

Systemic perspective needed for successful climate risk assessments and adaptation strategies

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The recently published report from the Intergovernmental Panel on Climate Change (IPCC) on impacts, adaptation and vulnerability recognizes that climate change impacts and risks are becoming increasingly complex and more difficult to manage. Multiple climate hazards will occur simultaneously, and multiple climatic and non-climatic risks will interact, resulting in compounding overall risk and risks cascading across sectors and regions.

"Complexity is our "new normal," and the dynamic nature of risk and its determinants is one important dimension of complexity, [complex systems](#) and associated systemic risks, " said Jana Sillmann, professor at the University of Hamburg, Germany, and CICERO Center for International Climate Research. Sillmann led the writing of the Systemic Risk Briefing Note that was published 10 March 2022 by the International Science Council (ISC), the United Nations Office for Disaster Risk Reduction (UNDRR) and the Knowledge Action Network on Emergent Risks and Extreme Events (Risk KAN).

Interconnected challenges

The Briefing Note highlights that contemporary challenges, such as climate change, biodiversity loss or the COVID-19 pandemic, are all interconnected, interdependent and require systems thinking and transdisciplinary approaches.

"This means that that we need to bring everybody, including scientists, politicians, practitioners and citizens, to the table to find solutions for such complex problems," continued Sillmann and highlighted one good example of this approach; Klimathons (hackathons), that for instance took place in Bergen and online.

"The Briefing Note illustrates an increased focus on [systemic risk](#), both from researchers and institutional actors, over time related to various events such as the [global financial crisis](#), cyberattacks and recently COVID 19, which have resulted in knock-on effects across sectors and [geographical regions](#), said Ingrid Christensen, researcher at CICERO and co-author of the Briefing Note. Christensen is currently working on her Ph.D. focusing on collaborative governance in the transition to a circular economy.

Ways to manage systemic risks

The Briefing Note argues that climate risk assessments and adaptation strategies that focus on nations and sectors, addressing clearly identified risks, actors and options to reduce risk are insufficient to deal with systemic risks such as climate change or the COVID-19 pandemic.

Governments, public and private sectors as well as civil society organizations trying to anticipate future disruption must take a systemic perspective when designing policies or measures to reduce and manage these risks, according to the Briefing Note. Reducing underlying vulnerabilities would put the world in a better position to reduce the systemic risks triggered by climate change and other challenges.

"While [quantitative data](#) plays a crucial role in development of models and theories, it will never be enough to understand the full extent and complexity of systemic risk. Only by considering the dynamic relationships among the parts of the system, we can better understand and manage systemic [risks](#)," said Sillmann.

More information: Briefing Note on Systemic Risk:
council.science/publications/briefing-systemic-risk/

Provided by Centre for International Climate and Environmental Research (CICERO)

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