

Project title: “Unpacking climate impact
CHAINS. A new generation of action – and
user-oriented climate change risk
assessments” (UNCHAIN)

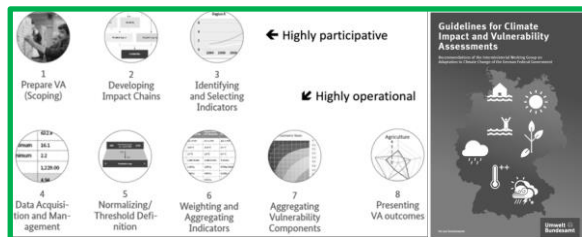
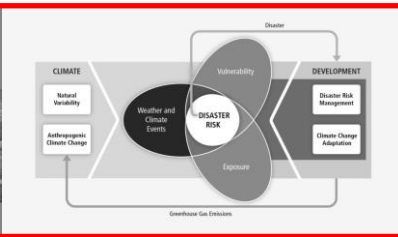
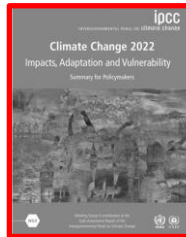


AXIS final event
Dublin, Royal Irish Academy
19 June 2023

Research partners



Research design and outcomes



Assessment of current climate change risk and vulnerability assessment frameworks and practices

The IPCC conceptualisation of physical climate risks

The "Impact Chain" (IC) framework

Research innovations of the UNCHAIN project

11 UNCHAIN case-studies

Tested and recommended improvements of climate change risk and vulnerability assessment frameworks



4 journal articles

Article Type: Research Article
 Climate Change Impact Chains: A Review of Applications, Challenges, and Opportunities for Climate Risk and Vulnerability Assessments
 Ljiljana Menk, Stefano Terzi, Marc Zebisch, Erich Rame, Daniel Lickert, Katharina Milde, and Stefan Kienberger
 Online Publication: 09 Jun 2022
 Print Publication: 04 Apr 2022
 Collection: Sustainable Climate Change Adaptation
 DOI: https://doi.org/10.1177/1754401322109343
 Pp: 1-15

11 case reports



14 journal articles

ORIGINAL RESEARCH article
 Rhine low water crisis: From individual adaptation possibilities to strategical pathways
 Julie Gobet¹ and Florence Rueloff²
 Introduction: In 2018, the Rhine transport sector experienced an unprecedented low water crisis, during which large cargo vessels were no longer able to navigate on certain sections of the river. This led to a major disruption in inland waterway transport. This article aims at questioning how the crisis acted as a stimulus for port authorities and their customers to consider the risks for their assets and operations and as a window of opportunity for creating a new collective and for defining 'solutions'.



1 journal article

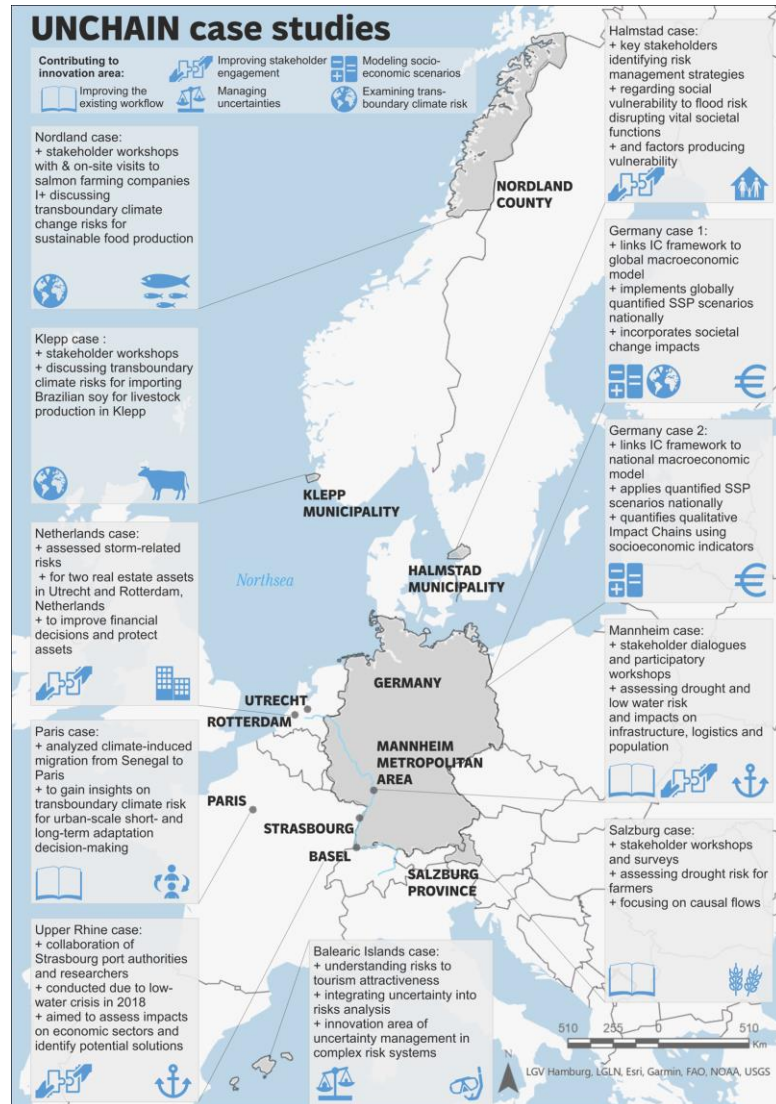
RESEARCH article
 Research advancements for impact chain based climate risk and vulnerability assessments
 This article is part of the Research Topic
 Research on the Impacts of Climate Change on Infrastructure Assets

Research topics and innovations



- **Societal transformation**
 - As opposite to ‘adjustments of society’, implying “(t)he altering of fundamental attributes of a system (including value systems; regulatory, legislative, or bureaucratic regimes; financial institutions; and technological or biological systems)” (IPCC, 2012:4)
- **Co-production of knowledge (CPK)**
 - Systematically integrate CPK into Impact Chain modelling to better account for different views on desirable and equitable climate resilient futures
- **Societal change**
 - Accepting that CC adaptation needs to go beyond projections from deterministic or probabilistic climate models, and must include also scenarios for societal, economic and political development (Moss et al, 2010)
- **Climate uncertainty**
 - Rather than trying to ‘master’ uncertainty, develop ways to better ‘manage’ it (Schneider and Kuntz-Duriseti, 2002)
- **Transboundary climate risks**
 - Expanding the logic of Impact Chain to include also ‘imported’ (from other countries) climate risks (Benzie et al, 2016)
- **Linking mitigation and adaptation**
 - As both mitigation and adaptation efforts are expected to gradually become more substantial, it is reasonable to expect that negative interaction between the two streams of action will increasingly occur (Santarius et al, 2016)

The UNCHAIN cases



Source: Petutschnig et al. (2023)


Recommendations

- **Co-production**
 - Policymakers and relevant stakeholders should engage throughout the climate risk assessment process, to co-develop climate information and solutions that capture their needs, knowledge and perspectives and that account for social vulnerability and equitable adaptation.
- **Smartness**
 - Policymakers can make adaptation “smarter” by using the Impact Chain approach to analyse both conventional local climate risks and lesser well-known transboundary climate risks.
- **Uncertainty**
 - Policymakers should embrace uncertainties by applying a reflect-then-act rather than the predict-then-act approach
- **Societal change**
 - Policymakers should systematically include socio-economic scenarios for a range of possible developments in the same way as scenarios for climate change when analyzing climate risk
- **Transboundary climate risks**
 - International actors can invest in method innovation, data collection and decision-support tools to identify and assess transboundary climate risks. They should also foster greater cooperation in adaptation planning and implementation across jurisdictions.



<https://www.sei.org/wp-content/uploads/2023/06/unchain-eu-action-brief-sei2023.035.pdf>

More information

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UNCHAIN - Unpacking climate Impact Chains

Recent uploads

May 4, 2020 (v1) **Project deliverable** **Restricted Access**

Case study n° 5: Agricultural drought in the light of climate change. The case of Austria (Brief internal note)(D3.1.5)

Leitner, Markus; Kienberger, Stefan;

Brief description of the case study no°5, issued to the stakeholders involved in the case.

Uploaded on February 20, 2023

February 17, 2023 (v1) **Poster** **Closed Access**

Factsheet: Case 7: Grenseoverskridende klimarisiko: En studie av oppdrettsbedrifter i Nordland

Brigt Dale;

Matproduksjon er en viktig levevei i Nordland fylke, både til lands og til havs. Fiskeri, landbruk og havbruk er viktige bidragsyttere ikke bare til økonomisk velstand, men også til bosetting langs kysten, som kulturbærere og ikke minst som betydelige bidragsyttere&n

Uploaded on February 17, 2023

February 17, 2023 (v1) **Presentation** **Closed Access**


Securing sustainable food production in Northern Norway under the auspices of climatic changes

Brigt Dale;

Aquaculture is an important industry in the County of Nordland, Norway. All along the coast, communities are embedded, both economically, structurally and culturally to the industry – in a region where climate change already rears its head as more stormy weather, increased precipitation, warme

Uploaded on February 17, 2023

Community



UNCHAIN - Unpacking climate Impact Chains

The project "Unpacking climate Impact Chains - a new generation of climate change risk assessments" (UNCHAIN) overall objective is to improve climate change risk assessment frameworks for informed decision-making and action related to climate change adaptation action. The research approach is based on the recent concepts of Impact Chain and co-production of knowledge.

The project UNCHAIN is part of AXIS, an ERA-NET initiated by JPI Climate, and funded by FORMAS (SE), DLR/BMBF (D), AEI (ES) and ANR (FR) with co-funding by the European Union.

Grant Agreement Number: 776608

Duration: 09/2019 - 03/2023

Website: www.unchain.no

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