

New solutions for addressing systemic risks

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Systemic risks like climate change, cybersecurity and pandemics are characterized by high complexity, uncertainty, ambiguity, and effects beyond the system in which they originate. That's why novel research approaches and regulatory measures are indispensable for the evaluation and management of these risks. An interdisciplinary team recently

published a paper on this subject, which appears as the first article in a special issue of the journal *Risk Analysis*, edited by Ortwin Renn and Pia-Johanna Schweizer from the Institute for Advanced Sustainability Studies.

The negative effects of systemic risks are often felt far beyond the areas where the most obvious damage occurs—the coronavirus crisis is a case in point. The authors of the article "Systemic Risks from Different Perspectives" analyze the challenges presented by systemic risks from the perspective of different disciplines, ranging from mathematics to complexity science, engineering, biology, ecology, and the social sciences. They highlight the particular insights of each scientific perspective and combine them to produce an interdisciplinary understanding of systemic risks and effective risk [governance](#) measures.

The researchers recommend integrating modeling tools and empirical data in order to gain a comprehensive understanding of systemic risks that can feed into policy advice. "Human reactions and other unanticipated stress factors also have to be considered here, as well as the ripple effects by which risk spreads from one system to another," explains co-author Pia-Johanna Schweizer. To be both effective and socially acceptable, governance of systemic risks requires interdisciplinary and cross-sectoral cooperation, a close monitoring system, and the engagement of scientists, regulators and stakeholders. In their study, the authors outline a step-by-step procedure for dealing with these challenges.

They also emphasize the importance of public and stakeholder participation and risk communication. In [democratic societies](#), successful risk governance is more than simply a matter of reducing risks: risk management also has to be democratically legitimized. The ultimate aim is to ensure adaptable and inclusive governance of systemic risks.

Special issue on conceptual questions and case studies

The special issue in which the article appears offers a theoretically substantiated and empirically proven insight into the concept of systemic risks and makes practical suggestions for managing them. It is the culmination of a workshop series that the IASS organized in cooperation with the Berlin-Brandenburg Academy of Sciences and Humanities (BBAW) and is divided into two parts. The first part is devoted to conceptual issues and the second part to case studies. A study on governance requirements in the case of systemic risks rounds off the special issue. The individual articles will be published online in the coming months prior to the publication of the entire special issue.

More information: Ortwin Renn et al, Systemic Risks from Different Perspectives, *Risk Analysis* (2020). [DOI: 10.1111/risa.13657](https://doi.org/10.1111/risa.13657)

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