Institute for Advanced Sustainability Studies
IASS in Potsdam

IASS Project Systemic Risks

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IIASA, Laxenburg
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IASS project „Systemic Risks“

Overview
Aims

- Agent based modelling of systemic risks
- Integrative concept of emerging systemic risks
- Identification of tipping points leading towards system change
- Improved governance of systemic risks
- Transformative risk research
Project Structure

Macro

IASS Transdisciplinary research agenda

IASS Director
Prof. Dr. Dr. h.c. Ortwin Renn

IASS Senior Fellows
Prof. Dr. Klaus Lucas
Prof. Dr. Sander van der Leeuw
Prof. Dr. Norio Okada

Meso

Interdisciplinary research

Governance

IASS Project Leader
Dr. Pia-Johanna Schweizer

Micro

Empirical studies

- Financial risk
- Social inequality
- Climate engineering

Project Team
Dr. Armin Haas, Dr. Frank Meißner, Steffen Murau
Katharina Beyerl
Sean Low
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Thematic Focus
Definitions

- “Risk is uncertainty about and severity of the consequences (or outcomes) of an activity with respect to something that humans value.” (Aven and Renn 2008: 1)
- The term systemic risk describes the extent to which a risk is embedded in the larger contexts of societal processes (Renn et al 2011).
- Systemic risk refers to the “risk or probability of breakdowns in an entire system, as opposed to breakdowns in individual parts or components, and is evidenced by co-movements (correlation) among most or all parts” (Kaufmann and Scott 2003: 372).
Concepts of systemic risk

- Epistemological Challenges
  - Complexity
  - Uncertainty
  - Ambiguity
- Transboundary hazards
- Transgression of system boundaries
- Non-linear development
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Methodology
Interdisciplinary research methodology

Inclusive risk governance

Network theory

Dynamic agent-based structural modelling

Integrated financial risk governance

Bayesian belief network analysis

Psychological research of risk perceptions

Quantitative and qualitative social research

Transformative sustainability research

Transdisciplinary research
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Research agenda
Activities and events

- EU-projects “Green Win” and “Dolfins”
- Research initiative “Systemische Risiken als Prototypen Dynamischer Strukturbildung” together with Berlin-Brandenburgische Akademie der Wissenschaften (BBAW)
- Annual meeting with International Risk Governance Council at IASS
- IASS will host Society for Risk Analysis Europe’s annual meeting 2019
Networks

- Berlin-Brandenburgische Akademie der Wissenschaften
- Global Climate Forum
- Arizona State University
- Society for Risk Analysis
- International Risk Governance Council
Contact

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