Keywords: multilevel governance, mapping adaptation governance, decision support tool

After identifying important aspects of the collected data in a workshop, we followed an iterative design process by experimenting with various visualization types, finally resulting in the use of a radial network visualization. The interactive visualization depicts all items in a radial arrangement where their position indicates their geographical level and differently coloured lines between items mark different interactions. The size of an item symbolizes its number of interactions which makes important players immediately visible. The visualization is meant to allow the viewer to explore the data iteratively by following different interactions from item to item. Various filters can be enabled to examine specific item types or interaction types or limit the geographical level or the time span. A prototype of the visualization can be accessed from Mapping governance of adaptation to climate change in the Alpine space.

Web address: www.markjanbludau.de/goapply

TOOL-SHED SESSION

TS025



13:20 Thursday

Room S15

Keywords: climate services,
climate change adaptation,
urban planning

The Clarity Climate Services Information System – a screening tool for urban areas and infrastructure projects

Rosmarie De Wit (Netherlands) 1; **Denis Havlik** (Netherlands) 1; **Patrick Kaleta** (Netherlands) 1; **Patrick Zwickl** (Netherlands) 1; **Andrea Geyer-Scholz** (Netherlands) 1

1 – Zentralanstalt für Meteorologie und Geodynamik

CLARITY (EU-Horizon 2020, www.clarity-h2020.eu) develops an integrated Climate-Services-Information-System (CSIS), to transfer knowledge about climate change, its risks and implications for urban and traffic infrastructure projects to decision-makers. CSIS is a data-driven screening tool implemented as a web application helping users improve climate change adaptation planning efficiency. It uses data available at the European scale, informing end-users about potential hazards and risks in their study area.

The tool bases on existing guidelines, providing a sound and standardized methodology, so it can be applied globally. The CLARITY workflow follows 7 steps based on the methodology proposed in the EU “Non-paper guidelines for project managers: making vulnerable investments climate resilient” (EU-GL). The methodology was updated to comply with the Fifth Assessment report of the Intergovernmental Panel on Climate Change (IPCC), in order to promote an integrated modelling approach for Disaster Risk Reduction and Climate Change Adaptation. 4 steps comprise the hazard characterization, the exposure evaluation, the vulnerability analysis and the risk and impact assessment; 3 steps relate to the identification, assessment and integration of adaptation options.

The tool provides benefits on several levels:

- First, if the screening results show that no adaptation is necessary, involvement of additional experts is not required; the screening report provides proof of performing initial climate screening.
- Second, if the screening results show that some adaptations are necessary, the project-owner rapidly gains initial understanding of the project's risk profile and possible adaptation options. This knowledge can be shared easily with climate change adaptation experts providing expert services in the next step. Based on the screening results, relevant experts and suggestions for more detailed expert services are presented to the user on the associated marketplace.

In this way, cost and efforts required for adequate adaptation planning are minimized, while also streamlining the communication between project-owners and relevant climate change experts.

Web address: www.clarity-h2020.eu



Poster session & drinks reception

Presentations will take place beside the electronic poster boards at the drinks reception. An award for the best poster will be presented during the closing ceremony, voting will be organised through the conference app.

18:00 Tuesday



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

Screen 1 | Poster session 1 | **P0001** Exploring climate change adaptation in urban CSOs management using LID Technology

Kyungmin Kim (Korea, Republic of) 1; Inkyeong Sim (Korea, Republic of) 1; Jeongeun Won (Korea, Republic of) 1; Okjeong Lee (Korea, Republic of) 1; Jeonghyeon Choi (Korea, Republic of) 1; Sangdan Kim (Korea, Republic of) 2

1 – Division of Earth Environmental System Science (Major of Environmental Engineering), Pukyong National University; 2 – Department of Environment Engineering, Pukyong National University

Screen 1 | Poster session 1 | **P0002** Modelling gridded population density based on spatial features

Insang Yu (Korea, Republic of) 1; Huicheul Jung (Korea, Republic of) 1; Daeok Youn (Korea, Republic of) 2

1 – Korea Adaptation Center for Climate Change, Korea Environment Institute; 2 – Department of Earth Science Education, Chungbuk National University

Screen 1 | Poster session 1 | **P0003** Application of COSMO-CLM model with TERRA_URB parameterization scheme at urban site of Warsaw, Poland

Adam Jacewski (Poland) 1

1 – Institute of Meteorology and Water Management – National Research Institute

Screen 1 | Poster session 1 | **P0004** Opportunities for adaptation investment in Senegalese livestock sector: insight from VC-ARID approach

Waoundé Diop (Senegal) 1

1 – Université Cheikh Anta DIOP (UCAD)

Screen 1 | Poster session 1 | PO005 Climate change and territory: towards the adaptation plan for the metropolitan city of Milan

Eugenio Morello (Italy) 1; Francesco Musco (Italy) 1; Stefano Caserini (Italy) 1; Nicola Colaninno (Italy) 1; Filippo Magni (Italy) 1; Denis Maragno (Italy) 1; Giada Messori (Italy) 1

1 – Laboratorio di Simulazione Urbana Fausto Curti

Screen 1 | Poster session 1 | PO006 Long term rainfall change in Makanda (Makanda local Municipality): Implications and adaptive strategies

Sinethemba Peter (South Africa) 1

1 – Prof Nel and Dr Zhou

Screen 1 | Poster session 1 | PO007 Sensitivity analysis of extreme rainfall during summer in Korea against global warming

Inkyeong Sim (Korea, Republic of) 1; Jeongeun Won (Korea, Republic of) 1; Okjeong Lee (Korea, Republic of) 1; Jeonghyeon Choi (Korea, Republic of) 1; Kyungmin Kim (Korea, Republic of) 1; Sangdan Kim (Korea, Republic of) 2

1 – Division of Earth Environmental System Science (Major of Environmental Engineering), Pukyong National University; 2 – Department of Environment Engineering, Pukyong National University

Screen 1 | Poster session 1 | PO008 Climate change impact on particulate matter source contributions to the air quality in Aveiro Region

Silvia Coelho (Portugal) 1; Sandra Rafael (Portugal) 1; Joana Ferreira (Portugal) 1; Myriam Lopes (Portugal) 1

1 – University of Aveiro

Screen 1 | Poster session 1 | PO009 High-level climate change vulnerability analysis for Irish critical infrastructure

Lara Hawchar (Ireland) 1; Paraic Ryan (Ireland) 1; Owen Naughton (Ireland) 2; Paul Nolan (Ireland) 3

1 – Department of Civil and Environmental Engineering, University College Cork, Ireland; 2 – Department of Civil, Structural and Environmental Engineering, Trinity College Dublin, Ireland; 3 – Irish Centre for High-End Computing, National University of Ireland,

Screen 1 | Poster session 1 | PO010 Sub-hourly precipitation over a Mediterranean catchment in a high-resolution climate model

Edmund Meredith (Germany) 1; Edmund Ulbrich (Germany) 1; Henning Rust (Germany) 1

1 – Freie Universität Berlin

Screen 1 | Poster session 1 | PO011 Uncovering and communicating uncertainties in statistical downscaled climate projections

Adrienne Wootten (United States of America) 1; Keith Dixon (United States of America) 2; Dennis Adams-Smith (United States of America) 2; Renee Mcpherson (United States of America) 3

1 – South Central Climate Adaptation Science Center; 2 – NOAA Geophysical Fluid Dynamics Laboratory; 3 – University of Oklahoma

Screen 1 | Poster session 1 | PO012 Impacts of climate change on ecosystem services provision: SWAT applied to the watershed of Rio Homem

Emanuel Escobar Juipa (Peru) 2; Cláudia Carvalho Santos (Portugal) 1

1 – Universidade do Porto – CIBIO; 2 – Universidade do Porto – FCUP



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

Screen 2 | Poster session 2 | PO013 Numerical assessment of the saltwater propagation in the upper Tagus estuary during droughts

Marta Rodrigues (Portugal) 1; André B. Fortunato (Portugal) 1; Paula Freire (Portugal) 1

1 – Laboratório Nacional de Engenharia Civil

Screen 2 | Poster session 2 | PO014 Embedding modern climate science into organisational risk assessment processes and building resilience in response to the identified risks

Lizaveta Troshka (United Kingdom) 1

1 – AECOM

Screen 2 | Poster session 2 | PO015 Building narratives to characterise uncertainty in regional climate change through expert elicitation

Suraje Dessai (United Kingdom) 1

1 – University of Leeds

Screen 2 | Poster session 2 | PO016 The unusual suspects: Climate change adaptation in coastal small cities and towns

James Fitton (Denmark) 1; Martin Lehmann (Denmark) 1; David Major (United States of America) 2

1 – Aalborg University; 2 – Columbia University

Screen 2 | Poster session 2 | PO017 Climate change, dams and development in Tanzania's Rufiji basin

Christian Siderius (United Kingdom) 1; Japhet Kashaigili (Tanzania) 2; Seshagiri Kolusu (United Kingdom) 3; Martin Todd (United Kingdom) 3; Joanna Pardoe (United Kingdom) 1; Declan Conway (United Kingdom) 4

1 – London School of Economics; 2 – Sokoine University of Agriculture; 3 – Sussex University; 4 – London School of Economics

Screen 2 | Poster session 2 | PO018 A plan for climate change adaptation in the Tâmega and Sousa inter-municipality community: from predictive modelling of vulnerability to adaptation

J. A. Santos (Portugal) 1; A. Mendes (Portugal) 2; A. S. Vaz (Portugal) 3; A. Fonseca (Portugal) 1; C. Santos (Portugal) 4; H. Fraga (Portugal) 1; J. Cerejeira (Portugal) 5; J. F. Gonçalves (Portugal) 3; J. P. Honrado (Portugal) 3; J. R. Vicente (Portugal) 3; L. F. S. Fernandes (Portugal) 1; M. Alves (Portugal) 4; M. Santos (Portugal) 1; P. Fernandes (Portugal) 1; R. Alves (Portugal) 2; R. Costa (Portugal) 1; R. Sousa (Portugal) 5

1 – Centre for the Research and Technology of Biological and Agro-environmental Sciences, CITAB, Universidade de Trás-os-Montes e Alto Douro, UTAD, Vila Real, Portugal; 2 – Instituto para o Desenvolvimento Agrário da Região Norte, IDARN, Porto, Portugal; 3 – ICETA / CIBIO-Centro de Investigação em Biodiversidade e Recursos Genéticos, Faculdade de Ciências, Universidade do Porto, Porto, Portugal; 4 – Comunidade Intermunicipal do Tâmega e Sousa, CIM-TS, Penafiel, Portugal; 5 – Universidade do Minho, Braga, Portugal

Screen 2 | Poster session 2 | PO019 Climate change impact on the energy performance of residential buildings in Portugal

Cristina Andrade (Portugal) 1,2,3; Sandra Mourato (Portugal) 4,5; João Ramos (Portugal) 4,6

1 – Polytechnic Institute of Tomar, (NHRC.ipt) Natural Hazards Research Center, Tomar, Portugal; 2 – Centre for the Research and Technology of Agro-Environmental and Biological Sciences (CITAB), University of Trás-os-Montes e Alto Douro, Vila Real, Portugal; 3 – University of Aveiro, CESAM, Aveiro, Portugal; 4 – School of Technology and Management, Polytechnic Institute of Leiria, Portugal; 5 – ICAAM – Instituto de Ciências Agrárias e Ambientais Mediterrânicas, Escola de Ciências e Tecnologia, Universidade de Évora, Portugal; 6 – Institute for Systems Engineering and Computers at Coimbra, INESC Coimbra, Portugal

Screen 2 | Poster session 2 | PO020 Precipitation trends and the adaptation measures to climate change in Santiago Island (Cape Verde)

Carmen Celine Martins (Portugal) 1; Isabel Pedroso De Lima (Portugal) 1,2; João Pedroso De Lima (Portugal) 1,2

1 – MARE – Marine and Environmental Sciences Centre; 2 – Department of Civil Engineering, Faculty of Sciences and Technology, University of Coimbra

Screen 2 | Poster session 2 | PO021 Simulating the effectiveness of greening measures for reducing the urban heat island effect: the case study of Milan

Nicola Colaninno (Italy) 1; Ahmed Eldesoky (Italy) 2; Eugenio Morello (Italy) 1

1 – Laboratorio di Simulazione Urbana Fausto Curti, Dipartimento di Architettura e Studi Urbani, Politecnico di Milano; 2 – PhD candidate, Università IUAV di Venezia

Screen 2 | Poster session 2 | PO022 Developing adaptive capacity for highly vulnerable and low capacity sectors; a case study

Nicholas Pyatt (United Kingdom) 1; Doogie Black (United Kingdom) 1; Tim Reeder (United Kingdom) 1

1 – Trioss

Screen 2 | Poster session 2 | PO023 Coastal adaptation along the Spanish coast. How are we doing?

Uxia Lopez-Doriga (Spain) 1; Jose A. Jimenez (Spain) 1; Jochen Hinkel (Germany) 2; Alexander Bisaro (Germany) 2

1 – Laboratori d'Enginyeria Marítima, Universitat Politècnica de Catalunya BarcelonaTech; 2 – Global Climate Forum, Berlin

Screen 2 | Poster session 2 | PO024 Understanding the context for urban climate services

Nicola Golding (United Kingdom) 1

1 – Met Office



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

Screen 3 | Poster session 3 | PO025 A climate change vulnerability assessment approach: the case study of the Marche Region

Andrea Salmeri (Italy) 1; Francesca Giordano (Italy) 1

1 – Institute for Environmental Protection and Research (ISPRA)

Screen 3 | Poster session 3 | PO026 Will inundation hazard by storm surges change in the near-future? The upper Tagus estuary case

André B. Fortunato (Portugal) 1; Marta Rodrigues (Portugal) 1; Paula Freire (Portugal) 1; Edmund Meredith (Germany) 2; Xavier Bertin (France) 3; Juan Ferreira (Portugal) 4; Margarida L.R. Liberato (Portugal) 5

1 – National Laboratory for Civil Engineering; 2 – Institut für Meteorologie; 3 – UMR 7266 LIENSs, CNRS – Université de La Rochelle; 4 – Escola de Ciências e Tecnologia, Universidade de Trás-os-Montes e Alto Douro; 5 – Escola de Ciências e Tecnologia, Universidade de Trás-os-Montes e Alto Douro, and Instituto Dom Luiz

Screen 3 | Poster session 3 | [P0027](#) Indicators of climate change impact on the marine ecosystems: criteria for a prioritization

Claudia Sebbio (Italy) 1; Francesca Giordano (Italy) 1

1 – ISPRA

Screen 3 | Poster session 3 | [P0028](#) Calibration of a one-way coupled atmospheric-hydrologic model for the study of extreme events over Cyprus

Corrado Camera (Italy) 1; Georgios Zittis (Cyprus) 2; Adriana Bruggeman (Cyprus) 2; Ioannis Sofokleous (Cyprus) 2

1 – Dipartimento di Scienze della Terra – Università degli Studi di Milano; 2 – Energy Environment and Water Research Center – The Cyprus Institute

Screen 3 | Poster session 3 | [P0029](#) Remote sensing in post-fire impact assessment and vegetation recovery monitoring

Giorgio Pace (Portugal) 1; Renato Henriques (Portugal) 2; Fernanda Cássio (Portugal) 1; Claudia Pascoal (Portugal) 1

1 – CBMA Centre of Molecular and Environmental Biology, University of Minho, Braga, Portugal; 2 – Institute of Earth Sciences (ICT), Braga, Portugal

Screen 3 | Poster session 3 | [P0030](#) High temperatures, delays and the London Underground: Is there a relationship? How might climate change impact its future infrastructural performance?

Sarah Greenham (United Kingdom) 1

1 – University of Birmingham

Screen 3 | Poster session 3 | [P0031](#) Identification of potential groundwater dependent vegetation in the Iberian Peninsula using NDVI

Patrícia Páscoa (Portugal) 1; Célia M. Gouveia (Portugal) 1,2; Ana Russo (Portugal) 1; Cathy K. Besson (Portugal) 1

1 – Instituto Dom Luiz; 2 – Instituto Português do Mar e da Atmosfera

Screen 3 | Poster session 3 | [P0032](#) Seasonal forecasting for Eastern Mediterranean region with the atmospheric model WRF and the sea waves model WAM

George Emmanouil (Greece) 1; Diamando Vlachogiannis (Greece) 1; Athanasios Sfetsos (Greece) 1; Stylianos Karozis (Greece) 1

1 – NCSR Demokritos

Screen 3 | Poster session 3 | [P0033](#) In situ mapping of pollutants in Sustainable Urban Drainage Systems, a new methodology approach and preliminary results from the Netherlands

Guri Venvik (Norway) 1; Floris Boogaard (Netherlands) 2; Allard Roest (Netherlands) 2

1 – Geological Survey of Norway; 2 – Hanze University Applied Science Groningen

Screen 3 | Poster session 3 | **PO035** **Extremely hot summers preceded by spring droughts in the Mediterranean**

Ana Russo (Portugal) 1; Célia Gouveia (Portugal) 2; Emanuel Dutra (Portugal) 1; Pedro M.M. Soares (Portugal) 1; Ricardo M. Trigo (Portugal) 1

1 – Instituto Dom Luiz; 2 – IPMA

Screen 3 | Poster session 3 | **PO036** **The influence of meteorological conditions on the extreme 2014 Legionella episode**

Ana Russo (Portugal) 1; Célia M. Gouveia (Portugal) 2; Pedro M.M. Soares (Portugal) 1; Rita M. Cardoso (Portugal) 1; Ricardo M. Trigo (Portugal)

1 – Instituto Dom Luiz; 2 – IPMA



Co-production of knowledge, solutions and services

Screen 4 | Poster session 4 | **PO037** **Increasing citizens' perception and awareness of climate risks – a case study in Porto**

Ana Monteiro (Portugal) 1; Sara Santos Cruz (Portugal) 1; Paulo Conceição (Portugal) 1; Filipa Malafaya (Portugal) 1; Paula Gonçalves (Portugal) 1; Tomasz Opach (Norway) 3; Carlo Navarra (Norway) 2

1 – CITTA, University of Porto; 2 – Linköping University; 3 – Norwegian University of Science and Technology (NTNU) & Linköping University (LiU)

Screen 4 | Poster session 4 | **PO038** **Collaborative approach to produce climate information for decision-making**

Stéphanie Bleau (Canada) 1

1 – Ouranos, consortium on regional climatology and adaptation to climate change

Screen 4 | Poster session 4 | **PO039** **Integrating NBS in cities through co-creation: a practical guidance for CLEVER Cities**

Israa Mahmoud (Italy) 1; Giuseppe Salvia (Italy) 2; Eugenio Morello (Italy) 1

1 – Laboratorio di Simulazione Urbana Fausto Curti Dipartimento di Architettura e Studi Urbani Politecnico di Milano; 2 – Laboratorio di Simulazione Urbana Fausto Curti, Dipartimento di Architettura e Studi Urbani, Politecnico di Milano

Screen 4 | Poster session 4 | **PO040** **Territorial thinking for climate adaptation: combining future-oriented, systemic design and intercultural knowledge**

Fronika De Wit (Portugal) 1; Carolina Giraldo Nohra (Italy) 2; Astrid Mangnus (Netherlands) 3

1 – ICS – University of Lisbon; 2 – Politecnico di Torino, Italy; 3 – Utrecht University

Screen 4 | Poster session 4 | PO041 Municipalities in transition – collaboration between citizen-led initiatives and local governments

Pedro Macedo (Portugal) 1

1 – Universidade de Lisboa, Faculdade de Ciências, cE3c CCIAM

Screen 4 | Poster session 4 | PO042 A museum of anthropology: Eco-cultural restoration

Alyssa Schwann (Canada) 1

1 – Assistant Professor

Screen 4 | Poster session 4 | PO043 Governance of Nature-Based Solutions. Social equity in trans-sectoral co-creation and co-production

Yvette Jeuken (Netherlands) 1

1 – Duneworks, the Netherlands

Screen 4 | Poster session 4 | PO044 Applying the Living Lab approach for climate services. A case study example from a Baltic coastal city

Bente Vollstedt (Germany) 1; Jana Koerth (Germany) 1; Athanasios Vafeidis (Germany) 1

1 – Kiel University

Screen 4 | Poster session 4 | PO045 Climate information for the finance sector: case studies in France and the Netherlands

Florian Gallo (France) 1; Violaine Lepousez (France) 1

1 – Carbone 4

Screen 4 | Poster session 4 | PO046 Engaging with local small businesses and households to develop simple climate change risk management tools

Fahim Tonmoy (Australia) 1; David Rissik (Australia) 2

1 – School of Engineering and Built Environment, Griffith University, Australia; 2 – Senior Principal Climate Change Adaptation, BMT

Screen 4 | Poster session 4 | PO047 Adaptation and the rise of the pracademic

Celeste Young (Australia) 1

1 – Victoria University

Screen 4 | Poster session 4 | PO048 Curation, coproduction and case studies: Good practice in climate change adaptation.

David Rissik (Australia) 1; Anne Leitch (Australia) 2

1 – BMT; 2 – Griffith University



Co-production of knowledge, solutions and services

Screen 5 | Poster session 5 | **P0049** Understand and acting on coastal change along heritage coasts

Sally Brown (United Kingdom) 1; Phil Dyke (United Kingdom) 2; Helen Mann (United Kingdom) 2

1 – Bournemouth and Southampton University; 2 – National Trust

Screen 5 | Poster session 5 | **P0050** Exploratory approaches to question the implications of climate change for critical infrastructure and services: example of the French Railway system

Vivian Depoues (France) 1

1 – I4CE – Institute for Climate Economics

Screen 5 | Poster session 5 | **P0052** Co-creation for climate change adaptation in fisheries and aquaculture with various stakeholders, from policy to industry level

Charlotte Teresa Weber (Norway) 1; Michaela Aschan (Norway) 1; Rosa Chapela (Spain) 2; Mariola Norte (Spain) 2; Thi Thanh Thuy Pham (Norway) 1

1 – UiT – The Arctic University of Norway; 2 – Cetmar

Screen 5 | Poster session 5 | **P0053** Green revolution technologies and Sub-Saharan Africa: Analyzing the constellation of constraints for scaling-up agriculture

Srijna Jha (Germany) 1

1 – Leibniz Center for Agricultural Landscape Research, Germany

Screen 5 | Poster session 5 | **P0054** Cocreation of climate change resources with two Indigenous Shire Councils in Australia

Anne M Leitch (Australia) 1; Kerrie Foxwell-Norton (Australia) 1

1 – Griffith University

Screen 5 | Poster session 5 | **P0055** Building community consensus of prioritized issues via a participatory integrated assessment approach – climate change participatory workshop

Shih-Yun Kuo (Taiwan) 1; Hsin-Chi Li (Taiwan) 1

1 – National Science and Technology Center for Disaster Reduction

Screen 5 | Poster session 5 | **P0056** Communicating climate science through poems, songs, theatre & visual art – the story of ‘Climate Stories’

Bernd Eggen (United Kingdom) 1; Natalie Garrett (United Kingdom) 1; Jane Strachan (United Kingdom) 1; Peter Stott (United Kingdom) 1,2

1 – Met Office Hadley Centre; 2 – University of Exeter

Screen 5 | Poster session 5 | PO057 Co-defining adaptation pathways for Blue Growth in the context of insularity

Hugo Costa (Portugal) 1; Andreia Sousa (Portugal) 1; Tiago Capela Lourenço (Portugal) 1; Matías González Hernández (Spain) 4; Florin Ioras (United Kingdom) 2; Gabriel Jorda (Spain) 3; Carmelo Leon (Spain) 4; Fernando Tuya (Spain) 4; Yen Lam González (Spain) 4; Elodie Briche (Spain) 5; Ghislain Dubois (Spain) 5; Rob Swart (Portugal) 1

1 – CE3C-CCIAM; 2 – BNU; 3 – UIB; 4 – ULPGC; 5 – TEC-Conseil

Screen 5 | Poster session 5 | PO058 Using and developing climate indices for nature-based tourism in Norway

Stephanie Mayer (Norway) 1; Eivind Brendehaug (Norway) 2; Inger Hanssen-Bauer (Norway) 3,4

1 – NORCE Norwegian Research Centre, Bjerknes Centre for Climate Research, Norwegian Centre for Climate Services; 2 – Western Norway Research Institute; 3 – Norwegian Meteorological Institute; 4 – Norwegian Centre for Climate Services

Screen 5 | Poster session 5 | PO059 CoCLiME: Co-development of climate services for adaptation to changing Marine Ecosystems

Caroline Cusack (Ireland) 1; Eleanor O'Rourke (Ireland) 1; Beatrix Siemering (Ireland) 1; Gregor Vulturius (Sweden) 2; Philipp Hess (France) 3; Muriel Travers (France) 4; Gildas Appéré (France) 5; Véronique Le Bihan (France) 4; Jeremy Thomas (France) 4; Patrice Guillotreau (France) 4; Elisa Berdalet (Spain) 6; Rodolphe Lemeé (France) 7; Matthias Gröger (Sweden) 8; Bengt Karlson (Sweden) 8; Lars Arneborg (Sweden) 8; Lars Naustvoll (Norway) 9; Elena Stoica (Romania) 10; Jennifer West (Norway) 11

1 – Marine Institute; 2 – Stockholm Environment Institute; 3 – Ifremer; 4 – LEMNA, University of Nantes; 5 – GRANEM, University of Angers; 6 – Institute of Marine Sciences ICM-CSIC; 7 – Laboratoire d'Océanographie de Villefranche, Sorbonne Université; 8 – SMHI; 9 – Institute of Marine Research; 10 – National Institute for Marine Research and Development "Grigore Antipa"; 11 – CICERO

Screen 5 | Poster session 5 | PO060 Co-production of knowledge with regional adaptation managers in Austria

Gernot Woerther (Austria) 1; Andrea Prutsch (Austria) 2; Anna Schmidt (Austria) 3

1 – Austrian Climate and Energy Fund; 2 – Umweltbundesamt; 3 – Environment Agency Austria



Communication, data sharing and decision support

Screen 6 | Poster session 6 | **PO061** Integrating urban mitigation and adaptation? The links between global and local climate risks and co-benefits

Taedong Lee (Korea, Republic of) 1

1 – Yonsei University

Screen 6 | Poster session 6 | **PO062** The discussion of national adaptation promotion experience and the next national adaptation plan in Taiwan

Ming-Wei Chen (Taiwan) 1; Zheng-Zong Yeh (Taiwan) 1; Yi-Ping Yang (Taiwan) 1; Wu-Hsiung Chou (Taiwan) 1; Cheng-Ting Lin (Taiwan) 2; Keng-Cheng Yeh (Taiwan) 2

1 - Sinotech Engineering Services, LTD; 2 - Environmental Protection Administration, Executive Yuan, R.O.C. (Taiwan)

Screen 6 | Poster session 6 | **PO063** Canvas exercise applied to exploitation – methodology for collectively defining exploitable results

Rita Andrade (Portugal) 1; Douglas Thompson (Portugal) 1

1 – SPI – Sociedade Portuguesa de Inovação

Screen 6 | Poster session 6 | **PO064** Climate adaptation services: User needs and adaptation services embedded in a web portal for climate services

Kleppek Sabine (Switzerland) 1

1 – Federal Office for the Environment (FOEN)

Screen 6 | Poster session 6 | **PO065** Assessing user needs for climate adaptation services. How empirical evidence leads to a webportal and network for adaptation services

Kirsten Sander (Germany) 1; Esther Hoffmann (Germany) 2; Johannes Rupp (Germany) 2

1 – German Environment Agency; 2 – Institute for Ecological Economy Research

Screen 6 | Poster session 6 | **PO066** Towards useable and living climate assessments: integrating across approaches in data sharing, visualization, provenance and online delivery

Fred Lipschultz (United States of America) 1

1 – US Global Change Research Program

Screen 6 | Poster session 6 | **PO067** Advertising and its interdependence with the roots of climate change: rethinking the role of agency to address global warming

David Park (United States of America) 1

1 – Florida International University

Screen 6 | Poster session 6 | PO068 Communicating climate change adaptation: Perceptions of flooding and flood risk in the Aire Valley West Yorkshire, England

Emma Stevens (United Kingdom) 1

1 – University of Sheffield

Screen 6 | Poster session 6 | PO069 Thermal comfort vulnerability of residential buildings: Assessing different climate and socio-economic perspectives for Portugal in 2050

João Pedro Gouveia (Portugal) 1; Pedro Palma (Portugal) 1; Sofia Simoes (Portugal) 1; Júlia Seixas (Portugal) 1

1 – CENSE – Center for Environmental and Sustainability Research, NOVA School of Science and Technology, NOVA University Lisbon

Screen 6 | Poster session 6 | PO070 The Washington Coastal Resilience Project: Preparing Washington State, USA communities for the future of climate change

Katrina Radach (United States of America) 1; Jackson Blalock (United States of America) 1; Molly Bogeberg (United States of America) 1; Bridget Trosin (United States of America) 2

1 – The Nature Conservancy; 2 – Washington Sea Grant

Screen 6 | Poster session 6 | PO071 Copernicus User Learning Services: training programme assisting adaptation professionals in using climate data to support decision making

Annemarie Groot (Netherlands) 1; Emma Daniels (Netherlands) 1; Wilma Jans (Netherlands) 1; Nies Springe (Netherlands) 1; Fulco Ludwig (Netherlands) 2; Maria Del Pozo Garcia (Netherlands) 2; Janine Quist (Netherlands) 2; Marta Bruno Soares (Netherlands) 3; Janette Bessembinder (Netherlands) 4

1 – Wageningen Environmental Research, the Netherlands; 2 – Wageningen University, the Netherlands; 3 – University of Leeds, UK; 4 – KNMI, The Royal Netherlands Meteorological Institute

Screen 6 | Poster session 6 | PO072 Visualizing local vulnerability to climate change for local environmental planning and communication with policy-makers and stakeholders

Makoto Ooba (Japan) 1; Takuya Togawa (Japan) 1; Shogo Nakamura (Japan) 1; Kei Gimi (Japan) 1; Akira Yoshioka (Japan) 1; Keisuke Kuroda (Japan) 1; Ronald Canero Estoque (Japan) 1

1 – National Institute for Environmental Studies



6. Climate risk management and resilience

Screen 7 | Poster session 7 | **PO073** Assessing meteorological data availability for prescribed burning as a decision support tool in fire prevention

Susana Dias (Portugal) 1; Conceição Colaço (Portugal) 1; Leónia Nunes (Portugal) 2,3; Francisco Rego (Portugal) 4

1 – Centre for Applied Ecology Prof. Baeta Neves (CEABN-InBIO), School of Agriculture, University of Lisbon; 2 – Centre for Applied Ecology Prof. Baeta Neves (CEABN-InBIO), School of Agriculture, University of Lisbon and; 3 – Centre of the Research and Technology of Agro-Environmental and Biological Science (CITAB), University of Trás-os-Montes and Alto Douro (UTAD); 4 – Centre for Applied Ecology Prof. Baeta Neves (CEABN-InBIO), School of Agriculture, University of Lisbon

Screen 7 | Poster session 7 | **PO074** Urban trees contribution for mitigation of heat waves and air pollution: a first appraisal in Lisbon

Susana Dias (Portugal) 1; Marisa Graça (Portugal) 1; Ana Luisa Soares (Portugal) 1; Francisco Rego (Portugal) 1

1 – Centre for Applied Ecology Prof. Baeta Neves (CEABN-InBIO), School of Agriculture, University of Lisbon, Portugal

Screen 7 | Poster session 7 | **PO075** A system dynamics approach for evaluation of climate change impact and adaptation strategies on the Jucar River Basin

Adrià Rubio-Martín (Spain) 1; Alberto García-Prats (Spain) 1; Héctor Macián-Sorribes (Spain) 1; Patricia Marcos-García (Spain) 1; Manuel Pulido-Velázquez (Spain) 1

1 – Instituto Universitario de Ingeniería del Agua y del Medio Ambiente (IIAMA-UPV)

Screen 7 | Poster session 7 | **PO076** Climate mitigation and adaptation strategies of metropolises and medium-sized cities in Germany

Annegret Thieken (Germany) 1; Dierck Julia (Germany) 1; Otto Antje (Germany) 1

1 – University of Potsdam, Institute of Earth and Environmental Science

Screen 7 | Poster session 7 | **PO077** Bridging the investment gap in flood risk management and climate resilient urban development

Sebastiaan Van Herk (Spain) 1; Max Berkelmans (Spain) 1; Chris Zevenbergen (Spain) 2; Jesse Renema (Netherlands) 1

1 – Bax & Company; 2 – IHE Delft

Screen 7 | Poster session 7 | **PO078** From researcher to practitioner: Developing a novel Decision Support System (DSS) to support decision making under uncertainty and adaptation planning

Michael Green (United Kingdom) 1

1 – Principal Consultant – Climate, Resilience and Sustainability, Wood

Screen 7 | Poster session 7 | P0079 HAZUR as an agile & flexible tool to operationalise resilience

Ignasi Fontanals (Spain) 1; Luis Fontanals (Spain) 1; Marc Vuillet (France) 2; Jean-Marie Cariolet (France) 2; Youssef Diab (France) 3

1 – Opticits; 2 – EIVP, Lab'Urba; 3 – EIVP, UPEM, Lab'Urba

Screen 7 | Poster session 7 | P0080 Preserved forages for horses in a climate change context: expected problems and adaptation measures

Daniela Soares (Portugal) 1; Maria João Fradinho (Portugal) 2; João Rolim (Portugal) 3; Teresa Afonso Paço (Portugal) 3

1 – Instituto Superior de Agronomia, Universidade de Lisboa; 2 – Centro de Investigação Interdisciplinar em Sanidade Animal, Faculdade de Medicina Veterinária, Universidade de Lisboa; 3 – Linking Landscape, Environment, Agriculture and Food, Instituto Superior de Agronomia, Universidade de Lisboa

Screen 7 | Poster session 7 | P0081 Preventing flooding risk by making resilient communities

Clarissa Dondi (Italy) 1; Astrid Franceschetti (Italy) 1; Morena Barilani (Italy) 1; Eva Merloni (Italy) 2; Alessandra De Savino (Italy) 3; Marco Cardinaletti (Italy) 3; Valeria Pancioli (Italy) 1

1 – Emilia-Romagna Regional Agency for territorial safety and civil protection; 2 – Area Europa scarl; 3 – Eurocube srl

Screen 7 | Poster session 7 | P0082 Site-level resilience planning for Natura 2000 woodlands in Scotland

Duncan Stone (United Kingdom) 1; Chris Donald (United Kingdom) 1; Christiane Valluri-Nitsch (United Kingdom) 1

1 – Scottish Natural Heritage

Screen 7 | Poster session 7 | P0083 A framework to examine the adaptive capacity of peri-urban institutions in a changing and uncertain future

Sharlene L. Gomes (Netherlands) 1; Leon M. Hermans (Netherlands) 1

1 – Delft University of Technology

Screen 7 | Poster session 7 | P0084 The forgotten blue-green passages and their potentials for climate change adaptation with multiple benefits in urban landscapes

Katrina Marstrand Wiberg (Denmark) 1

1 – Aarhus School of Architecture



6. Climate risk management and resilience

Screen 8 | Poster session 8 | **P0085** Southern Hemisphere climate changes studies: a contribution for climate risk management and resilience

Ana Gomes (Portugal) 1; Delminda Moura (Portugal) 2; Nuno Bicho (Portugal) 1; Simon Connor (France) 3,4; Mussa Raja (Portugal) 1; Jonathan Haws (United States of America) 5; Mussa Achimo (Mozambique) 6; Brandon Zinsious (United States of America) 7; Elena Skosey-Lalonde (United States of America) 7; Célia Gonçalves (Portugal) 1; Sónia Oliveira (Portugal) 2; Roxane Matias (Portugal) 1; Paulo Fernandes (Portugal) 2; Susana Costas (Portugal) 2; João Cascalheira (Portugal) 1

1 – Interdisciplinary Center for Archaeology and Evolution of Human Behaviour, University of Algarve; 2 – Centre for Marine and Environmental Research, University of Algarve; 3 – Maison des Sciences de l'Homme et de l'Environnement, Université Bourgogne Franche-Comté; 4 – School of Geography, University of Melbourne; 5 – University of Louisville; 6 – University Eduardo Mondlane; 7 – University of Connecticut

Screen 8 | Poster session 8 | **P0086** Climate change risk associated with the prison system in Victoria, Australia. Managing these important institutions into the future?

David Rissik (Australia) 1

1 – BMT

Screen 8 | Poster session 8 | **P0087** Effect of increasing surface air temperature and sea surface temperature on typhoon rainfall maximization

Jeonghyeon Choi (Korea, Republic of) 1; Kyungmin Kim (Korea, Republic of) 1; Inkyeong Sim (Korea, Republic of) 1; Jeongeun Won (Korea, Republic of) 1; Okjeong Lee (Korea, Republic of) 1; Sangdan Kim (Korea, Republic of) 2

1 – Division of Earth Environmental System Science (Major of Environmental Engineering), Pukyong National University, Busan, South Korea; 2 – Department of Environmental Engineering, Pukyong National University, Busan, South Korea

Screen 8 | Poster session 8 | **P0088** Reproduction of historically heavy rainfall event for making maximized rainfall event

Jeongeun Won (Korea, Republic of) 1; Okjeong Lee (Korea, Republic of) 1; Jeonghyeon Choi (Korea, Republic of) 1; Kyungmin Kim (Korea, Republic of) 1; Inkyeong Sim (Korea, Republic of) 1; Sangdan Kim (Korea, Republic of) 2

1 – Division of Earth Environmental System Science (Major of Environmental Engineering), Pukyong National University; 2 – Department of Environment Engineering, Pukyong National University

Screen 8 | Poster session 8 | **P0089** Protect assets or be resilient? Learning from disaster theory and practice

John Handmer (Australia) 1

1 – School of Science, RMIT University

Screen 8 | Poster session 8 | P0090 The ‘resilient’ and the ‘good’ city: how tensions in managing urban heat arise

Maurice Skelton (Switzerland) 1,2; Christian Pohl (Switzerland) 1; Suraje Dessai (United Kingdom) 3; David N. Bresch (Switzerland) 1,2

1 – ETH Zurich; 2 – MeteoSwiss; 3 – University of Leeds

Screen 8 | Poster session 8 | P0091 Roadmap for climate change adaptation in Southern Portugal – a water utility experience

Olga Martins (Portugal) 1; Angela Valadas (Portugal) 1; Ana Ribeiro (Portugal) 2; Joana Coelho (Portugal) 2; Marta Carvalho (Portugal) 2

1 – AgdA- Aguas Publicas do Alentejo SA; 2 – Aguas de Portugal

Screen 8 | Poster session 8 | P0092 Circular economy and water efficiency as crucial tools for adaptation to climate change in Portugal

Fernanda Gomes (Portugal) 1; António Branco (Portugal) 1

1 – Portuguese Environment Agency

Screen 8 | Poster session 8 | P0093 Integrating climate change adaptation in ocean planning

Sara Hurtado (Portugal) 2; Francisco Andrade (Portugal) 2; Catarina Frazao-Santos (Portugal) 2

2 – University of Lisbon, MARE-Marine and Environmental Sciences Center

Screen 8 | Poster session 8 | P0094 Adapt at EDP Distribuição, as part of Climate Action Framework

Carlos Neto (Portugal) 1; Carlos Lourenço (Portugal) 1; Inês Silva (Portugal) 1; Nuno Duarte (Portugal) 1; Paulo Alberto (Portugal) 1; Rita Serra (Portugal) 1; Sara Goulartt (Portugal) 2; Sónia Cardoso (Portugal) 1; Tiago Rojão (Portugal) 1; Luísa Pestana (Portugal) 2

1 – EDP Distribuição; 2 – EDP, SA

Screen 8 | Poster session 8 | P0095 Roles and responsibilities in climate risk management in Austria – the RESPECT research project

Thomas Schinko (Austria) 1; Markus Leitner (Austria) 2

1 – Scientist; 2 – Project manager

Screen 8 | Poster session 8 | P0096 Decision making process: A data-driven approach to understand expert grading processes

Finn Laurien (Austria) 1; Stefan Hochrainer-Stigler (Austria) 1; Stefan Velez (Austria) 1

1 – International Institute for Applied System Analysis

19:00 Tuesday



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

Screen 1 | Poster session 9 | **PO097** Vulnerability and risk to sea-level rise on the continental Atlantic coast of Portugal

Carlos Antunes (Portugal) 1,2; Carolina Rocha (Portugal) 2; Cristina Catita (Portugal) 1,2

1 – Faculdade de Ciências da Universidade de Lisboa; 2 – Instituto Dom Luiz

Screen 1 | Poster session 9 | **PO098** CLIM2POWER Project: seasonal forecasting for hydropower capacity in the Douro river basin – Portuguese case study

Pedro Beca (Portugal) 1; Sofia G. Simões (Portugal) 2; Babar Mujtaba (Portugal) 1; Paulo Diogo (Portugal) 1; Amorim Filipa (Portugal) 2; Sílvia Carvalho (Portugal) 3; Pedro Paes (Portugal) 4; Paulo Alexandre Diogo (Portugal) 5

1 – MARE – FCT/UNL – Universidade NOVA de Lisboa; 2 – CENSE – FCT UNL; 3 – CE3C FCUL; 4 – EDP; 5 – Faculty of Sciences and Technology, New University of Lisbon, MARE

Screen 1 | Poster session 9 | **PO099** The RESCCUE approach for the effectiveness assessment of climate-related adaptation strategies in urban areas

Eduardo Martínez-Gomariz (Spain) 1; Salvador Vela (Spain) 1; Desirée Marin (Spain) 1

1 – Cetaqua, Water Technology Centre

Screen 1 | Poster session 9 | **PO100** The achievements of pilot projects for establishing climate change adaptation plans in Korea's 35 local governments and future direction

Youngshin Lim (Korea, Republic of) 1; Huicheul Jung (Korea, Republic of) 1

1 – Korea Adaptation Center for Climate Change, Korea Environment Institute

Screen 1 | Poster session 9 | **PO101** The land morphology approach to flood risk mapping: An application to Portugal

Natália S. Cunha (Portugal) 1; Manuela R. Magalhães (Portugal) 1; Tiago Domingos (Portugal) 2; Maria Manuela Abreu (Portugal) 1; Christian K pfer (Germany) 3

1 – LEAF, Linking Landscape, Environment, Agriculture and Food Research Centre, Instituto Superior de Agronomia, Universidade de Lisboa; 2 – MARETEC/LARSYS, Environment and Energy Scientific Area, Department of Mechanical Engineering, Instituto Superior Tecnico, Universidade de Lisboa; 3 – Landscape Planning and Nature Conservation Programme (LPN), Faculty Landscape Architecture, Environmental & Urban Planning, N rtingen-Geislingen University (HfWU), N rtingen, Germany

Screen 1 | Poster session 9 | PO102 Enable climate intelligent assistant for resilient cities

Ching-Pin Tung (Taiwan) 1; Jung-Hsuan Tsao (Taiwan) 1; Bing-Chen Jhong (Taiwan) 1; Ming-Hsu Li (Taiwan) 2; Po-Wen Perng (Taiwan) 1; Jung Huang (Taiwan) 1; Yu-Chuan Tien (Taiwan) 1; Chung-Yi Lin (Taiwan) 1

1 – Department of Bioenvironmental Systems Engineering, National Taiwan University; 2 – Graduate Institute of Hydrological and Oceanic Sciences, National Central University

Screen 1 | Poster session 9 | PO103 Climate adaptation services of smart water drainage system of a community using green infrastructures

Pei-Yuan Chen (Taiwan) 1; Ching-Pin Tung (Taiwan) 1

1 – National Taiwan University

Screen 1 | Poster session 9 | PO104 Landscape planning and permaculture interventions for fire prevention in headwater systems. Monchique case study

Maria Teresa Neto Santos (Portugal) 1; Selma B. Pena (Portugal) 2

1 – Universidade de Lisboa, Instituto Superior de Agronomia; 2 – Universidade de Lisboa, Instituto Superior de Agronomia, LEAF – Linking Landscape, Environment, Agriculture and Food Research Centre

Screen 1 | Poster session 9 | PO105 Household adoption of water conservation technologies in Tanzania

Srijna Jha (Germany) 1

1 – Leibniz Centre for Agricultural Landscape Research

Screen 1 | Poster session 9 | PO106 Prioritizing risks of emerging plant pests and diseases in the European Union based on their social, economic and environmental impacts

Emilio Rodriguez-Cerezo (Spain) 1; Berta Sanchez (Spain) 1; Jesús Barreiro-Hurlé (Spain) 1; Iria Soto-Embodas (Spain) 1

1 – European Commission, Joint Research Centre (JRC), Directorate D – Sustainable Resources, Economics of Agriculture. Isla de la Cartuja, c/ Inca Garcilaso 3, Seville, Spain.

Screen 1 | Poster session 9 | PO107 Waterways and climate change: A workflow for adapting river training

Linda Bergmann (Germany) 1; Regina Patzwahl (Germany) 1; Alexander Kikillus (Germany) 1; Nils Huber (Germany) 1

1 – Federal Waterways Engineering and Research Institute – Germany

Screen 1 | Poster session 9 | PO108 A climate change Impact assessment framework based on outcome indicator: values estimation focusing on the citizens' quality of life

Takuya Togawa (Japan) 1; Hiroyoshi Morita (Japan) 2; Estoque Ronald C. (Japan) 1; Makoto Ooba (Japan) 1; Takashi Tsuji (Japan) 1; Akira Yoshioka (Japan) 1; Kei Gomi (Japan) 1; Keisuke Kuroda (Japan) 1; Shogo Nakamura (Japan) 1; Noriyasu Kachi (Japan) 3

1 – National Institute for Environmental Studies, Japan; 2 – Nippon Engineering Consultants; 3 – Toyo University



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

Screen 2 | Poster session 10 | **PO109** Intermunicipal planning cooperation: An approach to Jamor river basin management

Jorge Simão Cruz (Portugal) 1; Selma B. Pena (Portugal) 2

1 – Universidade de Lisboa, Instituto Superior de Agronomia; 2 – Universidade de Lisboa, Instituto Superior de Agronomia, LEAF – Linking Landscape, Environment, Agriculture and Food Research Centre

Screen 2 | Poster session 10 | **PO110** Exploring the impact of low-frequency drought events in the Netherlands

Marjolein Mens (Netherlands) 1; Joost Delsman (Netherlands) 1; Ferdinand Diermanse (Netherlands) 1; Corine Ten Velden (Netherlands) 1; Martijn Visser (Netherlands) 1; Cor-Jan Vermeulen (Netherlands) 2; Bas De Jong (Netherlands) 3

1 – Deltares; 2 – HKV Consultants; 3 – Ministry of Infrastructure and the Environment

Screen 2 | Poster session 10 | **PO111** Machine learning for the development of tools for planning of climate adaptation

Henrik Vest Soerensen (Denmark) 1; Rikke Nan Valdemarsen (Denmark) 1

1 – Coast to Coast Climate Challenge

Screen 2 | Poster session 10 | **PO112** Validation of a multi-criteria decision making methodology for vulnerability assessment and prioritization of emergency actions

Leire Garmendia (Spain) 1; Alessandra Gandini (Spain) 2; Ignacio Piñero (Spain) 2; Jesús Cuadrado (Spain) 1; Eduardo Rojí (Spain) 1; Marta Olazabal (Spain) 3

1 – University of the Basque Country UPV/EHU; 2 – Tecnalía. Sustainable Construction Division; 3 – BC3 Basque Centre for Climate Change

Screen 2 | Poster session 10 | **PO113** Optimal operating rules under climate change combining agricultural and environmental goals with multiobjective programming in the Serpis River Basin (Spain)

Francisco Martinez-Capel (Spain) 1; Manuel Pulido-Velazquez (Spain) 1; Hector Macian-Sorribes (Spain) 1; Rafael Muñoz-Mas (Spain) 2; João Vieira (Portugal) 3; Cristina Barea-Sanchez (Spain) 1; Martin Ruiz-Rodriguez (Spain) 4

1 – Universitat Politècnica de València (UPV); 2 – Universitat de Girona; 3 – ITECONS – Universidade de Coimbra; 4 – Suez

Screen 2 | Poster session 10 | PO114 Comparing in-situ hyperspectral and fluorescence methods with remote sensing Sentinel-2 satellite data for mapping chlorophyll-a/cyanobacteria concentrations

Rui Lima (Netherlands) 1; Nils Van Der Vliet (Netherlands) 1; **Floris C. Boogaard** (Netherlands) 2; L.M. Dionisio Pires (Netherlands) 3; A. Hommersom (Netherlands) 4

1 – Indymo; 2 – Tauw, Hanze University of Applied Sciences, Indymo; 3 – Deltares; 4 – Water Insight

Screen 2 | Poster session 10 | PO115 Early detection and information extraction for weather-induced floods using social media streams

Claudio Rossi (Italy) 1

1 – Istituto Superiore Mario Boella

Screen 2 | Poster session 10 | PO116 Digital tools and methods to support decision-making for more resilient cities

Eleanor Chapman (Germany) 1; Julia Peleikis (Germany) 1; Vasileios Latinos (Germany) 1

1 – ICLEI – Local Governments for Sustainability (European Secretariat)

Screen 2 | Poster session 10 | PO117 Water observatories as supporting tools to climate change adaptation in coastal ecosystems

Marta Rodrigues (Portugal) 1; Alexandra Cravo (Portugal) 2; André B. Fortunato (Portugal) 1; Anabela Oliveira (Portugal) 1; Ricardo Martins (Portugal) 1; José Jacob (Portugal) 2; João Rogeiro (Portugal) 1; Alexandra Rosa (Portugal) 2; Daniela Santos (Portugal) 1; Paula Freire (Portugal) 1; Alberto Azevedo (Portugal) 1

1 – Laboratório Nacional de Engenharia Civil; 2 – Universidade do Algarve

Screen 2 | Poster session 10 | PO118 Save the town and drown the landscape – adaptive urban water management

Sara Bergek (Sweden) 1; Leonard Sandin (Sweden) 1; Gerda Kinell (Sweden) 2; Måns Enander (Sweden) 3; Samuel Karlström (Sweden) 4

1 – Swedish University of Agricultural Sciences; 2 – County Administrative Board of Västra Götaland; 3 – County Administrative Board of Västmanland; 4 – County Administrative Board of Stockholm

Screen 2 | Poster session 10 | PO119 INNOMED project: Innovative options for water resources management in the Mediterranean – the Portuguese case study

Pedro Beca (Portugal) 1; Santiago Beguería (Spain) 2; Paulo Diogo (Portugal) 1; António Carmona Rodrigues (Portugal) 1; João Fonseca (Portugal) 1

1 – MARE – FCT/UNL – Universidade NOVA de Lisboa; 2 – Consejo Superior de Investigaciones Científicas (CSIC)

Screen 2 | Poster session 10 | **PO120** A hydrometric network for Estrela Geopark Territory

Lucas Cezar (Portugal) 1; Emanuel De Castro (Portugal) 1; Hugo Gomes (Portugal) 1; Fábio Loureiro (Portugal) 1

1 – Associação Geopark Estrela



4. Institutions, governance, citizens and social justice

Screen 3 | Poster session 11 | **PO121** Evaluating climate change adaptation measures for a Mediterranean Watershed with stakeholder engagement

Elias Giannakis (Cyprus) 1; Christos Zoumides (Cyprus) 1; Adriana Bruggeman (Cyprus) 2; Marios Mouskountis (Cyprus) 3; Ayis Iacovides (Cyprus) 4,5

1 – Associate Research Scientist; 2 – Associate Professor; 3 – Geologist, Environmental Hydrogeologist; 4 – Civil / Environmental Engineer; 5 – Environmental Management Expert

Screen 3 | Poster session 11 | **PO122** Population consolidation in the Maldives as a response to 21st century sea-level rise

Geronimo Gussmann (Germany) 1

1 – Global Climate Forum e.V.

Screen 3 | Poster session 11 | **PO123** Essential aspects of comprehensive urban climate policy – Slovak approach

Alena Kozlayova (Slovakia) 1; Michal Schvalb (Slovakia) 1; Andrej Steiner (Slovakia) 1

1 – Carpathian Development Institute

Screen 3 | Poster session 11 | **PO124** Good for me and good for you? Exploring green roofs as climate adaptation with multiple social dilemmas

Matteo Roggero (Germany) 1

1 – Humboldt-Universität zu Berlin

Screen 3 | Poster session 11 | **PO125** Fit for climate change: The Climate Adaption Strategy in the City of Vienna

Sylvia Berndorfer (Austria) 1

1 – Sylvia Berndorfer

Screen 3 | Poster session 11 | **PO126** The climate change adaptation process of the Slovak Republic – discussing challenges in policymaking and practice

Angelika Tamášová (Slovakia) 1

1 – Ministry of Environment of the Slovak Republic

Screen 3 | Poster session 11 | PO127 Transnationalisation of climate adaptation by regional governments and the RegionsAdapt initiative

Joana Setzer (United Kingdom) 1; Elisa Sainz De Murieta (Spain) 2; Ibon Galarraga (Spain) 2

1 – London School of Economics and Political Science; 2 – Basque Centre for Climate Change

Screen 3 | Poster session 11 | PO128 Reviewing railway operation regulations and policies regarding potential climate change

Maike Norpoth (Germany) 1; Carina Herrmann (Germany) 1; Monika Rauthe (Germany) 2; Markus Reinhardt (Germany) 1; Andreas Walter (Germany) 2; Markus Forbriger (Germany) 1; Stephanie Hänsel (Germany) 2

1 – Federal Railway Authority; 2 – Deutscher Wetterdienst

Screen 3 | Poster session 11 | PO129 Incorporating intergovernmental participation into building resilience for integrated river basin management: A social network approach

Hung-Chih Hung (Taiwan) 1; Min-Ling Hong (Taiwan) 1; Chih-Hsuan Hung (Taiwan) 1

1 – Department of Real Estate and Built Environment, National Taipei University

Screen 3 | Poster session 11 | PO130 Transformative climate actions among youth

Susanna Niederer (Switzerland) 1

1 – Royal Roads University, Resilience by Design Lab, Canada

Screen 3 | Poster session 11 | PO131 Regional climate adaptation network for municipal public servants

David Hirdman (Sweden) 1; Joanna Friberg (Sweden) 2

1 – Municipality of Lerum; 2 – Göteborg Region Association of Local Authorities

Screen 3 | Poster session 11 | PO132 Water resources management and climate change adaptation in Iberian transboundary basins

Rodrigo Proença De Oliveira (Portugal) 1; Joana Simões (Portugal) 2; Melissa Nogueira (Brazil) 1

1 – Instituto Superior Técnico – Universidade de Lisboa; 2 – Bluefocus



2. Co-production of knowledge, solutions and services

Screen 4 | Poster session 12 | PO133 Engaging communities to build resilience – how Ireland is looking to have a dialogue with communities on the challenges involved

John O'Neill (Ireland) 1; Seosamh Ó Laoi (Ireland) 1

1 – Department of Communications, Climate Action and Environment

Screen 4 | Poster session 12 | **PO134** Local climate governance and system innovation: Solutions for local mobility in the Portuguese Municipality of Torres Vedras

Fronika De Wit (Portugal) 1; Sandra Pedro (Portugal) 2; Margarida Frade (Portugal) 2

1 – Institute of Social Science – University of Lisbon; 2 – Local Municipality of Torres Vedras

Screen 4 | Poster session 12 | **PO135** National Adaptation Policy and its influence on local practice: Climate Change Adaptation Act, Japan

Yoshimi Fukumura (Japan) 1; Kazutaka Oka (Japan) 1; Yasuaki Hijioka (Japan) 1

1 – National Institute for Environmental Studies

Screen 4 | Poster session 12 | **PO136** Living labs for flood risk prevention: insights from practice in Bremen, Germany

Christof Voßeler (Germany) 1; Barbara Dührkop (Germany) 1

1 – The Senator for Environment, Urban Development and Mobility, City of Bremen

Screen 4 | Poster session 12 | **PO137** Co-development of a knowledge portal to utilize uncertain multi-model based information on freshwater-related hazards of climate change

Carina Zang (Germany) 3; Dirk Schwanenberg (Germany) 1; Fabian Kneier (Germany) 2; Stephan Dietrich (Germany) 3; Harald Koethe (Germany) 3; Petra Doell (Germany) 2

1 – Kisters AG; 2 – Institute of Physical Geography, Hydrology Group, Goethe University Frankfurt; 3 – International Centre for Water Resources and Global Change, Federal Institute of Hydrology, Koblenz

Screen 4 | Poster session 12 | **PO138** ISlpedia – making climate impact science policy-relevant

Inga Menke (Germany) 1; Quentin Lejeune (Germany) 1; Gina Maskell (Germany) 1; Kaylin Lee (Germany) 1; Lila Warszawski2 (Germany) 2; Felix John (Germany) 2; Ted Veldkamp (Netherlands) 3,4; Yusuke Satoh (Austria) 3; Yoshihide Wada (Austria) 3; Katja Frieler (Germany) 2

1 – Climate Analytics; 2 – Potsdam Institute for Climate Impact Research (PIK); 3 – International Institute for Applied Systems Analysis (IIASA); 4 – Institute for Environmental Studies, VU University Amsterdam

Screen 4 | Poster session 12 | **PO139** Barcelona's coproduced climate plan

Irma Ventayol (Spain) 1

1 – Barcelona City Council – member of RESCCUE

Screen 4 | Poster session 12 | **PO140** Twice as adaptive: Participation to integrate adaptation to climate change in fisheries and aquaculture sectors

Mariola Norte (Spain) 1,2; Rosa Chapela (Spain) 1; Marta Ballesteros (Spain) 1; Jose L. Santiago (Spain) 1; Mercedes Fernández (Spain) 1

1 – Fisheries Socioeconomic Department, Centro Tecnológico del Mar-Fundación CETMAR, Vigo, Spain.; 2 – University of Vigo, Vigo, Spain.

Screen 4 | Poster session 12 | P0141 Business models for climate services: an analysis

Francesca Larosa (Italy) 1; Jaroslav Mysiak (Italy) 1

1 – Euro-Mediterranean Center on Climate Change

Screen 4 | Poster session 12 | P0142 Exploring the development of community adaptation opportunities with Taiwan's low-carbon sustainable homeland institution

Zheng-Zong Yeh (Taiwan) 1; Yi-Ping Yang (Taiwan) 1; Pei-Chien Hsu (Taiwan) 2; Chun-Hsuan Kao (Taiwan) 3; Keng-Cheng Yeh (Taiwan) 3; Li-Ju Chang (Taiwan) 4

1 – Sinotech Engineering Services, LTD; 2 – Sinotech Engineering Consultants, LTD; 3 – Environmental Protection Administration, Executive Yuan, R.O.C. (Taiwan); 4 – Environmental Science Technology Consultants Corporation

Screen 4 | Poster session 12 | P0143 Vulnerability and adaptation to climate change: Engaging participatory approaches to inform community decision-making

Julian Sartorius (United Kingdom) 1

1 – University of Dundee

Screen 4 | Poster session 12 | P0144 The Lisbon Commitment for Environment, Climate and Energy

Ana Cristina Lourenço (Portugal) 1; Inês Metelo (Portugal) 1; Paula Alves (Portugal) 1; Filomena Marques (Portugal) 1

1 – Câmara Municipal de Lisboa / Departamento de Ambiente, Energia e Alterações Climáticas



2. Co-production of knowledge, solutions and services

Screen 5 | Poster session 13 | P0145 Water and energy nexus study in public irrigation systems: A new character in climate change mitigation and adaptation story

Madalena Moreira (Portugal) 1; Carina Arranja (Portugal) 2; Nelson Carriço (Portugal) 3; Dália Loureiro (Portugal) 4

1 – Universidade de Évora; 2 – FENAREG; 3 – Instituto Politécnico de Setúbal; 4 – LNEC

Screen 5 | Poster session 13 | P0146 Enhancing urban resilience: The use of risk communication to motivate individual adaptive behaviour in flood risk areas

Marie-Sophie Attems (Austria) 1; Sven Fuchs (Austria) 1; Thomas Thaler (Austria) 1

1 – University of Natural Resources and Life Sciences, Vienna

Screen 5 | Poster session 13 | P0147 Developing a tool for transferring good practices and knowledge to qualify agriculture and forest stakeholders to cope with climate change

Diogo Martins (Portugal) 1; Gonçalo Caleia Rodrigues (Portugal) 1; Teresa Afonso Do Paço (Portugal) 1; Luis Mira Da Silva (Portugal) 1

1 – LEAF, Instituto Superior de Agronomia, Universidade de Lisboa, Portugal

Screen 5 | Poster session 13 | PO148 Wai o Papa-Waterlands: coastal resilience through art-science-cross cultural collaboration

Jane Richardson (New Zealand) 1; Derrylea Hardy (New Zealand) 1; Murray Patterson (New Zealand) 1; Moira Poutama (New Zealand) 3; Huhana Smith (New Zealand) 1; Aroha Spinks (New Zealand) 3; Martin Manning (New Zealand) 2

1 – Massey University; 2 – University of Wellington; 3 – Te Rangitāwhia Whakatupu Mātauranga

Screen 5 | Poster session 13 | PO149 Design Ccomments; a visual, dialogue-based approach to facilitate transdisciplinary collaboration and holistic solutions in climate change adaptation projects

Katrina Marstrand Wiberg (Denmark) 1

1 – Aarhus School of Architecture

Screen 5 | Poster session 13 | PO150 Dynamic data citation as a service

Chris Schubert (Austria) 1; Katharina Sack (Austria) 1; Georg Seyerl (Austria) 1

1 – Climate Change Centre Austria – Data Centre

Screen 5 | Poster session 13 | PO151 Adapting to climate change through supporting an energy transition in agriculture

Anne Dansey (Australia) 1; Sara Bice (Australia) 2

1 – The University of Melbourne; 2 – Australian National University

Screen 5 | Poster session 13 | PO152 Climate information for local and regional climate change adaptation

Hans Olav Hygen (Norway) 1; Hege Hisdal (Norway) 2; Irene Brox Nilsen (Norway) 2; Dagrun Vikhamar Schuler (Norway) 2

1 – the Norwegian Meteorological Institute; 2 – the Norwegian Water Resources and Energy Directorate

Screen 5 | Poster session 13 | PO153 Lessons from the development and implementation of business adaptation strategies

Thais Camolesi Guimaraes (Brazil) 1; Mariana Xavier Nicolletti 2

1 – Maynooth University; 2 – Getulio Vargas Foundation



3. Communication, data sharing and decision support

Screen 6 | Poster session 14 | **PO154** Heat and extreme events – the adaptation gap to reduce health impacts

Virginia Murray (United Kingdom) 1,5; Cristina Linares (Spain) 2; Rohaida Isnail (Malaysia) 3; Henry Neufedt (Denmark) 4; Gerardo Sanchez Martinez (Spain) 4

1 – Public Health England and UNU-International Institute of Global Health; 2 – Department of Epidemiology and Biostatistics. National School of Public Health. Carlos III Institute of Health. Madrid. Spain; 3 – 4. Ministry of Health, Malaysia; 4 – 5. UNEP DTU Partnership, Denmark; 5 – 1. Public Health England, UK and UNU-International Institute of Global Health

Screen 6 | Poster session 14 | **PO155** Keeping it real?: Media and public concern with climate change on the Great Barrier Reef

Erin Bohensky (Australia) 1; Maxine Newlands (Australia) 2; Ally Lankester (Australia) 2

1 – CSIRO Land and Water, Australian Tropical Sciences and Innovation Precinct; 2 – College of Arts, Society and Education, Division of Tropical Environments and Societies, James Cook University

Screen 6 | Poster session 14 | **PO156** HazardSupport – risk-based decision support for adaptation to future natural hazards

Lena Strömbäck (Sweden) 1; Karin André (Sweden) 2; Jorge Amorim (Sweden) 1; Gustav Strandberg (Sweden) 1; David Segersson (Sweden) 1; Christian Dietrich (Sweden) 1; Linn Jämborg (Sweden) 2

1 – Swedish Meteorological and Hydrological Institute; 2 – Swedish Environmental Institute

Screen 6 | Poster session 14 | **PO157** Strategies, measures and indicators for effective adaptation of agriculture and forestry to climate change

André Vizinho (Portugal) 1; David Avelar (Portugal) 1; Tiago Lourenço (Portugal) 1; Alice Nunes (Portugal) 1; Hugo Oliveira (Portugal) 1; Leonor Sucena Paiva (Portugal) 1; Ana Lúcia Fonseca (Portugal) 1; Sílvia Carvalho (Portugal) 1; Cristina Branquinho (Portugal) 1; Filipe Duarte Santos (Portugal) 1; Gil Penha-Lopes (Portugal) 1

1 – CE3C – FCUL

Screen 6 | Poster session 14 | **PO158** EPIC WebGIS – A tool to provide a sustainable landscape planning

Manuela R. Magalhães (Portugal) 1; Selma B. Pena (Portugal) 1; Ana Müller (Portugal) 1; Natália S. Cunha (Portugal) 1; João F Silva (Portugal) 1; Leonor T. Barata (Portugal) 1; Luísa Franco (Portugal) 1

1 – Universidade de Lisboa, Instituto Superior de Agronomia, LEAF – Linking Landscape, Environment, Agriculture and Food Research Centre

Screen 6 | Poster session 14 | **PO159** **Translating geohazard research into a decision support tool: Communicating temporal variation in climate driven subsidence susceptibility for infrastructure planning**

Anna Harrison (United Kingdom) 1; David Entwisle (United Kingdom) 1; Hughes Andrew (United Kingdom) 1; Andrew Hulbert (United Kingdom) 1; Lee Jones (United Kingdom) 1; Majdi Mansour (United Kingdom) 1; Lei Wang (United Kingdom) 1; Jim White (United Kingdom) 1; Chris Williams (United Kingdom) 1; Kathryn Lee (United Kingdom) 1

1 – British Geological Survey

Screen 6 | Poster session 14 | **PO160** **LIFE UrbanProof tool: A decision support tool for climate proofing urban municipalities**

Christina Papadaskalopoulou (Greece) 1; Giannis Lemesios (Greece) 2; Anna Karali (Greece) 2; Konstantinos Varotsos (Greece) 2; Aggeliki Konsta (Greece) 1; Christos Giannakopoulos (Greece) 2; Maria Loizidou (Greece) 1

1 – National Technical University of Athens; 2 – National Observatory of Athens

Screen 6 | Poster session 14 | **PO161** **Digital scenarios and step-by-step guidance as support tools for adaptation of ground construction and disaster risk reduction**

Kerstin Konitzer (Sweden) 1; Hjördis Löfroth (Sweden) 1

1 – Swedish Geotechnical Institute

Screen 6 | Poster session 14 | **PO162** **Developing a national platform in Asia and the role of AP-PLAT, as a Hub to connect experience and expertise**

Kazutaka Oka (Japan) 1; Yoshimi Fukumura (Japan) 1; Yasuaki Hijioka (Japan) 1

1 – National Institute for Environmental Studies

Screen 6 | Poster session 14 | **PO163** **Improving resilience to extreme events**

Minsung Hong (Norway) 1; Rajendra Akerkar (Norway) 1

1 – Western Norway Research Institute

Screen 6 | Poster session 14 | **PO164** **Experiences from development and evaluation of a computer-based serious game for urban climate adaptation**

Lotta Andersson (Sweden) 1; Tina-Simone Neset (Sweden) 2; Ola Uhrqvist (Sweden) 3

1 – Swedish Meteorological and Hydrological Institute; 2 – Linköping University; 3 – Lärandevision

Screen 6 | Poster session 14 | **PO165** **Knowledge resources for national climate action: An analysis of developing country needs and perspectives**

Blane Harvey (Canada) 1; Christina Cook (Canada) 2

1 – McGill University; 2 – Independent Researcher



4. Institutions, governance, citizens & social justice



5. Global climate challenges



6. Climate risk management & resilience

Screen 7 | Poster session 15 | **PO166** Trade-offs in climate adaptation management – agricultural practitioners' perspectives on the Nordic region

Lotten Wiréhn (Sweden) 1,2; Tina-Simone Neset (Sweden) 1,2; Janina Käyhkö (Finland) 3; Sirkku Juhola (Finland) 3

1 – Linköping University, Department of thematic studies – Environmental change; 2 – Centre for Climate Science and Policy Research; 3 – University of Helsinki

Screen 7 | Poster session 15 | **PO167** Irrigation in Portugal and climate change

Alberto Freitas (Portugal) 1; Cláudia Brandão (Portugal) 1; António Campeã Da Mota (Portugal) 1

1 – Direção-Geral de Agricultura e Desenvolvimento Rural

Screen 7 | Poster session 15 | **PO168** Limits to climate change adaptation: new evidence and insights

Johanna Nalau (Australia) 2; Walter Leal Filho (Germany) 1

1 – School of Science and the Environment, Manchester Metropolitan University; 2 – Griffith Climate Change Response Program and Griffith Institute for Tourism, School of Environment and Science, Griffith Sciences, Griffith University

Screen 7 | Poster session 15 | **PO169** Possible migration due to climate change in relation with exceeding temperature (2°C) in coastal zone of Bangladesh

Md Atiqur Rahman (Bangladesh) 1; Tanvir Ahmad (Bangladesh) 2

1 – Green-Tech Testing Company Limited, Dhaka; 2 – Commitment Consultant, Dhaka

Screen 7 | Poster session 15 | **PO170** Intercomparison of hydrological impacts of moderate and high-end climate change projections across European river basins

Anastasia Lobanova (Germany) 1; Stefan Liersch (Germany) 1; Joao Pedro Nunes (Portugal) 2; Iulii Didovets (Germany) 1; Judith Stagl (Germany) 1; Shaochun Huang (Norway) 3; Rocio Rivas-Lopez (Germany) 1; Cathrine Fox Maule (Germany) 4; Fred Hattermann (Germany) 1

1 – Potsdam Institute for Climate Impacts Research; 2 – University of Lisboa; 3 – Norwegian Water Resources and Energy Directorate; 4 – Statens Beredning for Klimaet

Screen 7 | Poster session 15 | **PO171** Big-data-driven exploitation of Trans-Arctic maritime transportation

Zhihua Zhang (China) 1

1 – Shandong University

Screen 7 | Poster session 15 | PO172 Climateurope: the European network for climate services

Natalie Garrett (United Kingdom) 1; Chris Hewitt (United Kingdom) 1; Paula Newton (United Kingdom) 1; Lola Kotova (Germany) 2; Aleksandra Kržič (Serbia) 3; Mauro Buonocore (Italy) 4; Slobodan Nickovic (Serbia) 3; Ralf Toumi (United Kingdom) 5; Janette Bessembinder (Netherlands) 6

1 – Met Office; 2 – GERICS; 3 – Republic Hydrometeorological Service of Serbia; 4 – CMCC; 5 – Imperial College London; 6 – KNMI

Screen 7 | Poster session 15 | PO173 Filling the R & A gap with private sector investments – Green Bonds Case Study

Heidi Tuhkanen (Finland) 1; Aaron Maltais (Sweden) 1

1 – Stockholm Environment Institute

Screen 7 | Poster session 15 | PO174 Deriving ‘Power sensitive design principles’ for long-term climate change adaptation policies in South Asia

Sumit Vij (Netherlands) 1

1 – PhD Candidate

Screen 7 | Poster session 15 | PO175 The contribution of the Municipal Climate Change Adaptation Plan to improve the city of Leiria’s resilience to climate risks

Margarida Morais (Portugal) 1; Luisa Gonçalves (Portugal) 2; João Martins (Portugal) 1; Maria João Vasconcelos (Portugal) 1; Sandra Macedo (Portugal) 1

1 – Câmara Municipal de Leiria; 2 – Câmara Municipal de Leiria/ INESCC/NOVAIMS

Screen 7 | Poster session 15 | PO176 Adaptation action and monitoring in Portugal

Jose Paulino (Portugal) 1; Pedro Baptista (Portugal) 1

1 – Portuguese Environment Agency

**6. Climate risk management and resilience****Screen 8 | Poster session 16 | PO177 Harnessing agrobiodiversity for climate change adaptation in semi-arid areas of Mali**

Alcade C. Segnon (Benin) 1,2,3; Robert B Zougmore (Mali) 2; Enoch G. Achigan-Dako (Benin) 3; Benjamin D. Ofori (Ghana) 1; Chris Gordon (Ghana) 1

1 – Institute for Environment and Sanitation Studies, University of Ghana, Ghana; 2 – CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS), International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Mali; 3 – Faculty of Agronomic Sciences, University of Abomey-Calavi, Benin

Screen 8 | Poster session 16 | PO178 Testing climate resilience of irrigated agriculture with an online drought risk management tool

Lamprini Papadimitriou (United Kingdom) 1; Ian Holman (United Kingdom) 1; Jerry Knox (United Kingdom) 1; Mick Redman (United Kingdom) 1; David Haro (Spain) 2

1 – Cranfield Water Science Institute; 2 – Estación Experimental de Aula Dei – Centro Superior de Investigaciones Científicas (EEAD – CSIC)

Screen 8 | Poster session 16 | PO179 HS2 Phase One and Two: Integrating climate change adaptation and resilience throughout the programme

Alison Walker (United Kingdom) 1; Joanne Parker (United Kingdom) 1

1 – High Speed Two (HS2) Limited

Screen 8 | Poster session 16 | PO180 Measures of heat stress resilience of small and medium-sized communities promoted by the project LIFE LOCAL ADAPT

Bettina Fischer (Austria) 1; Majana Heidenreich (Germany) 2; Valeri Goldberg (Germany) 2; Caterina Joseph (Germany) 3; Barbara Köstner (Germany) 2; Dominic Rumpf (Germany) 3; Adelheid Weiland (Austria) 1; Andrea Gössinger-Wieser (Austria) 1

1 – Provincial Government of Styria, Department for Energy Technology and Climate Protection; 2 – Technical University Dresden, Faculty of Environmental Sciences, Institute of Hydrology and Meteorology, Chair of Meteorology; 3 – Saxon State office for Environment, Agriculture and Geology, subunit of the Saxon State Ministry for Environment and Agriculture

Screen 8 | Poster session 16 | PO181 Heavy rain resilience of small and medium-sized communities promoted by the project LIFE LOCAL ADAPT

Majana Heidenreich (Germany) 1; Bettina Fischer (Austria) 2; Adelheid Weiland (Austria) 2; Dominic Rumpf (Germany) 3; Caterina Joseph (Germany) 3; Barbara Köstner (Germany) 1; Christian Bernhofer (Germany) 1

1 – Chair of Meteorology, Technische Universität Dresden (TU Dresden); 2 – Provincial Government of Styria, Technical Department for Energy Technology and Climate Protection; 3 – Saxon State Office for Environment, Agriculture and Geology (LfULG), Department Climate and Air Quality

Screen 8 | Poster session 16 | PO183 Adaptation measures to climate change for water scarcity in Portugal

Fernanda Gomes (Portugal) 1

1 – Portuguese Environment Agency

Screen 8 | Poster session 16 | PO184 Exploring the engagement of citizens in resilience building through nature-based solutions

Fabiola Espinoza (Peru) 1; Bernadett Kiss (Sweden) 1; Fabiola Espinoza Cordova (Peru) 1

1 – Lund University-International Institute for Industrial Environmental Economics (IIIEE)

Screen 8 | Poster session 16 | PO185 Resilience to extreme precipitation events: Insights into people's risk perception, preparedness and behavior based on two case studies from Germany

Britta Weisser (Germany) 1; Ali Jamshed (Germany) 1; Jörn Birkmann (Germany) 1

1 – University of Stuttgart, Institute of Regional and Development Planning

Screen 8 | Poster session 16 | PO186 Climate adapt cities with green infrastructure in Nordic cities: learning with stakeholders

Jorge H. Amorim (Sweden) 1; Gunn Persson (Sweden) 1; Christina Wikberger (Sweden) 2

1 – Swedish Meteorological and Hydrological Institute (SMHI); 2 – Stockholm City

Screen 8 | Poster session 16 | PO187 A new approach for the city-scale assessment of brownfield land and impact upon climate resilience

Paul Preston (United Kingdom) 1; Gina Cavan (United Kingdom) 1; Rachel Dunk (United Kingdom) 1; Graham Smith (United Kingdom) 1

1 – Manchester Metropolitan University



13:00–17:45
Monday 27 May

Room S9

Keywords: usable climate knowledge for decision making, climate services and climate finance



SIDE EVENT

Climate services: state of affairs, relevance for users and the way forward

JPI: Connecting Climate Knowledge for Europe

Over the last few years Europe has substantially invested in research for the development of climate services with the objective to make complex climate data usable for decision makers. JPI Climate, H2020 and Copernicus are European key players in this area. A whole network of European researchers is currently working on the development of credible, relevant and legitimate climate services.

Climate services are positioned to become a source of key strategic information for many sectors. One sector in particular, the financial sector, is increasingly interested in the use of climate information to support investment decisions. Moreover, lack of finance is recognized as one of the main barriers to the adaptation to climate change. Climate services may have a role in unlocking finance for adaptation purposes.

Within the JPI Climate side-event, we aim to showcase various Europe-made climate services and set-up a discussion on different aspects concerning their development:

- Methods and engagement processes for user-tailored development
- Actionable climate services – next steps for JPI Climate
- Looking for synergies with other initiatives and international (science) networks: valorisation, matchmaking and outreach
- Exploring the intrinsically interlinked roles of climate services both as support to climate smart investment decisions and as mobilizer of financial resources for adaptation and mitigation, in a sustainable future perspective.

This side-event will kick-off networking and exchange activities within the climate services community throughout ECCA2019 e.g. at the JPI Climate/ERA4CS/Climateurope booth. The side-event and booth are co-organised by JPI Climate and the H2020 CSA SINCERE project in collaboration with ERA4CS and Climateurope.

- Opening by **Frank McGovern** | Chair of JPI Climate Governing Board
- Keynote by **Daniela Jacob** | Climate Services Centre Germany | The climate services landscape in Europe and beyond
- Climate Services in JPI Climate: climate information relevant for users
- Outlook by **Diogo de Gusmão-Sørensen** | Head of Climate Services, European Commission

Pitch presentations of climate services projects:

- ClimINVEST by Sophie Dejonckheere | CICERO, Norway
- CLIM2POWER by Sofia Simões or Filipa Amorim | CENSE, Portugal
- CitiSense by Lotta Andersson | SMHI, Sweden
- CoCliME by Séamus Heffernan | Marine Institute, Ireland

Short feedback by representatives from ERA4CS / H2020 projects:

- Athanasios Votsis | FMI, Finland – involved in DustClim
- Marta Terrado | BSC, Spain – involved in APPLICATE & S2S4E
- María Máñez Costa | GERICS, Germany – involved in INNOVA
- Amy Oen | Norwegian Geotechnical Institute – involved in EVOKED
- **World Cafe** followed by sharing highlights of the discussions with Roger Street and Rob Swart
- **Panel Discussion** on the role of climate services in supporting financial decision makers

Mitigating and adapting to climate change requires the mobilization of substantial financial resources. Awareness about this urgent and momentous change in the financial world is rapidly rising both within the policy, business and financial community worldwide. A key factor for this emerging role for climate services is the requirement for robust, relevant and credible knowledge and evidence that can be used to support financial decisions and investments in the context of climate change. Thus, a major window of opportunity is currently opening for climate services tailored for the specific needs of the financial and investment sector.

The panel discussion will touch upon policy- and business-relevant questions and requirements that can inform and foster a fruitful exchange between the scientific community and financial and investment institutions. The intention is that this panel discussion would provide insights and views into: current needs and offerings in terms of climate products and services; the extent to which currently available products and services are meeting these users' needs (i.e. relevance, usability, legitimacy and credibility); projected changes in those needs (foresight); and the extent to which JPI Climate could be a partner in supporting these users and the broader climate service community.

Panelists:

- Aldo Ravazzi Douvan | Italian Ministry of the Environment
- Paolo Proli | AMUNDI SGR
- Sarah Duff | EBRD
- Elina Melngailė | European Commission, Member of Cabinet Commissioner Dombrovskis
- Franz Immler | European Commission – EASME
- Eric Hoa | Climate KIC
- Roger Street | Environmental Change Institute, University of Oxford
- Sophie Dejonckheere | ClimINVEST
- Moderation by Sally Stevens | Institute for Environmental Analytics

Wrap-up and concluding remarks by Frank McGovern | Chair of JPI Climate GB

11:15–12:30
Wednesday 29 May
Room PA



SIDE EVENT

French Environment and Energy Management Agency (ADEME)

Relevance of the monitoring and evaluation process in order to deliver optimal solutions

Awards ceremony of Mediterranean Climate change Adaptation Awards

Mediterranean Region appears quite vulnerable to climate change impacts, as highlighted in last IPCC report. Rise of temperatures, higher than global warming, decrease of rainfalls and sea level rise is already threatening limited resources under pressure, prefiguring dramatic consequences such as recent floods in the Region. Promoting climate action adaptation, in addition to mitigation measures, appears urgent, for strengthening resilience of social, economic and environmental ecosystems and better absorbing consequences of extreme climate events. Cities and territories are day to day mobilized. In rural, urban or coastal areas, different stakeholders, private, public, NGOs and research institute are contributing to implement different actions, for preventing, informing and managing important risks related to climate change. They adapt their technologies, designing better their facilities, planning and testing nature based solutions, using efficiently their resources for increasing their resilience. New tools and/or governance approaches for planning and implementing public policies are also implemented taking into account the different risks cities and territories are facing.

Are the solutions proposed adapted and relevant ? Do they contribute to climate change adaptation ? why and how ? The importance of a monitoring and evaluation process (M&E) to measure progress and resilience of the territories appears as a challenge. This conference aims to illustrate through a wide variety of case studies the relevance of monitoring and evaluation processes in the definition and implementation of adaptive approaches. Through cross-views between researchers and practitioners, 6 case studies will be presented to feed debate and sharing experiences. These have been identified through two editions of the Mediterranean Climate change Adaptation awards initiated by ADEME and its partners in 2016 et 2019.

11:15–11:30 – Opening session

- **Philippe Masset** | Deputy Director of European and International Affairs, French Environment and Energy Management Agency (ADEME)
- **Arnault Graves** | Senior Climate Adviser, Secretariat of Union for the Mediterranean (UfM)

11:30–12:15 – Round table: Relevance of the monitoring and evaluation process in order to deliver optimal solutions, 6 case studies

Ali Suleiman Gwawgzeh | Mayor of Greater Jerash Municipality, Greater Municipality of Jerash (non présent physiquement – si possible en visioconférence) presenting the project on Rain Water Harvesting and Water Treatment (Grey Water) Project – Hashemite Kingdom of Jordan

Mohamad Said Bazzi | Project Civil Engineer, Union of the District of the Municipalities of Bint Jbeil – Increase green cover through reforestation and create new forests through afforestation project – Lebanon

Sanja Slavica Matesic | Director of the County Department for environmental protection and municipal affairs or **Daria Povh Škugor** | Senior Programme Officer, PAP/RAC (Priority Actions Programme/Regional Activity Centre), Šibenik-Knin County – Coastal Plan with specific focus on climate variability and change project – Croatia

Malvena Al Jamal | Director of the Health and Environment Department – Ramallah Municipality – Adapting the city of Ramallah to climate change project – Palestinian territories

Abbès Benaïssa | Office Manager, Dar Si Hmad for Development, Education and Culture (NGO) – Collecting fog water to ensure water supply project – Morocco

Gil Penha-Lopes | Researcher, Foundation of the Faculty of Sciences of the University of Lisbon / Centre for Ecology, Evolution and Environmental Change – Municipal Strategies for Adaptation to Climate Change (ClimAdaPT.Local) – Portugal

Kasia Marini | Science Officer Meeting, Mediterranean Experts on Climate and Environmental Change (MedECC)

Céline Phillips | Climate expert, French Environment and Energy Management Agency (ADEME)

12:15–12:30 – Q&A

- Awards ceremony of Mediterranean Climate change Adaptation Awards
Introduction by Alicia Tsitsikalis, Project manager Regional Mediterranean and African Cooperation, French Environment and Energy Management Agency (ADEME)


12:30 – Cocktails

Partners: The Union for the Mediterranean (UPM) | Plan Bleu | Agency for sustainable Mediterranean cities and territories (AViTeM)

Associates: Association of the Mediterranean Chambers of Commerce and Industry (ASCAME) | Euro-Mediterranean Information System on know-how in the Water sector (EMWIS) | Regional Center for Renewable Energy and Energy Efficiency (RECREE) | Mediterranean Association of National Agencies for Energy Management (MEDENER)



GREEN
EVER

Climate  NOW
Homework later! 

Zukunft
GRÜN
DER
ARBEIT

Das KLIMA
aussichtsloser,
als unser
MATHE-ABI



Young people @ECCA

Call for climate action – video project

Worldwide, there are few young people participating in public decisions around climate change. These same youngsters are disproportionately affected by disasters and climate change hazards: they have limited voices in the decisions and policies related to disaster risk reduction, climate change adaptation, and community resilience despite calls for their empowerment as important stakeholders in these issues. In addition, young people will grow to fill leadership roles in decision-making organisations, while inheriting the consequences of climate change, policies and actions that are co-constructed today. Actively engaging and empowering children and young people to address the complex problems of climate change is a critical step to achieving resilience at local, regional, and national levels.

To reflect this, ECCA 2019 aims to meaningfully and creatively engage young people and give them a voice to express themselves about climate change and possible responses.

A short video was co-produced with and about young people and their views on climate change. Students of Antonio Arroio Art High School and St. Julian's School, Lisbon were interviewed about their perceptions of climate change responses. The process was guided by the director Johanna Bentz and climate change researcher Julia Bentz. The film project aims to raise awareness and climate change engagement, and will be distributed through social media. It is the first collaboration of the two sisters.

About the organisers

Johanna Bentz is an award-winning film director, whose films are screened at international festivals and on TV. Since graduation as director for documentary films (2012, Filmakademie Baden-Württemberg, Germany) she works as a freelance author and director for radio and film in Berlin. Recent works include *Bella Palanka*, documentary TV; *GIANT*, short children's animation, cinema; and *The seduction artists*, documentary, TV.

Julia Bentz has a background in interdisciplinary social sciences (MPhil. Development Studies, University of Vienna; PhD Economics, University Azores, Portugal, 2015), and extensive experience in researching the interactions between social and ecological systems in a variety of research fields. Within her current project, *Art for Adaptation*, her focus is on the question of how art and creative practices can contribute to broader, deeper and more inclusive perspectives on adaptation to climate change.



Photo by Markus Spiske on Unsplash

Art programme

Art and music can be an effective means of engaging an audience with climate change messages, audiences who may otherwise be unaware of the broad range of climate impacts. At ECCA 2019 we have developed a programme of thought-provoking art, music and video to explore how the arts can communicate with and inform people about the challenges society faces.

The conference will open with a live music and video performance by **Tone Bjordam** and **Marten Scheffer**. They will perform a new work specially composed for the conference, built upon a recent article co-authored by Scheffer entitled Trajectories of the Earth System in the Anthropocene. This art and science collaboration aims to provide the audience with a multi-sensory experience showcasing a transdisciplinary approach to the climate challenge.



Image: Photosynthesis by Tone Bjordam, 2017

An exhibition of Tone Bjordam's paintings, inspired by different biotopes, will be hosted at the conference. The drive behind the Norwegian artist's practice is to create a space for reflection around processes in nature, and to achieve an in-depth understanding and a sense of feeling connected with nature around us. Bjordam has a Master's Degree in Fine Arts from Oslo National Academy of the Arts and her work has been on display in numerous countries around the world. Bjordam is particularly interested in finding ways to communicate science through art, especially the wonder that drives science.

Marten Scheffer is interested in unravelling the mechanisms that determine the stability and resilience of complex systems. Although much of his work has focused on ecosystems, he also worked with a range of scientists from other disciplines to address issues of stability and shifts in natural and social systems. With the help of a Spinoza award and an ERC advanced grant he founded SparcS and now works on finding generic early warning signals for critical transitions. He also co-founded the South American Institute for Resilience and Sustainability Studies (SARAS) and is currently a distinguished professor in ecology and mathematical biology at Wageningen University.

ECCA will also host an exhibition of work from young artists. Entitled Art for Change, it is the result of a collaboration between Artistic Secondary School Antonio Arroio, Lisbon and the Art for Adaptation project. More than 80 students of grades 11 and 12 engaged with climate change through transformative learning approaches, by approaching change as an experiment, and through climate fiction. Their artworks reflect their newly gained insights and critical thinking about the subject. The exhibition integrates posters produced with silk print and stencil techniques, and objects which aim to question, highlight and reflect different aspects of climate change. Art for Change aims to empower young people to explore new climate narratives and solutions, help to visualise the connection between global climate change and our daily actions, and reflect on the implications of individual and collective change towards more sustainable forms of living.

Parallel to the scientific program, conference participants are invited to the Art Room, where short films and videos on climate change will be shown.

Finally, the conference will close with a musical performance by the children's choir of Santo Amaro de Oeiras, Lisbon. This choir participated in 2012 in the Global Rockstar competition, promoted by the United Nations, winning the first place with the song "My blue planet" and representing Portugal at the Rio+20 Summit in Rio de Janeiro. The choir has taken part in recordings and performances with several international artists, including Mara Abrantes, Suzy Paula, Michael Jackson, Secret Lie, and Lemm Project.

The art programme was curated and organised by researcher Julia Bentz.



Image: Plasma by Tone Bjordam, 2007

Plenary session moderator



Bénédicte Paviot

Bénédicte Paviot is an Anglo-French TV and Radio journalist based in London. She is the UK Correspondent for the French international news channel, France 24 and reports for both their English and French 24-hour News Channels on major events in the UK: political, economic, social and cultural. She has worked as a news and current affairs presenter / reporter across the BBC and for Radio France Internationale, Sky News and LBC.

Bénédicte is an experienced international conference moderator, chairing EU- and government-sponsored conferences, debates and workshops – in the UK, France, Germany, Belgium, Italy, Portugal, Spain and the UAE, as well as for Chatham House and the U.S. State Department.



Photo by Suad Kamardeen on Unsplash

Social events

Reception at Lisbon City Hall

19:00–21:00 Monday 27 May

Lisbon City Hall: Praça do Município, 1100-038 Lisbon



To start off the week, a reception will be held on Monday at Lisbon City Hall, including a cocktail and a musical performance. Capacity is limited, so make sure you save your spot when registering for the conference!



Poster & drinks reception

18:00–20:00 Tuesday 28 May

CCB

A 2-hour poster reception at CCB, where delegates can attend the e-poster presentations of their preferred conference themes, all while enjoying a cocktail with the other participants. The e-posters will be available at CCB throughout the conference.



Photo by Annie Spratt on Unsplash

Conference dinner

19:30–23:30 Wednesday 29 May

Fábrica XL in LX Factory: R. Rodrigues de Faria 103, 1300-501 Lisbon



We invite our delegates to join us at the conference dinner at Fábrica XL in LX Factory, a vibrant cultural centre of cafés, restaurants, shops and office spaces in a former industrial site. A Portuguese folk concert and dancing with the band and dancers **Fulano, Beltrano e Sicrano** will follow to help you get to know your fellow delegates!



Photo by Brooke Lark on Unsplash

Excursions



**Monsanto Forest Park and
Urban Green Corridors**
(Lisbon municipality)

01: Lisbon's urban ecosystem services and green infrastructure

Urban Biodiversity is an indicator of urban environment quality. Lisbon is developing its Local Action Plan for Biodiversity 2020 in order to improve its performance, establishing monitoring routines, checking evolution, promoting environmental education and evaluating the urban metabolism. To achieve these targets, the city is investing in its green infrastructure – in the last decade, over 200 hectares of green corridors have been implemented, based on a diversity of green typologies where nature-based solutions (NBS) and climate adaptation are key.

In the morning, delegates will visit Monsanto, a Peri-urban park, known as Lisbon's Green Lungs and a native Biodiversity repository in the city. Some successfully implemented NBS will be discussed – monitoring ecosystems can demonstrate the existing climate change impacts and show paths to preventive action through adaptation. The tour will also visit some recently implemented urban green corridors, urban farms and biodiverse meadows.



**Campolide, Olivais and
Ameixoeira (Lisbon
municipality)**

02: Lisbon's blue-green infrastructure and adapted drainage plan

Floods, due to heavy rains, have occurred in Lisbon for some time and are expected to keep increasing in severity due to climate change. The Lisbon drainage master plan (PGDL) 2016/2030 is the municipality's answer to deal with these floods.

In this excursion, delegates will visit a vertical inspection point at Quinta José Pinto, to see the place where the two parts of Caneiro de Alcântara join each other in a single collector (about 8.5 meters wide). This is where the retention basin and connection to the largest drainage tunnel in the city will be built (5.5 meters diameter and 4.6 km long). Delegates will also visit a drainage reinforcement construction in Avenida de Berlim and a retention basin in Ameixoeira.



**Alcântara Water Factory and
Beirolas (Lisbon municipality)**

03: Lisbon's urban water cycle under climate change

Today's wastewater treatment plants are better defined as “water factories”, since they produce quality water for non-potable uses – one of the solutions to tackle increasing water scarcity in cities. This excursion will tour two wastewater treatment plants in Lisbon: Alcântara Water Factory (also the largest green roof in Europe) and Beirolas. The visits will be led by the CEO of Águas do Tejo Atlântico, AdTA which manages wastewater treatment in the Greater Lisbon area, and by the Project Manager for Water Reuse in Lisbon Municipality. Delegates will discuss how innovation is key in wastewater management, getting to know several AdTA-led projects. The visit will also highlight projects which use recycled water in public space in Lisbon, and the plans to expand reuse to the entire city.

04: Sea level rise and coastal erosion

Given its location and characteristics, the Lisbon metropolitan area is particularly vulnerable to climate change, namely the effects of sea level rise and tidal surge, which are both expected to increase in severity.

In this excursion, delegates will have the opportunity to walk along the Lisbon water front near the conference venue, measuring the height of certain locations and analysing their vulnerability to flooding based on hazard maps of projections of future sea level rise.

In the second part of this excursion, participants will cross the River Tagus by boat and cycle along the river's south bank to the coastal zone and dune ecosystems in Costa da Caparica, which have been successful reconstructed in a programme of restoration and adaptation by the Almada Municipality.



Belém water front (Lisbon municipality), Tagus River, Costa da Caparica (Almada municipality)

05: Companhia das Lezírias

With 182 years of history and spanning an area of 18,000 hectares, Companhia das Lezírias is the largest agriculture, cattle and forest farmstead in Portugal, just 30 km from Lisbon.

This area combines an excellent space with rich biodiversity across multiple agricultural and rural activities. In this excursion, delegates will be invited to visit different components of Companhia das Lezírias, from the cork oak and pine forests, the cattle area and the marsh to the interpretation centre. The visit will learn more about the efforts the company is making to tackle the impacts of climate change.



Companhia das Lezírias (Benavente municipality)

06: Climate change adaptation in Cascais

Cascais was one of the first Portuguese municipalities to create a climate change adaptation strategy (2009) and has since stepped up efforts to develop resilience policies and projects that value both the territory and the involvement of civil society while adapting to climate change.

In this excursion, participants will get to know the main methodological steps and actions that the municipality has developed. It includes a visit to a range of places in Cascais, such as the Interpretation Centre Pedra do Sal (a carbon-neutral building), an ecological corridor, the restored dune system of Crismina, the restored agriculture / environment of Quinta do Pisão, and resilient green areas that promote indigenous species and reduce water consumption.



Cascais municipality



Ajuda (Lisbon municipality)

07: Ajuda Botanical Garden

Climate change has been identified as the main threat for many plant species. In Europe, over half of the vascular plant species are expected to be under threat from climate change by the end of this century. Each species responds differently to the new climatic reality: some adapt, others migrate, and others become extinct.

Botanical gardens have a mission to work, both locally and globally, to preserve and sustainably use the vast richness of the plant world. These aspects will be discussed during a visit to the Ajuda Botanical Garden, where visitors will discover how certain species are likely to adapt to changes in the climate. Participants will also have the opportunity to see how some of the garden's trees have react to climatic change in the last few years.



Castelo de Bode Dam and
Asseiceira Water Treatment
Plant (Santarém district)

08: Water supply system to Greater Lisbon

EPAL (Portuguese Water Company) treats and supplies drinking water to around 3 million people in 35 districts, covering 7,090 km². Asseiceira Water Treatment Plant (WTP) is responsible for 75% of the drinking water produced by EPAL and treats water extracted from Castelo de Bode dam. The plant is equipped to treat the sludge and to recycle all the liquid effluent from the process, with a sludge treatment plant comprising two thickeners and three centrifuges. It is also features four treated water storage tanks holding 20,000 m³ each.

This excursion will begin in Castelo de Bode Dam (Water supply system to Greater Lisbon) and followed by a full visit to the Asseiceira WTP. Delegates will explore the treatment facilities and discuss how innovation is key in water management, getting to know several projects lead by EPAL, including the “100% energia” project that will make Asseiceira WTP the world's first 100% self-sustainable drinking water treatment facility.

Organisers

Three EU-funded Horizon 2020 projects share the organisation and communications for ECCA 2019:

PLACARD

PLACARD interchange – PLATform for Climate Adaptation and Risk reDuction – is a hub for dialogue, knowledge exchange and collaboration between the climate change adaptation (CCA) and disaster risk reduction (DRR) communities. PLACARD provides a common space where the communities can share experiences and create opportunities for collaboration and supports the coordination and coherence of CCA and DRR research, policy and practice.



BINGO

BINGO – Bringing INnovation to onGOing water management – a better future under climate change – aims to provide practical knowledge and tools to end users, water managers, decision and policy makers affected by climate change to enable them to better cope with all climate projections, including droughts and floods. The project involves 20 European Partners from six countries, including research and innovation centres, water authorities, water users and companies.



RESCCUE

RESCCUE – RESilience to cope with Climate Change in Urban arEas – is Europe's first large-scale innovation and urban resilience project to improve the capability of cities to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage.



Co-organisers

Lisbon Municipality

Lisbon Municipality has strong ties to the history of Portugal, and is an outstanding example of heritage architecture. Over the decades it has been sensitively renovated and repaired to reflect the differing personalities of the architects involved with the building.



Ministry of Environment and Energy Transition

The Portuguese Government's area of Environment and Energy Transition has the mission of formulating, conducting, executing and evaluating policies for the environment, planning, cities, housing, transportation, climate, nature conservation and energy, with a view towards sustainable development and social and territorial cohesion.



Committees

Organising Committee

PLACARD

- **Mário Pulquério** (Conference Chair) | University of Lisbon
- **Tiago Capela Lourenço** | University of Lisbon
- **Julia Bentz** | University of Lisbon
- **Stephanie Ferguson** | UKCIP, University of Oxford
- **Ana Lúcia Fonseca** | University of Lisbon
- **Ana de Jesus** | University of Lisbon
- **Markus Leitner** | Environment Agency Austria
- **Susana Marreiros** | University of Lisbon

BINGO

- **Rafaela Matos** | Laboratório Nacional de Engenharia Civil (LNEC)
- **Ana Estela Barbosa** | Laboratório Nacional de Engenharia Civil (LNEC)
- **Rita Andrade** | Sociedade Portuguesa de Inovação (SPI)

RESCCUE

- **Marc Velasco** | Aquatec
- **David Pacheco** | Cetaqua, Water Technology Center
- **Angel Villanueva** | Aquatec

European Commission

- **Diogo de Gusmão-Sørensen** | DG RTD, European Commission

Lisbon Municipality

- **Duarte Mata** | Lisbon Municipality

Ministry of Environment and Energy Transition

- **Diana Carlos**

Executive Committee

The Executive Committee of ECCA deliberates on strategic and budgetary issues, nominates the Chair of the Organising Committee and its composition. In partnership with the European Commission, three projects share the organisation and communications for ECCA 2019 – these projects have received funding from the European Union's Horizon 2020 Research and Innovation Framework Programme.

- **Mário Pulquério** is the PLACARD member of the Executive Committee
- **Rafaela Matos** is the BINGO member of the Executive Committee
- **Marc Velasco** is the RESCCUE member of the Executive Committee
- **Diogo de Gusmão-Sørensen** from the Directorate-General for Research and Innovation (DG RTD) represents the European Commission and chairs the Executive Committee

Science–Practice Advisory Committee

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- **Manuel Carmona Yebra** | European Commission
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- **Joanne Stedman** | St. Julian's School

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We would like to express our sincere gratitude to the 89 reviewers who evaluated the abstract submissions for ECCA 2019:

- **Ad Jeuken** | Deltares, Netherlands
- **Adriana Bruggeman** | Cyprus Institute, Cyprus
- **Ana Margarida Luís** | EPAL, Portugal
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- **Carlo Buontempo** | European Centre for Medium-Range Weather Forecasts – ECMWF, United Kingdom
- **Carlo Giupponi** | Università Ca Foscari di Venezia, Italy
- **Chantal Pacteau** | Climate-Environment-Society consortium, France
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- **Sveinung Sagrov** | Norwegian University of Science and Technology, Norway
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- **Tim aus der Beek** | IWW Water Centre, Germany
- **Timothy R. Carter** | Finnish Environment Institute, Finland
- **Tom De Groeve** | Deputy Head of Unit at European Commission Joint Research Centre, Italy
- **Tomás Menezes** | CCIAM-cE3c, Faculty of Sciences, University of Lisbon, Portugal

Convenors

We would like to express our sincere gratitude to the 21 convenors who have prepared and organised the science sessions of ECCA 2019:



1. Data, methods and approaches in Climate Change Adaptation and Disaster Risk Reduction

- Carlo Giupponi | Università Ca Foscari di Venezia, Italy
- Marc Velasco | Aquatec – SUEZ Advanced Solutions, Spain
- Paul Watkiss | Stockholm Environment Institute, Sweden
- Richard J.T. Klein | Stockholm Environment Institute, Sweden
- Svetlana Jevrejeva | National Oceanography Centre, United Kingdom
- Tiago Capela Lourenço | CCIAM-cE3c, Faculty of Sciences, University of Lisbon, Portugal
- Timothy R. Carter | Finnish Environment Institute, Finland



2. Co-production of knowledge, solutions and services

- Ad Jeuken | Deltares, Netherlands
- Asuncion Lera St. Clair | Barcelona Super Computer Center (BSC), Spain
- María Mániz Costa | Helmholtz Center Geesthacht, Germany
- Rob Swart | Wageningen University, Netherlands
- Sirkku Juhola | University of Helsinki, Finland
- Suraje Dessai | University of Leeds, United Kingdom



3. Communication, data sharing and decision support

- Julia Barrott | Stockholm Environment Institute, Sweden
- Tiago Capela Lourenço | CCIAM-cE3c, Faculty of Sciences, University of Lisbon, Portugal



4. Institutions, governance, citizens and social justice

- Julia Peleikis | ICLEI – Local Governments for Sustainability, Germany
- Markus Leitner | Umweltbundesamt, Austria
- Robert Biesbroek | Wageningen University, Netherlands



5. Global climate challenges

- Diogo de Gusmão-Sørensen | DG RTD, European Commission, Belgium



6. Climate risk management and resilience

- Beniamino Russo | Aquatec – SUEZ Advanced Solutions // EUPLA, Spain
- Karolina Kalinowska | DG ECHO, European Commission, Belgium
- Reimund Schwarze | Helmholtz Centre For Environmental Research – UFZ, Germany

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 www.ademe.fr

EDP – Energias de Portugal

EDP is a vertically integrated utility company, with presence in 16 countries, in 4 continents. With more than 11,600 employees, EDP has operational activities in power generation, distribution and supply of electricity (Portugal, Spain and Brazil) and gas supply (Portugal and Spain). More recently, EDP entered the transmission business in Brazil. Through its subsidiary EDP Renewables, EDP is also one of the largest wind power operators worldwide, with on-shore wind farms in Europe, North and South America and developing off-shore wind projects in the UK, France and the USA. Additionally, EDP generates power from photovoltaic plants in Portugal, Romania and the USA. Almost 70% of our energy is produced from renewable resources. Throughout its 40 years of history, EDP has been building a relevant presence in the world energy scene. EDP supplies electricity to 9.8 million customers and gas to 1.6 million customers. In 2018, the company generated about 72 TWh of electricity worldwide, of which 66% from renewable energy sources and, by year end, had an installed capacity of 27.2 GW (74% renewable).



 www.edp.com

EPAL

EPAL is the company responsible for the delivery of water to households in the capital where it has around 350,000 clients. In terms of its “upstream” operations, EPAL supplies water to 35 municipalities on the north bank of the river Tagus and, since 2015, delegated management responsibility for the multi-municipal water supply and sanitation systems of Lisbon and the Tagus Valley, set up on 29th May by decree-law no. 94/2015, which integrates 86 municipalities and a population of around 3.8 million inhabitants in a territorial area making up 33% of mainland Portugal.



 www.epal.pt

Silver sponsors



Adaptation Scotland

Adaptation Scotland supports organisations, business and communities to adapt to the impacts of climate change. Adaptation Scotland is a programme funded by the Scottish Government and delivered by sustainability charity Sniffer.



www.adaptationscotland.org.uk



AVE – Environmental Management and Energy Recovery

AVE – Environmental Management and Energy Recovery, S.A. has the purpose of waste management for material or energy recovery by the cement industry using co-processing method. Its a process that ensures a definitive, adequate, safe, environmentally sustainable and economically competitive destination for various types of waste. Consists of using wastes as alternative fuels in cement kilns and / or as secondary raw materials in the cement production.

Along the past 13 years Co-processing was responsible for the treatment of 7.5 million tonnes of alternative fuels and raw materials and prevented the emission of 2.8 million tonnes of CO2 and the use of 1.7 million tonnes of petcoke.



www.ave.pt



Climate-fit.city

Climate-fit.city translates the best scientific climate data into relevant information for public and private actors operating in cities across a range of different sectors. That means the use of information to optimize a city emergency planning, to better protect Europe's cultural heritage, or to provide urban planners accurate information where to build parks, green areas, bike lines or how to design buildings that are future proof.



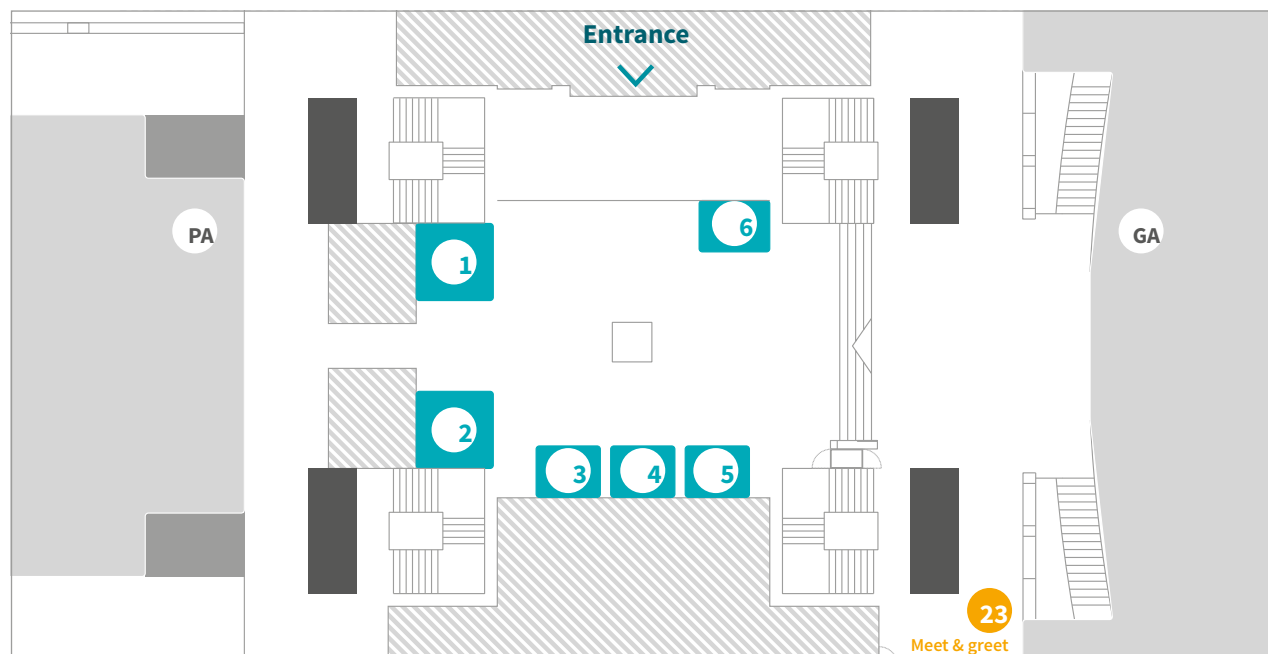
climate-fit.city



World Adaptation Science Programme (WASP)

The World Adaptation Science Programme (WASP) has five core partners, which include the World Meteorological Organization (WMO), the United Nations Framework Convention on Climate Change (UNFCCC), the Intergovernmental Panel on Climate Change (IPCC), the Green Climate Fund (GCF). It is hosted by the UN Environment Programme (UNEP). The WASP has an international panel with a multi-stakeholder governance structure consisting of a Management Group, a Science Committee, and a Policy and Finance Committee. The overall aim of the World Adaptation Science Programme is to promote science for climate change adaptation policy and action.

First floor exhibitors



1 Ministério do Ambiente e Transição Energética



2 Câmara Municipal de Lisboa



3 Portuguese Water Partnership



4 IOP Publishing



5 Routledge – Taylor & Francis Group



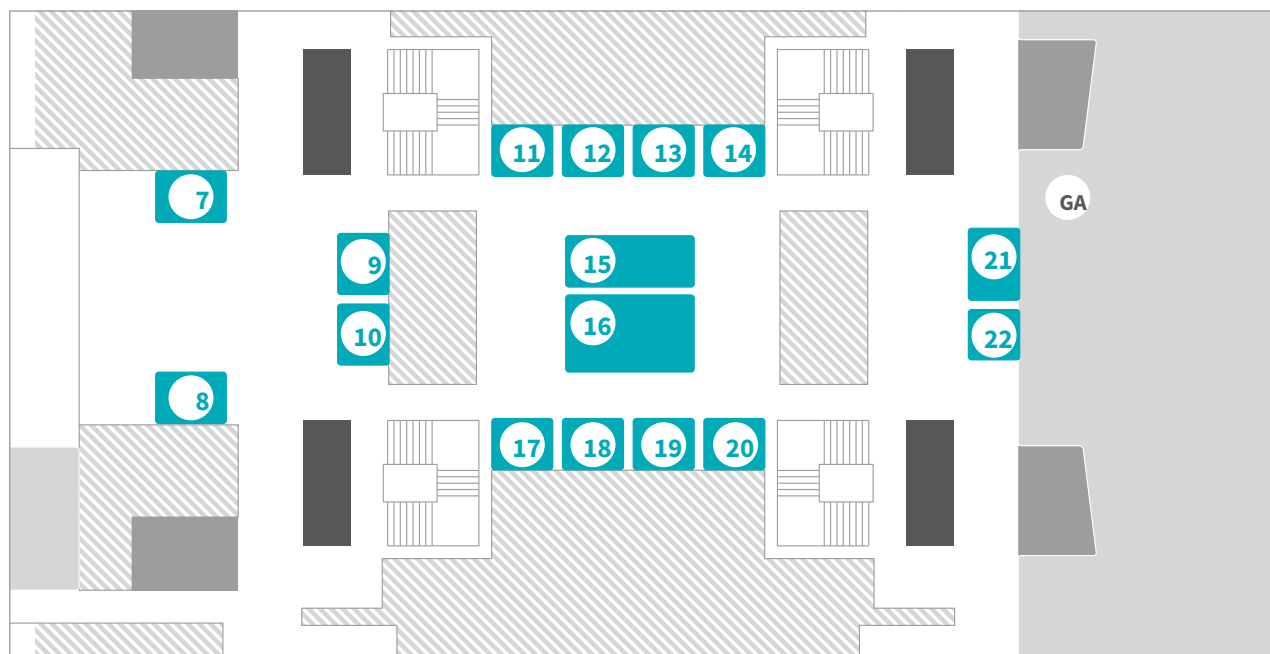
6 Área Metropolitana de Lisboa (AML)



23 Elsevier – Climate Risk Management



Second floor exhibitors



7 Climate-fit.city



8 French Environment and Energy Management Agency (ADEME)



9 World Adaptation Science Programme (WASP)



10 Adaptation Scotland



11 Agência Nacional para a Inovação (ANI)



12 TEC Conseil & CAS



14 XDI Cross Dependency Initiative



16 Copernicus



19 BINGO



21 European Commission – EASME



13 myclimateservices.eu



15 Empresa Portuguesa das Águas Livres (EPAL)



17 European Commission Joint Research Centre (JRC)



18 PLACARD



20 RESCCUE



22 JPI Climate & Climateurope





About ECCA

The biennial European Climate Change Adaptation conference is convened by projects that have received funding from the European Union's Horizon 2020 Research and Innovation Framework Programme. ECCA 2019 – Working together to prepare for change – is the fourth such conference, hosted in Lisbon from 28–31 May, 2019.

In 2010, the first global conference on adaptation was held in Gold Coast, Australia under the umbrella of the UN Environment Programme of Research on Climate Change Vulnerability, Impacts and Adaptation (PROVIA). This marked the beginning of the biennial Adaptation Futures conferences, and inspired a group of European participants to organise Europe-focused events in the alternate years. The European Commission agreed to support the conference series, assigning management of the events to project coordinators of three EU-funded adaptation research projects.

Hamburg

18–20 March 2013

Projects: RESPONSES, CLIMSAVE,
MEDIATION and ClimateCost

Copenhagen

12–14 May 2015

Projects: BASE, RAMSES and
ToPDAd

Glasgow

05–09 June 2017

Projects: IMPRESSIONS, HELIX
and RISES-AM

ECCA 2013 | Integrating climate into action

The first ECCA covered a broad range of adaptation issues. The conference focused on understanding and assessing adaptation in action with topics covering risk and vulnerability assessments, governance, and impact and effectiveness studies, as well as the economics of adaptation.

ECCA 2015 | Integrating climate adaptation action in science, policy, practice and business

More than 750 participants from 46 countries took part in ECCA 2015 in Copenhagen. The conference offered a platform for researchers, policymakers, and businesses to share new research results, novel policy developments, and practical implementation experiences on climate change impacts and adaptation. Opportunities for business innovations to support the transition to low carbon societies were also highlighted. Sessions were designed to combine knowledge, policy, practice and business as well as showcase how climate change adaptation in Europe can contribute to job creation and other societal benefits.

ECCA 2017 | Our climate ready future

The vision for ECCA 2017 was to 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. The City of Glasgow welcomed over 850 people to the third ECCA, which featured for the first time a business and innovation programme. Contributions from young speakers stressed the need for deeper involvement of young people in climate action and policymaking at all levels. A challenge embedded into the city's school curriculums led to an exhibition by local school children of their imaginative solutions to Glasgow's flooding problems.

DRINK TAP WATER. RELIABLE, EXCELLENT QUALITY!

EPAL water is strictly monitored and treated, subject to over a thousand tests a day and complies with Portuguese and European legal requirements.

Water consumed in Lisbon is collected, treated and distributed by EPAL - Empresa Portuguesa das Águas Livres, which is responsible for the supply of water for human consumption to a 1/3 of the national population.

The quality of EPAL water is guaranteed by the quality of its sources, by the treatment processes to which it is submitted and by the control undertaken along the transport and distribution networks right up to the customer's tap.

FILL FOREVER, CARRY TAP WATER WITH YOU.

Innovative Concept

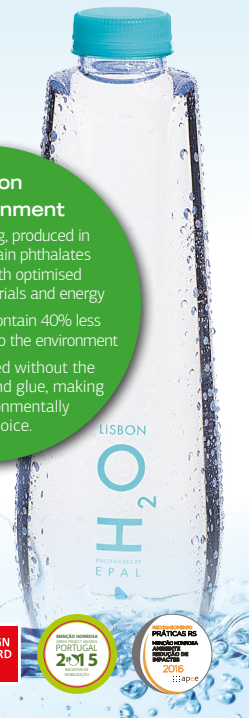
This bottle is of an exclusive EPAL design, made in Portugal, 100% reusable and recyclable.

Profile inspired by a waterfall, narrower at the top and broad at the base, giving it greater stability.

Elegant, understated and sophisticated, it is designed for you to carry EPAL water wherever you go!

Light on the environment

- Weighs only 27.5 g, produced in PET (does not contain phthalates or bisphenol-A) with optimised consumption of materials and energy
- The neck and cap contain 40% less material, so are kinder to the environment
- H₂O symbol printed without the addition of labels and glue, making it a more environmentally friendly choice.



2nd edition
2018-2019



MEDITERRANEAN

CLIMATE
CHANGE
ADAPTATION

AWARDS

Awards initiated by the French Environment & Energy Management Agency (ADEME)



Partners



Union pour la Méditerranée
Union for the Mediterranean
الإتحاد من أجل المتوسط



Awards partners



SIDE EVENT

Wednesday 29 May
Start: 11:15 am - End: 12:30 pm
Small Auditorium

Relevance of the monitoring and evaluation process in order to deliver optimal solutions: 6 case studies

- « Rain Water Harvesting and Water Treatment (Grey Water) » Project - Hashemite Kingdom of Jordan
- « Increase green cover through reforestation and create new forests through afforestation » Project - Lebanon
- « Coastal Plan with specific focus on climate variability and change » Project - Croatia
- « Adapting the city of Ramallah to climate change » Project - Palestinian territories
- « Collecting fog water to ensure water supply » Project - Morocco
- « Municipal Strategies for Adaptation to Climate Change (ClimAdaPT.Local) » - Portugal

Awards ceremony of the 2nd edition of Mediterranean Climate change Adaptation Awards



Supporters

Turismo de Portugal

Turismo de Portugal is the National Tourism Authority for Portugal, based in the Ministry of Economy, and is responsible for the promoting the country as an exciting tourist destination.

As tourism plays such a vital role in Portugal's economy, the Authority brings together the skills needed to support the sector, as well as providing a network of national and international contacts with public entities and businesses.

 www.turismodeportugal.pt



Turismo de Lisboa

The Lisbon Tourism Association Visitors and Convention Bureau was established in 1997 to promote the city as a destination for tourists, conferences and trade fairs. The Association assists with the organisation of events such as ECCA 2019, in addition to promoting the city both nationally and internationally.

Information on the many attractions in and around the city is available from the website, along with details of travel, accommodation, offers and the essential facts you'll need for your visit.

 www.visitlisboa.com



TAP Air Portugal

Official carrier for ECCA 2019

TAP is Portugal's leading airline, crossing the skies since 1945 and currently carrying millions of passengers to more than 80 destinations. Their hub in Lisbon is in a privileged platform between Europe, America and Africa.

 www.flytap.com



eCooltra

eCooltra is the #1 European scooter sharing service where you pay per minute with your app. With eCooltra you can enjoy all the advantages of having your own scooter without worrying about maintenance or insurance.

ECCA participants are offering 40 minutes free for a first time hire from eCooltra.

 www.ecooltra.com





Contact

ECCA 2019 Conference Official Secretariat

 leading@leading.pt

 www.leading.pt

Rua Diogo do Couto, 1B, 2799-537 Linda-a-Velha, Portugal

Information

Registration desk opening hours:

27 May | 12:00–17:30

28 May | 08:00–20:00

29 May | 08:00–18:00

30 May | 08:00–15:45

Data Centre opening hours:


28 & 29 May | 08:00–19:00

30 May | 08:00–14:00

 @ECCA2019

 www.ecca2019.eu

 appdoevento.pt/ecca2019 | Conference app

 ECCA LinkedIn group | www.linkedin.com/groups/8781759/

 Network: ECCA2019 | Password: Time2Adapt!

Media partner

 The International Water Association | www.iwa-network.org

 Press officer | Rui.Veras@iwahq.org

Accessibility

If you have reduced mobility, please use the garage on the side of the river, accessed by Av. da Índia | Helpline: (+351) 213 612 666

Transport

Buses & trams | Carris | www.carris.pt/en/buslines/

Trains | Comboios Portugal | www.cp.pt

Electric scooters | eCooltra | www.ecooltra.com



ECCA 2019 conference book design:
Stephanie Ferguson | UKCIP,
University of Oxford





ECCA 2019

Working together to prepare for change

The biennial European Climate Change Adaptation conference is convened by projects that have received funding from the European Union's Horizon 2020 Research and Innovation Framework Programme.



PLACARD



BINGO

RESCCUE



Co-organised by:



LISBOA
CÂMARA MUNICIPAL



REPÚBLICA
PORTUGUESA

ENVIRONMENT AND
ENERGY TRANSITION

Offsetting

ECCA 2019 has partnered with Mossy Earth to ensure that the conference is carbon neutral. Two trees are being planted for each ECCA 2019 participant. The trees are planted at Mossy Earth's Native Oak Woodland Restoration project in the centre of Portugal, to develop sustainable land management practices and regenerate native oak woodlands.



@ECCA2019 #ECCA2019



www.ecca2019.eu



ECCA 2019 app | appdoevento.pt/ecca2019



www.linkedin.com/groups/8781759/

28-31 MAY 2019 | CENTRO CULTURAL DE BELÉM, LISBON