European Climate Research Alliance

ECRA: **Knowledge for climate action**

Newsletter Autumn 2019

Dear Readers,

Welcome to our second ECRA newsletter in 2019.

ECRA - The European Climate Research Alliance - is a network of research performing organizations, filled with life by climate scientists. We have been active since 2011, and we bring together expertise from many areas in climate research. As Chairs of ECRA, we would like to thank you for reading this newsletter and invite you to participate in our network.

In this issue we are highlighting the recent activities and publications of the ECRA partners and participants, but also other contributions – for more information please see the table of contents.

Also, we would like to mention our next General Assembly in 2021, which will take place 10-11 March 2021 in Brussels, Belgium.

Kind regards, and see you soon!

Prof. Peter Braesicke, Chair of ECRA
Prof. Len Sheffrey, Co-Chair of ECRA

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ECRA Newsletter Autumn 2019

Our next Newsletter will feature an article by

Prof. Daniela Jacob

The challenges to limit global warming

Daniela Jacob is the Director of the Climate Service Center Germany (GERICS), a scientific organizational entity of Helmholtz-Zentrum Geesthacht (HZG).
She is member of the European Commission's Mission Board on "Adaptation to Climate Change including Societal Transformation" and was one of the coordinating lead authors of the IPCC Special Report on the impacts of global warming of 1.5° C above preindustrial level and one of the leading authors of the IPCC Fifth Assessment Report (Working Group 2).

European Climate Research Alliance

ECRA General Assembly 2021

10 - 11 March 2021

10 year anniversary of ECRA!! 🥳🎉

Save the Date

Here, members and guests will discuss the current mission of ECRA with an emphasis on our Collaborative Programmes (CPs). Which (new) research topics or aspects should be included in the ECRA portfolio?

Everyone will be welcome, and feedback or ideas are appreciated at any time.

Similar to our last GA, the second day will focus on science and ECRA's existing Collaborative Programmes:

Sea-Level Change and Coastal Impacts,
Arctic (Polar) ECRA,
Changes in the Hydrological Cycle, High-Impact Events and Climate Change

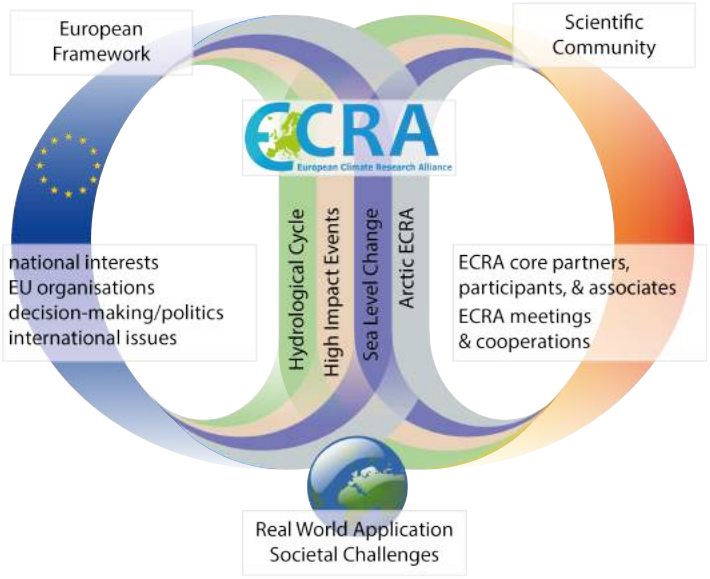
We are looking forward to dialogue and new ideas …

Participants of ECRA_GA19, 27 Feb 2019, Brussels

Scientific News

from the ECRA network, 2018 and 2019

Our recent ECRA publication on our governance, project management and the Collaborative Programmes



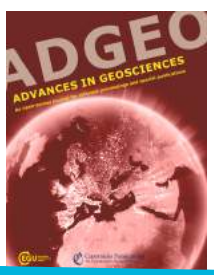
The European Climate Research Alliance (ECRA): Collaboration from bottom-up

Hoke, W., Swierczynski, T., Braesicke, P., Lochte, K., Shaffrey, L., Drews, M., Gregow, H., Ludwig, R., Nilsen, J. E. Ø., Palazzi, E., Sannino, G., Smedsrud, L. H., and ECRA network: The European Climate Research Alliance (ECRA): Collaboration from bottom-up, Adv. Geosci., 46, 1-10

Abstract

The European Climate Research Alliance (ECRA) is an association of leading European research institutions in the field of climate research (http://www.ecra-climate.eu/). ECRA is a bottom-up initiative and helps to facilitate the development of climate change research, combining the capacities of national research institutions, and inducing closer ties between existing national research initiatives, projects and infrastructures. ECRA works as an open platform to bring together climate researchers, providing excellent scientific expertise for policy makers and of societal relevance. The ECRA Board consists of representatives of ECRA partners and decides on governance, scientific priorities, and organisational matters.

https://www.adv-geosci.net/46/1/2019/



Blue Action

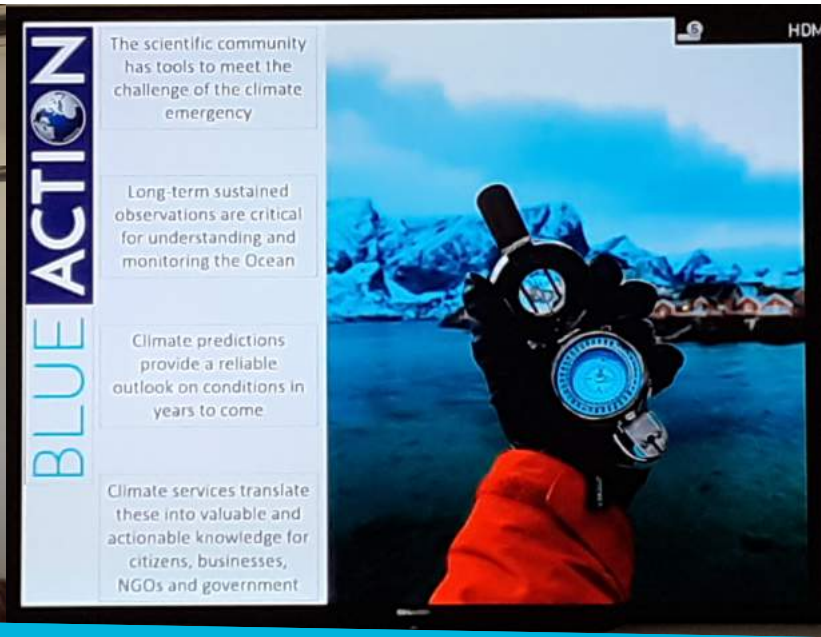
Stakeholder engagement meeting in Edinburgh on climate research and services as part of Blue-Action

How can we as climate scientists engage with communities who are looking to respond effectively to the climate crisis? Last month, the Blue-Action project hosted its first regional event, designed to bring together stakeholders from a range of sectors to share and discuss climate adaption within a specific geographical area. The focus of the event was Scotland, a country which is progressive in forming a nationwide adaption strategy.

Blue-Action is a collaborative research project that brings together over 120 experts from across 40 organisations to evaluate the impact of Arctic warming on the Northern hemisphere. It develops new techniques to improve forecast accuracy at sub-seasonal to decadal scales, which are key to planning for the future across many sectors, from industry to governments. An important component of the project is the translation of research into climate services, which ensures that the research has societal impact through co-design with stakeholders.

The recent event, held in Edinburgh, UK, was entitled "*Ocean observations and predictions in response to the climate emergency*." Invited participants from industry, academia, government and the third sector met with climate scientists from across the project to exchange knowledge on the need and potential for future climate services focused in the region. These discussions were focused by talks on the climate research process, from ocean observations to model projections, and how this work can lead to robust predictions of the physical characteristics and productivity of Scottish seas up to a decade in advance.

The key take-home messages from this event will form the basis of a new publicly available document published by Blue-Action to highlight the importance of ocean observations and predictions and translation to climate services to relevant sectors. If you are interested in finding out more, please contact Hannah.grist@srsl.com.



TeRRIFICA

Launch of the first reports of the TeRRIFICA project! Moving towards innovative climate action through co-creation

TeRRIFICA, standing for Territorial Responsible Research and Innovation Fostering Innovative Climate Action, is a European project aiming at developing innovative climate action through stakeholder engagement and co-creation. With its network partners in six regions of Europe, the project has published the following three reports on climate action and co-creation:

Case Studies Report: https://bit.ly/371smSq
For this report, the TeRRIFICA pilot region teams from Belarus, France, Germany, Poland, Serbia and Spain identified case studies of community-academia research partnership from their regions or countries related to climate change adaptation and/or mitigation. The projects were analysed taking into account their aims and objectives, the way of communication and participation, conflicts and barriers, and good participatory research practices. This "Case Studies Report" includes a summary of these analysed projects that highlights common outstanding elements for the development of future climate actions with community-academia research partnerships. Additionally, each case study is presented in an individual profile with key information to give a more detailed insight into these exciting and supportive examples of climate action.

Report on institutional framework conditions, relevant local and regional processes, instruments and co-creation factors related to or adaptable for climate action here.

This TeRRIFICA report is produced in the framework of the first phase of the project: the knowledge phase. Indeed, the first step for fostering co-creation on climate change is to learn about the local contexts of the six pilot regions, including specific local climate effects impacting the region, key actors, local policies on climate, if there are some participation mechanisms already in place, what are the types of collaborations between stakeholders, etc. This is one of the core goals of TeRRIFICA in regards to thematic approach, content definition and implementation strategies. This part of work, led by the Adam Mickiewicz University (Poznań) team, includes different activities to create a comprehensive overview on the state of the art of climate change adaptation research and innovation strategies and examples and communication strategies and methods at different levels of complexity.

Guide on engagement and co-creation
The TeRRIFICA guide on engagement and co-creation aims at fostering stakeholders' engagement and co-creation within the context of climate mitigation and adaptation. The guide provides some (non-)prescriptive ideas, recommendations and methodologies – they are a "starting point" to help stakeholder engagement and co-creation processes within climate change policymaking in the pilot regions. It also disseminates "good practices", i.e. some methodologies and experimentations that may be transferable to other regions in Europe to co-create measures tackling climate change.

If you want to stay informed about the developments of TeRRIFICA, please visit www.terrifica.eu, subscribe to the project's newsletter and follow our Social Media channels: Facebook / Twitter @TeRRIFICA_ / Community of Practice group on LinkedIn

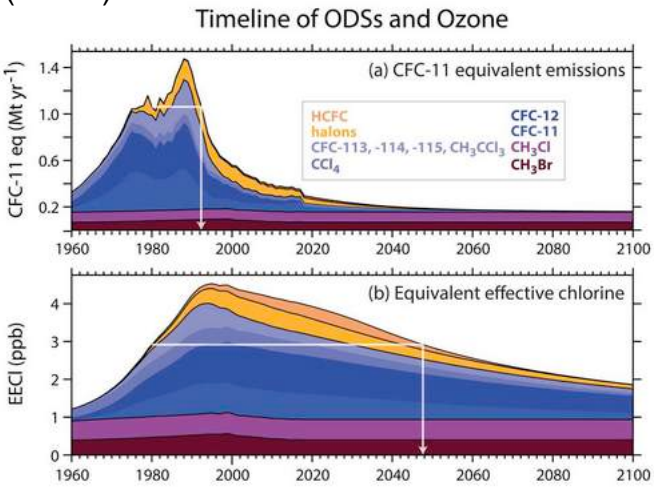
TeRRIFICA
Territorial RRI Fostering Innovative Climate Action

Recent publications

Update on Global Ozone: Past, Present, and Future, Chapter 3 in Scientific Assessment of Ozone Depletion: 2018, Global Ozone Research and Monitoring Project

Braesicke, P. and Neu, J. (Lead Authors), (..), Update on Global Ozone: Past, Present, and Future, Chapter 3 in Scientific Assessment of Ozone Depletion: 2018, Global Ozone Research and Monitoring Project – Report No. 58, **World Meteorological Organization**, Geneva, Switzerland, 2018.
https://www.esrl.noaa.gov/csd/assessments/ozone/2018/ / pdf (via fluorocarbons.org)

The increase of ozone-depleting substance (ODS) concentrations caused the large ozone decline observed from the early satellite era (circa 1980) to the mid-1990s. Since the late 1990s, concentrations of ODSs have been declining due to the successful implementa- tion of the Montreal Protocol. Ozone concentrations show latitudinally dependent increases in the upper stratosphere for the 2000–2016 period; changes in other parts of the stratosphere are not yet statistically significant. A new suite of model simulations confirms previous results for the upper stratosphere that about half of the observed increase is associated with declining ODSs. Ozone column trends are likewise positive but not generally statistically significant. Their overall evolution is, however, compatible with the decline in equivalent effective stratospheric chlorine (EESC).



Comparison of ECHAM5/MESSy Atmospheric Chemistry (EMAC) simulations of the Arctic winter 2009/2010 and 2010/2011 with Envisat/MIPAS and Aura/MLS observations

Khosrawi, F., Kirner, O., (..) and **P. Braesicke**, 2018, https://www.atmos-chem-phys.net/18/8873/2018/

Estimates of ozone return dates from Chemistry-Climate Model Initiative simulations

Dhomse, S., Kinnison, D., (..) **P. Braesicke** (..), 2018, https://www.atmos-chem-phys.net/18/8409/2018/

A modular software framework for compression of structured climate data, in Proceedings of the 26th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems(SIGSPATIAL ,18)

Cayoglu, U., J. Schröter, J. Meyer, A. Streit, and **P. Braesicke**, 2018, ACM, New York, NY, USA, 556-559, https://doi.org/10.1145/3274895.3274897

Enhanced climate change response of wintertime North Atlantic circulation, cyclonic activity and precipitation in a 25 km-resolution global atmospheric model

Baker, A. J., Schiemann, R., Hodges, K. I., Demory, M.-E., Mizielinski, M. S., Roberts, M. J., **Shaffrey, L. C.**, Strachan, J. and Vidale, P. L.; 2019; Journal of Climate, 32 (22). pp. 7763-7781. ISSN 1520-0442 doi: https://doi.org/10.1175/JCLI-D-19-0054.1

A recent paper on the response of the wintertime North Atlantic storm track to climate change in the HadGEM3 global climate model. The authors found the climate change response over the North Atlantic in storm track activity and precipitation is larger when they look in the higher (25km) resolution version of the climate model.

Water use in electricity generation for water-energy nexus analyses: The European case

Larsen, M.A.D. and Drews, M., 2018, Science of The Total Environment, Volume 651, Part 2, 15 February 2019, Pages 2044-2058, https://doi.org/10.1016/j.scitotenv.2018.10.045

- Electricity plant water withdrawals are estimated using a comprehensive analysis.
- Estimates resemble reported levels on spatio-temporal scales of country/year.
- The results support perspectives in larger scale water-energy nexus management.
- More open source, freely available and detailed data are however urged.

Robustness of European climate projections from dynamical downscaling

Christensen, H., Larsen, M.A.D., (..), **Drews, M.**, (..), 2019, Clim Dyn., https://doi.org/10.1007/s00382-019-04831-z

In this paper we assess whether 2 decades of investments in large ensembles of downscaling experiments with regional climate model simulations for Europe have contributed to a more robust model assessment of the future climate at a range of geographical scales. We study climate change projections of European seasonal temperature and precipitation using an ensemble-suite comprised by all readily available pan-European regional model projections for the twenty-first-century, representing increasing model resolution from ~50 to ~12 km grid distance, as well as lateral boundary and sea surface temperature conditions from a variety of global model simulations.

ICON-ART 2.1: a flexible tracer framework and its application for composition studies in numerical weather forecasting and climate simulations

Schröter, J., Rieger, D., Stassen, C., Vogel, H., Weimer, M., Werchner, S., Förstner, J., Prill, F., Reinert, D., Zängl, G., Giorgetta, M., Ruhnke, R., Vogel, B., and **Braesicke, P.**, 2018, Geosci. Model Dev., 11, 4043-4068, https://doi.org/10.5194/gmd-11-4043-2018

Simulation of flood hazard and risk in the Danube basin with the Future Danube Model

Hattermann, F.F., Wortmann, M., (..) and **Drews, M.**, Climate Services, Volume 12, December 2018, Pages 14-26, https://doi.org/10.1016/j.cliser.2018.07.001

Bioenergy production condition indicator for managing risks to forestry for Copernicus Climate Change Service

Strahlendorff, M., Pajuoja, H., and **Gregow, H.**, 2019, In book: FMI's Climate Bulletin Research Letters 1/2019, http://www.ilmastokatsaus.fi/2019/07/08/bioenergy-production-condition-indicator-for-managing-risks-to-forestry-for-copernicus-climate-change-service/

Novel services to support growth of bioeconomy and management of risks to forestry are crucially needed. Within the Copernicus Climate Change Service (C3S) project Clim4Energy, a proof of concept for a soil bearing indicator was developed and demonstrated. This indicator aimed to support the planning in timing winter harvesting operations for current machinery.

In Finland, Bioeconomy is a vital element of societal welfare. For instance, pulp factories have grown to produce also energy, renewable fuel and other chemicals. Pulpwood is a major resource to be secured sustainably, but also economically. In 2014, the Finnish Government set an aim for the Bioeconomy sector to create 100 000 new jobs by 2025.

Mitigation goals and climate change impacts on the forestry sector are difficult to combine economically. Finland's forests have been growing fast during recent decades due to increasing warming. At the same time the winter ground bearing has weakened and harvesting conditions have become worse (Gregow et al., 2011 and Siren M., 2000).

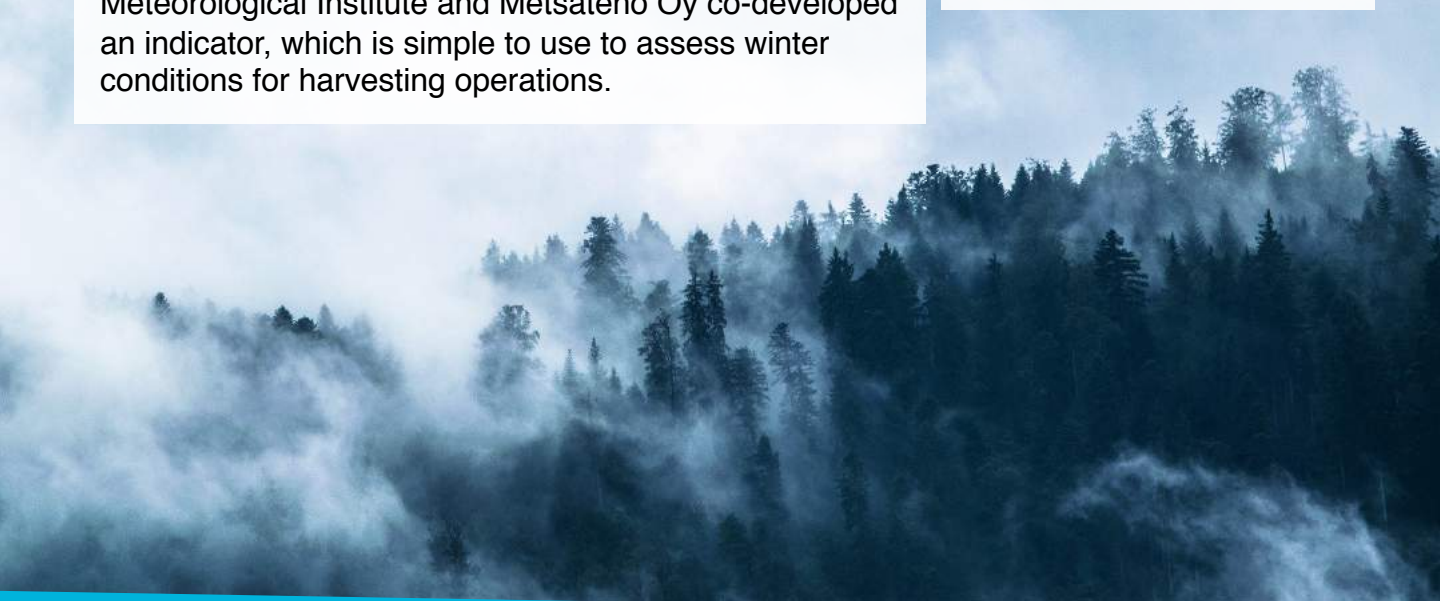
Within the project Clim4Energy, the Finnish Meteorological Institute and Metsäteho Oy co-developed an indicator, which is simple to use to assess winter conditions for harvesting operations.

Preparing for peat production seasons in Finland and experimenting with long range impact forecasting

Gregow, H. et al., 2019, Climate Services, Volume 14, April 2019, Pages 37-50, https://doi.org/10.1016/j.cliser.2019.04.003

Extreme weather and nuclear power plants (EXWE)

Jyhlä, K., Pellikka, H., (..) **Gregow, H.**, (..), 2019, In book: Hämäläinen J, Suolanen V. (eds): SAFIR2018 - The Finnish research Programme on nuclear power plant safety 2015-2018. Final report. VTT Technology 349. https://www.vtt.fi/inf/pdf/technology/2019/T349.pdf



Identifying Policy Actions Supporting Weather-Related Risk Management and Climate Change Adaptation in Finland

Tuomenvirta, H., **Gregow, H.**, et al., 2019, Sustainability 2019, 11(13), 3661; https://doi.org/10.3390/su11133661

Climate change adaptation (CCA) policies require scientific input to focus on relevant risks and opportunities, to promote effective and efficient measures and ensure implementation. This calls for policy relevant research to formulate salient policy recommendations. This article examines how CCA research may contribute to policy recommendations in the light of idealized set of knowledge production attributes for policy development in Finland.

ClimEx project: a 50-member ensemble of climate change projections at 12-km resolution over Europe and northeastern North America with the Canadian Regional Climate Model (CRCM5)

Leduc, M., (..), **Ludwig, R.**, (..), 2019, AMS April 2019, https://doi.org/10.1175/JAMC-D-18-0021.1

The Canadian Regional Climate Model (CRCM5) Large Ensemble (CRCM5-LE) consists of a dynamically downscaled version of the CanESM2 50-member initial-conditions ensemble (CanESM2-LE). The downscaling was performed at 12-km resolution over two domains, Europe (EU) and northeastern North America (NNA), and the simulations extend from 1950 to 2099, following the RCP8.5 scenario. In terms of validation, warm biases are found over the EU and NNA domains during summer, whereas during winter cold and warm biases appear over EU and NNA, respectively. For precipitation, simulations are generally wetter than the observations but slight dry biases also occur in summer. Climate change projections for 2080–99 (relative to 2000–19) show temperature changes reaching 8°C in summer over some parts of Europe, and exceeding 12°C in northern Québec during winter. For precipitation, central Europe will become much dryer during summer (–2 mm day–1) and wetter during winter (>1.2 mm day–1).

The impact of the Madden-Julian Oscillation on hydrological extremes

Peng, J., (..), **Ludwig, R.**, 2019, Journal of Hydrology 571(571), https://doi.org/10.1016/j.jhydrol.2019.01.055

Responses of a native and a recent invader snail to warming and dry conditions: the case of the lower Ebro River

López-van Oosterom, M.V., (..) **Ludwig, R.**, 2019, https://doi.org/10.1007/s10452-019-09704-5

Elevation-dependent warming in global climate model simulations at high spatial resolution

Palazzi, E., et al., 2019, https://doi.org/10.1007/s00382-018-4287-z

The enhancement of warming rates with elevation, so-called elevation-dependent warming (EDW), is one of the regional, still not completely understood, expressions of global warming. Sentinels of climate and environmental changes, mountains have experienced more rapid and intense warming trends in the recent decades, leading to serious impacts on mountain ecosystems and downstream. In this paper we use a state-of-the-art Global Climate Model (EC-Earth) to investigate the impact of model spatial resolution on the representation of this phenomenon and to highlight possible differences in EDW and its causes in different mountain regions of the Northern Hemisphere. To this end we use EC-Earth climate simulations at five different spatial resolutions, from ~125 to ~16 km, to explore the existence and the driving mechanisms of EDW in the Colorado Rocky Mountains, the Greater Alpine Region and the Tibetan Plateau–Himalayas.

Acoustic impact of a wave energy converter in Mediterranean shallow waters

Buscaino, G., Mattiazzo, G., **Sannino, G.**, et al., 2019, Scientific Reports, Volume 9, Article number: 9586 (2019), https://www.nature.com/articles/s41598-019-45926-1

In this study, underwater noise from a full-scale wave energy converter system (ISWEC), installed on the coast of Pantelleria Island (central Mediterranean Sea), was characterized. The noise was measured using an autonomous acoustic recorder anchored to the sea bottom 40 m from the ISWEC hull.

How Can Climate Change Affect the UNESCO Cultural Heritage Sites in Panama?

Ciantelli, C., **Palazzi, E.**, et al., 2018, Geosciences 2018, 8(8), https://doi.org/10.3390/geosciences8080296

Stochastic downscaling of precipitation in complex orography: a simple method to reproduce a realistic fine-scale climatology

Terzago, S., **Palazzi, E.**, and Von Hardenberg, J., 2018, Nat. Hazards Earth Syst. Sci., 18, 2825-2840, 2018, https://doi.org/10.5194/nhess-18-2825-2018

Temporal scales of variability in the Mediterranean Sea ecosystem: Insight from a coupled model

Di Biagio, V., (..), **Sannino, G.**, (..), 2019, Journal of Marine Systems, Volume 197, September 2019, 103176, https://doi.org/10.1016/j.jmarsys.2019.05.002

- We propose a daily-output online-coupled model of the Mediterranean Sea ecosystem.
- We assess the temporal variability of surface temperature, nutrients and chlorophyll.
- The high-frequency (i.e. sub-weekly) variability is significant across the basin.
- The northern Mediterranean areas show higher seasonal and high-frequency variability,

Modelling study of transformations of the exchange flows along the Strait of Gibraltar

Sanchez-Roman, A., Jorda, G., **Sannino, G.**, (..), 2019, Ocean Sci., 14, 1547-1566, 2018, https://doi.org/10.5194/os-14-1547-2018

Bioenergy production condition indicator for managing risks to forestry for Copernicus Climate Change Service

Strahlendorff, M., **Gregow, H.**, and Pajuoja, H., In book: FMI's Climate Bulletin Research Letters 1/2019Publisher: Finnish Meteorological Institute https://www.researchgate.net/publication/334319940_Bioenergy_production_condition_indicator_for_managing_risks_to_forestry_for_Copernicus_Climate_Change_Service

The role of serial European windstorm clustering for extreme seasonal losses as determined from multi-centennial simulations of high-resolution global climate model data

Priestley, M.D.K., Dacre, H.F., **Shaffrey, L.C.**, (..), 2019, Nat. Hazards Earth Syst. Sci., 18, 2991-3006, 2018, https://doi.org/10.5194/nhess-18-2991-2018

Extratropical cyclones are the most damaging natural hazard to affect western Europe. Serial clustering occurs when many intense cyclones affect one specific geographic region in a short period of time which can potentially lead to very large seasonal losses. Previous studies have shown that intense cyclones may be more likely to cluster than less intense cyclones. We revisit this topic using a high-resolution climate model with the aim to determine how important clustering is for windstorm-related losses.

EU Activities

Horizon 2020 and Horizon Europe

Horizon 2020 is the biggest EU Research and Innovation programme ever with nearly €80 billion of funding available over 7 years (**2014 to 2020**) – in addition to the private investment that this money will attract. It promises more breakthroughs, discoveries and world-firsts by taking great ideas from the lab to the market."

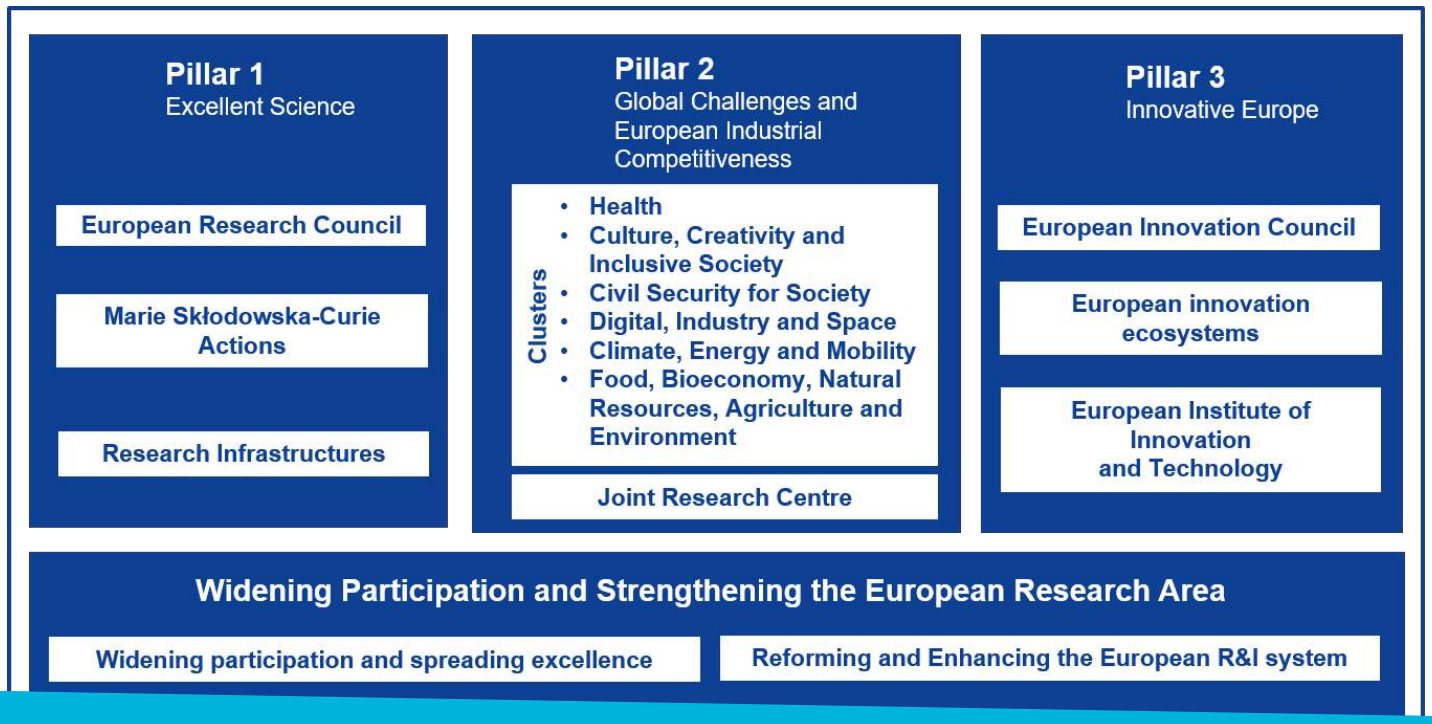
Source and further information here.

Horizon Europe is currently being prepared by the European Commission, the European Parliament and other stakeholders. Open issues are still the financial aspect, the overall budget will be around **100 billion EUR** for research and innovation activities.
Most relevant for ECRA is the Pillar 2 – "Global Challenges and European Industrial Competitiveness", see below for the graphic from the EC homepage.

The role and importance of Climate research in the programme is not yet settled, but ECRA is trying to lobby for more representation.

The homepage of Horizon Europe can be found here.

Preliminary structure of Horizon Europe
Pillar 2 with the Cluster 'Climate, Energy and Mobility'
Source



EU Activities

Horizon Europe: Missions

Another initiative of **Horizon Europe** are the **Missions**.

"These missions will be high-ambition, high profile **initiatives**, **to find solutions to some of the major challenges faced by European citizens, with a clear target** that captures the imagination of citizens at large."

"There will be five 'Mission Boards', one for each of the following areas:

- Adaptation to **climate change** including societal transformation;
- Cancer;
- Healthy **oceans**, seas, **coastal** and inland waters;
- **Climate-neutral** and smart cities;
- Soil health and food."

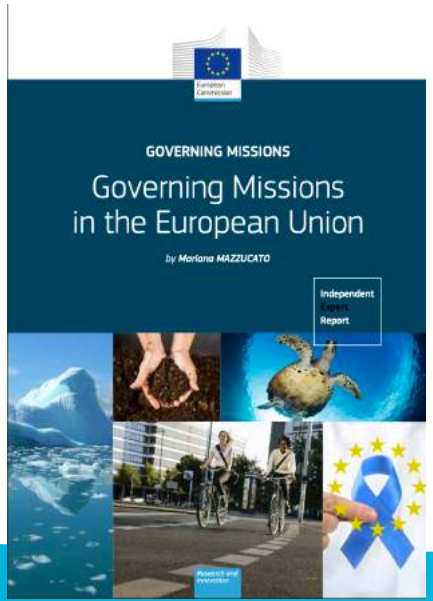
Source and further information here.

Climate information is needed in most of the Missions and ECRA is reaching out to all actors in this area to enable collaboration and coordination, where possible.

Daniela Jacob (see page 2), together with Connie Hedegaard, Jean-Pascale van Ypserle, Ann Runnel, Asun Lera St. Clair, Mathieu Cornieti, Mirela Holy, Kevin O'Connor, Mark Scicluna Bartoli, Hein Pieper, Helena Freitas, Johan Rockstrom, Jaroslav Mysiak, Virginia Murray and Per Espen Stoknes have been appointed to the Mission Board for Adaptation to Climate Change, including Societal Transformation.

The **Mission Boards** have the opportunity to use their free topical reign to shape how Climate research topics and the real-life applications could be combined to push forward a more sustainable Europe.

More information on the Missions here.
List of all Mission Board members here.



The so-called 'Mazzucato-report' on *Mission-Oriented Research & Innovation in the European Union*, 2018, introducing the concept of the Missions to the European Commission. The follow-up report *Governing Missions*, updates the first edition.

EU Activities

Horizon 2020: current Calls for Proposals

Information on H2020 Work Programme 2018-2010

For the full **Work Programme** on **12. Climate action, environment, resource efficiency and raw materials**, click here.
An overview of the 2019 Timeline of calls for proposals is available here.

CALL
LC-CLA-10-2020: Scientific support to designing mitigation pathways and policies

Specific Challenge
In the context of the Paris Agreement, all Parties including the EU were invited to submit by 2020 both an update of the Nationally Determined Contributions (NDCs) regarding short term actions up to 2030 as well as long-term greenhouse gas emission development strategies up to 2050. These strategies are expected to underpin the EU's commitment to the Paris Agreement. A reliable policy framework is needed for business and consumers enabling low-carbon consumption, lifestyle and investment decisions. Furthermore, the EU does not act in isolation and cannot achieve the Paris Agreement goals by its own mitigation efforts. Achieving the goals of the Paris Agreement will require a very significant increase of ambition and swift implementation at the global scale. Actions under this topic should provide scientific evidence, analysis and support for these processes and reinforce the link between the latest climate science, mitigation pathways and underlying policies.

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL
LC-CLA-12-2020: Advancing climate services

3 subtopics:
- Mapping European coastal infrastructure at risk from sea-level rise
- Detection and attribution of extreme events using Artificial Intelligence
- Impacts of overshooting

Policy Context
- Paris Agreement
- The 2030 Agenda on Sustainable Development
- The EU Strategy on Adaptation to Climate Change
- EU Flood Directive and EU Water Framework Directive
- EU Action Plan on the Sendai Framework for DRR

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL

LC-CLA-13-2020: Climate resilience of European coastal cities and settlements

One third of the EU's population lives within 50 km of the coast, and generates an estimated 30% of the total EU Gross Domestic Product.

Coastal water levels have increased at most locations along the European coastline the total RSL rise for European coasts including the Mediterranean and Atlantic coasts is in the range of 0.4 to 0.6 m and 0.4 to 0.8 m during the last decades of the 21th century (2070-2100) for the climate scenarios RCP4.5 and RCP8.5

Robust adaptation measures need to be undertaken in coastal and low-lying areas to protect them from increasing climate and sea level rise risks, including coastal erosion.

- Uncertainty of regional and local projections
- Lack of sustainable finance, public-private cooperation
- Limited knowledge and evidence-base

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL

LC-CLA-14-2020: Understanding climate-water-energy-food nexus and streamlining water-related policies

Specific Challenge

Increasing demands for water, energy, food in the context of climate change, demographic changes, economic development and international trade, creates conflicts in water allocation between these sectors. Therefore there is a need to better align water-related or water-dependent policies looking in a systemic way from the natural climate-water-energy-food nexus perspective at various geographical scales, and taking into account economic, political and societal aspects

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL

LC-CLA-23-2020: Towards a comprehensive European mountain research strategy

Specific challenge

Coordination and Support Action for R&I to advance current changes in mountain areas derived from climate changes (incl impact human action, prediction of changes and foster observations for sound monitoring)

Context

- European mountain regions are important to biodiversity/endemic species and human well-being, but sensitive to global change
- Europe operates excellent/leading research(infrastructures) in mountains
- High degree of coordination necessary (Europe and beyond)

Types of action: Coordination and support action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: single-stage
Deadline date: 13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL
LC-CLA-18-2020: Developing the next generation of Earth System Models

Specific Challenge
Ensembles of scenario-based runs for designing and evaluating mitigation pathways and goals.
ESMs still have several areas of improvement around predicting capability, process realism, capacity of resolving epistemic uncertainty, needs of parametrisation, reduction in systematic biases, time and resolution.

Types of action: Research and Innovation action
Lump Sum
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL
LC-CLA-22-2020: Enhancing the Belmont Forum Collaborative Research Action on Climate, Environment and Health

Specific Challenge
The EU is a major investor and player in both climate change and health research. The EU also supports global research and innovation collaboration, including that done by the Belmont Forum - a partnership of funding organisations, international science councils, and consortia committed to the advancement of interdisciplinary and transdisciplinary science. Bringing together climate change and health research has been a particular challenge in Europe that requires coordination and support. Previous similar actions proved to be instrumental in providing the necessary support and the high degree of coordination within the European landscape and beyond.

Types of action: Coordination and support action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: single-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL
LC-CLA-17-2020: Polar climate: understanding the polar processes in a global context in the Arctic and Antarctic Regions

Specific Challenge
Many of the natural physical processes occurring in the polar atmosphere and oceans are potentially of profound significance in controlling conditions across the globe and affecting lives and livelihoods across the world, in the Polar, sub-Polar, temperate, and tropical regions. Understanding the interacting nature and feedback of polar processes and addressing their consequences in a global context will benefit the people, policy and businesses well beyond the Polar Regions.

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL

LC-CLA-21-2020: Coordination of European Polar research

Specific Challenge

The EU is a major investor and player in Polar research. The EU also supports the development and the international access to research infrastructures (terrestrial research stations, remote and in-situ observing systems, research aircrafts and vessels, etc.) throughout the Polar Regions, with relevant international scientific cooperation activities with non-EU countries. Previous actions proved to be instrumental in providing the needed support and the high degree of coordination within the European landscape and beyond.

The Commission considers that proposals requesting a contribution from the EU in the range of EUR 3 million would allow this specific challenge to be addressed appropriately. Nonetheless, this does not preclude submission and selection of proposals requesting other amounts.

Types of action: Coordination and support action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: single-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

CALL

LC-CLA-20-2020: Supporting the implementation of GEOSS in the Arctic in collaboration with Copernicus

Specific Challenge

In order to gain more insight in the fast rate of climate, ecological and environmental change taking place in the Arctic and to facilitate well-informed decisions, there is a need to develop coordinated Earth observations and information services specifically targeting this region, also building on the essential contribution of indigenous knowledge and community-based monitoring systems. These observations and services need to be delivered in order to support a sustainable development in the Arctic, particularly for responding to the needs of the people who live there. Observations and services are also necessary to improve the monitoring and predicting capabilities on changes that may affect other parts of the planet, and in particular the Northern hemisphere. The challenge and suitable actions to alleviate adverse consequences were identified in the ASM2 Joint Statement of Ministers.

Types of action: Research and Innovation action
Programme: Horizon 2020
Opening date: 12 November 2019
Deadline model: two-stage
Deadline date:13 February 2020
Link to call in funder's portal
Slides published at the Information days here.

ECRA Activities

Upcoming events within the ECRA network

[ECRA-CP-CHC] Hilppa and Martin: reviewers and **editors of the Journal of Sustainability**. More information: https://www.mdpi.com/journal/sustainability/special_issues/High_Impact_Events
Deadline for manuscript submissions: 30 November 2019.

[ECRA-CP-SLC] **Climate change and energy transition in the Mediterranean**: cross fertilization I Palaiseau, FR, 21-22 November 2019 I The MISTRALS program together with Ecole polytechnique and Ecole polytechnique Executive Education organize this 2-day conference to create a meeting ground for the interaction of researchers, industrials and public authorities, to exchange mix views on the implementation of a sustainable energy transition compatible with international negotiations in the Mediterranean area. I https://exed.polytechnique.edu/en/formations/climate-change-and-energy-transition-mediterranean-65291

The third edition of ClimateuropeFestival organised by Climateurope I Riga, Latvia 16-18 June 2020 I https://www.climateurope.eu/events-climateurope/festival/Climateurope-festival-2020/ I Twitter: @Climateurope

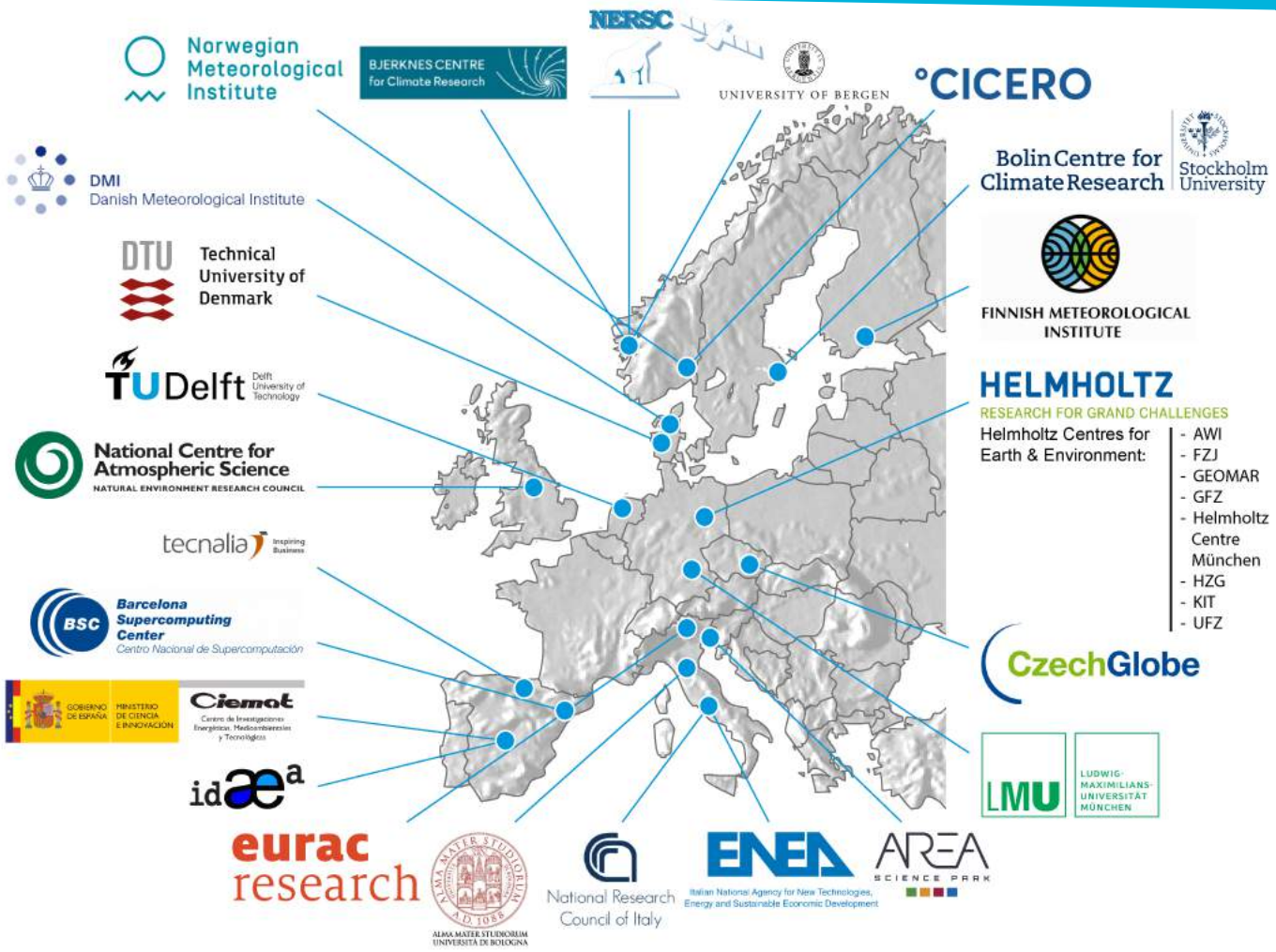
EGU General Assembly 2020

EGU General Assembly I Vienna, AT, 03-08 May 2019 I tbd
ECRA will be represented with various activities which will be announced on the ECRA website http://www.ecra-climate.eu/activities-events

European Meteorological Society
Bratislava, SK, 7–11 September 2020 I ECRA participation
ECRA will be represented at the EMS. Contact the Secretariat for more information.

ECCA 2021, the European Climate Change Adaptation conference I ?? May 2021, Ljubljana, SI I organised by JPI Climate

An overview of past and future events is available on the ECRA homepage
http://www.ecra-climate.eu/activities-events



ECRA: **Knowledge for climate action**

For any questions...

European Climate Research Alliance

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