



ECCA 2019 BRIEFING:



Research and practice gaps, and their relevance for Horizon Europe: outcomes from ECCA 2019



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The 4th European Climate Change Adaptation Conference (ECCA 2019) took place in Lisbon from 28 to 31 May 2019. The conference brought together researchers, policymakers and practitioners to discuss recent advances in climate change adaptation (CCA) and disaster risk reduction (DRR) research, policy and practice, and aimed to inspire collective climate action.

While this was a scientific and technical, rather than a political conference, several valuable key messages emerged that we believe should inform current and future efforts to increase climate adaptation and risk reduction by governments, public agencies, research funders, researchers, non-governmental and private sector actors.

Among these messages, developed by the organisers as a summary of discussions during the conference, a number of research gaps have emerged. These are of critical importance for future research planning in Europe and internationally. The messages do not represent a consensus view of all 1,200 ECCA 2019 participants, nor do they necessarily represent the official view of the organisations involved.

Given the urgency to act and further understand the challenges that lie ahead, the ECCA 2019 organisers invite readers to consider these messages and research gaps, and share them widely in their networks.



Availability of quality data is critical to advance CCA and DRR research

Efforts are needed to showcase available data and what kind of support and solutions can be provided. High quality, high resolution data is available for Europe and ready to be used, acknowledging that there are still diverse research gaps associated with the abundance of information and data. However, usability issues are still a challenge and constrain many actors when it comes to making use of research outputs.

New approaches in the modelling of local climate change hazards and impacts are needed

Analyses should properly reflect socio-economic developments as climate change impacts vary considerably between geographical regions across Europe, and the specific local conditions strongly affect both the current situation as well as potential future changes. As a result, stakeholder engagement is an essential element in considering and jointly defining socio-economic narratives that pave the way for decisions that consider adaptation and risk reduction measures.

Raising awareness for the need of adaptation and risk reduction depends on broad engagement with society

Increasing awareness and engagement with the general public is an important element of successful adaptation strategies, and must take into account the social and cultural diversity of the various groups. Serious gaming and arts are new and interesting approaches that can help to raise awareness amongst the general public, along with other ideas that allow for the communication of uncertainties (e.g. probabilistic approaches) which demonstrate how CCA and DRR can become an integral part of all kinds of decision-making processes.

Developing novel co-design and co-production processes for different governance scales is urgent and crucial

We must develop the capacity of actors in science, practice and government to effectively engage in co-production processes of knowledge and solutions. Processes of trans-disciplinary co-design still face many challenges, ranging from institutional limitations to reach out to other sectors or disciplines, to the lack of capacity to facilitate such processes effectively. In order to ensure that co-production processes can make an effective contribution to solution pathways, we need to facilitate joint learning processes and a common language. One of the greatest challenges is that solutions are often context specific, so new methods and decision-support resources are needed to make best use of opportunities for scaling-up actions.

Further improve information and knowledge sharing on CCA and DRR approaches and solutions

Despite recent developments in terms of climate data, information and knowledge transfer, there are still research gaps associated with the abundance of information and data, and the diversity of language with which it is described. It is of utmost importance to standardise data, knowledge collection and sharing to ensure that it is high-quality, useful, useable and salient. Adaptation and risk reduction platforms are powerful ways to disseminate knowledge and good practices on adaptation and risk reduction to decision-makers at all levels.



Develop better communication and dissemination processes considering the specific context of different actors in CCA and DRR practice

It is important to effectively communicate research results to business and public administration, in order to raise awareness on climate change impacts and the importance for implementing adaptation and risk reduction measures. New formats should be tested to identify the most suitable means of communication that support society to take CCA and DRR action. The potential of user-friendly visualisations as a means to support building successful narratives should be explored further. Information must be cross-checked with scientific and observed evidence to ensure its veracity, but must also be usable by a range of non-technical actors.

Explore innovative technologies including artificial intelligence and machine learning approaches

Research is needed into how these approaches may facilitate analysis, access to data, development of effective decision-support tools, and cross-learning and sharing of results in adaptation and risk management. Although promising, there are still many uncertainties regarding the practical application of these new technologies and how they can be made fit-for-purpose in relation to climate action needs.

Develop and implement specific tools for monitoring and evaluation of ongoing practice to ensure knowledge development and learning from both good and bad experiences

There is a need to further develop and improve indicators for adaptation – interpretation of especially quantitative indicators should be supplemented with narratives that explain why we do something, how we expect things changing as a result and how the indicator data shows things are changing. We do need metrics and methodologies for measuring and understanding effectiveness and outcomes of adaptation policies and actions. The connectivity of Monitoring, Reporting and Evaluation (MRE) at different levels of implementing adaptation policies and actions (international, European, national, local) needs to be further strengthened, keeping in mind that the objectives of MRE and the relevance of different indicators vary across different levels of governance.

A better understanding of tipping points and limits – biophysical, socio-cultural, economic and ecological – is needed

Tipping points and critical limits are rapidly approaching as the impacts of the changing climate become a reality. Further in-depth studies and a better understanding of how climate change contributes to such breaking points are needed.

Additional research is required on how vulnerability can be quantified and reduced via increased adaptive capacity and risk reduction

It is vital that we acknowledge that human and natural systems have limits to adaptation and we should therefore discuss loss and damage management. A focus on research for particularly vulnerable groups and natural systems will promote adaptation and risk reduction actions in a socially just manner. In this context, linking vulnerability assessments with disaster loss and damage is important, as the outcomes can help to prepare community-level adaptation.



The notion that climate risks undermine the ability to deliver on other global goals agreed by the international community needs urgent consideration

Taking a systemic view will highlight the co-benefits of interconnecting agendas, such as CCA & DRR, poverty reduction or health inequalities, leading to synergistic responses and solutions which support the delivery of the Sustainable Development Goals and other international agreements.

Urbanisation and the impacts of climate change on human health are among the most urgent gaps to be covered

We need to take a more systemic view, reflecting the interconnectivity between human and natural systems. For example, the water-energy-land nexus requires a better understanding of climate impacts on water availability, water scarcity and drought, and how they affect human health. This helps to identify vulnerable areas and prepare them for future change.

The role of governance in adaptation and risk reduction (Climate Risk Management) still requires further development

Existing, often complex, governance models require further improvements or should be designed to be adaptive. Guidelines and actionable procedures that more effectively support implementation are needed: these guidelines must reflect specific target groups' needs and address vulnerabilities and social justice challenges, but also how to engage and implicate the different actors in such governance initiatives.

We need to find out:

- What are successful governance models?
- Which governance structures help managing trade-offs and avoid rebound and leakage effects?
- How to develop a top-down approach that is consistent with a bottom-up approach?
- How to ensure “circular” governance practices in terms of decision making and joint actions?
- How can economic and financial systems be better utilised to support adaptation and risk reduction efforts?

There is a greater need for research into specific hazards, particularly wildfires, while heat stress and urban flooding are growing problems in Europe.

This research should cover causes, changing risks and emergency responses. In addition, the vulnerability of particular groups and natural systems should be assessed in more detail, as well as exploring the potential for nature-based solutions for CCA and DRR.

Future research priorities

Some specific areas of importance for future research on co-production processes are:

- Heatwaves and the impact of extreme heat and associated health implications;
- Community needs and effective ways to support the most vulnerable communities to shape their adaptation and development pathways;
- The possibility of using big data to support effective adaptation at different scales;
- Exploring innovative financial instruments to support adaptation and risk reduction measures;
- Improving the match between climate information and possible use for the formulation of adaptation strategies, plans and measures;
- Engagement and implication processes in the co-design of adaptations actions; and
- Effective ways of evaluating adaptation measures at different scales.

This report should be referenced as:

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