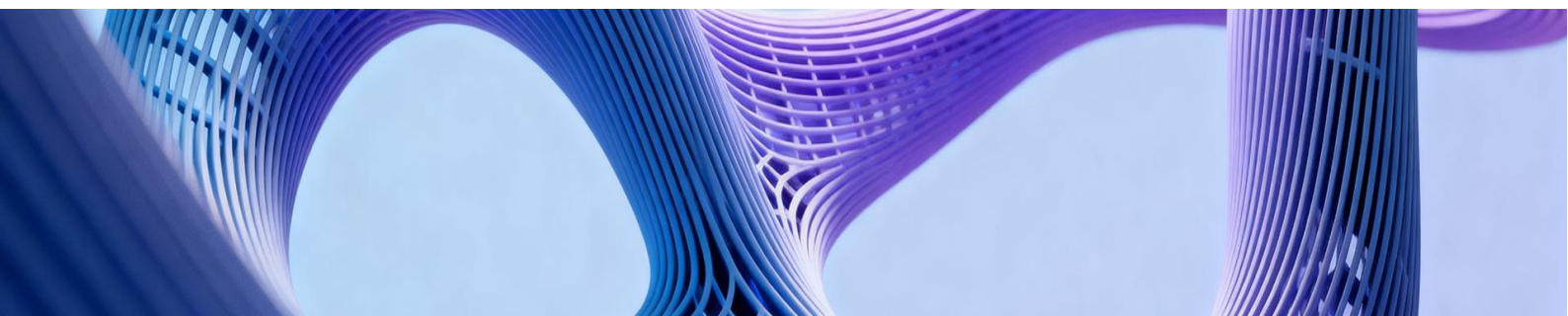


## **NEEDS 2026 Conference**

# Societal Resilience in Times of Cascading Crises and Disasters

## **BOOK OF ABSTRACTS**

28–30th of April 2026,  
Kaunas, Lithuania



# Table of contents

Organizers .....	3
Preface .....	4
Program .....	5
Abstracts .....	7
Keynote presentations.....	7
Parallel sessions 1.1.-1.3   Workshop 1 .....	11
Parallel sessions 2.1.-2.3   Workshop 2   Co-creation session .....	17
Parallel sessions 3.1.-3.2   Roundtable discussion 1   Simulation 1 .....	26
Parallel sessions 4.1.-4.4 .....	32
Parallel sessions 5.1.-5.3   Roundtable discussion 2   Workshop 3.....	42
Parallel sessions 6.1.-6.2   Roundtable discussion 3   Simulation 2 .....	51
Parallel sessions 7.1.-7.4   Workshop 4 .....	58
Parallel sessions 8.1.-8.2   Roundtable discussion 4   Simulation 3 .....	69

# Organizers

## **Scientific Committee:**

1. Aistė Balžekienė, Kaunas University of Technology, Lithuania, chair of the committee
2. Andrea Bartolucci, Leiden University, the Netherlands
3. Nathan Edward Clark, Vrije University Amsterdam, the Netherlands
4. Francesca Giardini, University of Groningen, the Netherlands
5. Eefje Hendriks, University of Twente, the Netherlands
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7. Emmanuel Raju, University of Copenhagen, Denmark
8. Jörgen Sparf, Mid-Sweden University, Sweden and Norwegian University of Science and Technology, Norway

## **Local organizing committee, Kaunas University of Technology (Lithuania):**

1. Aistė Balžekienė, chair of the committee
2. Natalia Beldyga, scientific content, special sessions
3. Audronė Daubarienė, English editing for the book of abstracts
4. Jurgita Jurkevičienė, layout of abstract book
5. Jūratė Korkuzienė, coordination of catering
6. Kamilė Mončytė, website, communication, volunteer teams
7. Rugilė Nabažienė, finances
8. Ineta Simonaitė, venue, registration
9. Ulrika Varankaitė, communication, coordination

**Conference website:** <https://needs.ktu.edu/>

## Preface



*Prof. Aistė Balžekienė (Chair, NEEDS2026 committee, Kaunas University of Technology, Lithuania)*

The conference of The Network of European Emergency and Disaster Studies (NEEDS) is organised for the 8th time and the first time in the Baltic region. What really makes NEEDS different is its multidisciplinary approach. It is grounded in the social sciences, but it brings together ideas and research from a wide range of disciplines to examine disaster-related challenges from a European perspective.

The title of this year's conference is *Societal Resilience in Times of Cascading Crises and Disasters*. We have decided to focus the conference on *cascading* crises and disasters as we are increasingly witnessing events that trigger interconnected failures across systems, even when distant in time and space.

Another key theme of this conference is *societal resilience*. The Baltic states — and Lithuania in particular — are a very meaningful place to have this conversation. The region brings a unique perspective, shaped by its historical memory at the crossroads of the front lines, its proximity to the aggressor country, and its exposure to other complex challenges—from environmental issues such as pollution in the Baltic Sea to the growing reality of hybrid threats. But also, the Baltic states are great examples of nonviolent resistance, a strong national and environmental identity and rapid transition. Societal resilience is an answer to uncertainty and threats. It is the importance of grassroots and bottom-up initiatives. It is the awareness and understanding that the responsibility for the future does not belong just to national or international institutions but is also shared by individuals and communities.

Famous German Sociologist Ulrich Beck in his last book *Metamorphosis*, wrote: “Actively doing nothing is the cheapest, most effective, and most powerful political strategy to simulate the controllability of uncontrollable risks and open-ended catastrophes, such as radiation or climate change”. And this is the quote from Lithuanian resistance movement: "Courage isn't the absence of fear; it's the determination to act despite it". I believe the role of contemporary science is the determination to act.

The NEEDS2026 conference welcomed more than 130 participants from 26 countries. The conference programme included around 100 presentations, roundtable discussions, workshops and crisis simulations. This abstract book reflects current interdisciplinary scholarship on resilience, cascading crises and emergency management.

# Program

## Societal Resilience in Times of Cascading Crises and Disasters

Kaunas University of Technology, Faculty of Social Sciences, Arts and Humanities, A. Mickevičiaus str. 37, Kaunas

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### April 28<sup>th</sup>

8:00-9:00 Conference registration

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#### Opening session, Room 202 (Aula)

##### Welcome

**Prof. Eugenijus Valatka**, Rector, Kaunas University of Technology

9:00-10:30

**Prof. Aistė Balžekienė**, Chair, NEEDS2026 committee, Kaunas University of Technology

**Dr. Nathan Clark**, Network of European Emergency and Disaster Studies, Vrije University Amsterdam

**Dr. Farid Karimi**, Project leader, Horizon Europe DeCrises, University of Jyväskylä

##### Keynote I

**Prof. Chris White**, Professor, University of Strathclyde, United Kingdom

**Assessing the Cascading Impacts of Natural Hazards on Critical National Infrastructure**

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10:30-11:00 Coffee break

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#### Parallel sessions 1.1 – 1.3

11:00-12:30

**1.1. Climate Adaptation and Flood Risk**

**1.2. Community Resilience in Practice**

**1.3. Governance for Resilient Futures**

**Workshop** (Nathan Clark): Workshop on Approaches for Engaging Younger Generations in Disaster Resilience

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12:30-13:30 Lunch break (provided on-site, vegan options included)

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#### Parallel sessions 2.1 – 2.3

13:30-15:00

**2.1. Trust and Resilience in Crisis**

**2.2. Technological Innovation for Disaster Reduction**

**2.3. Urban and Local Resilience in Times of Polycrisis**

**Workshop** (Verena Flörchinger): Community Resilience in Polycrisis: Transdisciplinary Approaches to Strengthening Crisis and Disaster Management

**Co-creation session** (Andrew Powell): Co-Producing Risk Using Digitally Mediated Conversation Analysis and Discursive Psychology

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15:00-15:30 Coffee break

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#### Parallel sessions 3.1 – 3.2

15:30-17:00

**3.1. Diversity, Equity and Disability-Inclusive DRM**

**3.2. Conflict and Complex Emergencies**

**Roundtable discussion** (Lauren Traczykowski): Underrepresented Topics in Disaster Education: Disciplines that Global Disaster Curricula Often Leave Out

**Simulation** (Kati Orru): Disaster Preparedness Capacity Development: A Scenario-Based Exercise for Social Vulnerability Reduction

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### April 29<sup>th</sup>

8:30-9:00 Conference registration

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#### Keynote II

9:00-10:00

**Dr. Fabia Hüsler**, Head of National Drought Program, Federal Office for the Environment FOEN, Switzerland

**From Early Warnings to Action: How Scenario-Based Simulation Exercises Strengthen Drought Preparedness**

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10:00-10:30	Coffee break
	<b>Parallel sessions 4.1 – 4.4</b>
10:30-12:30	<b>4.1. Displacement Dynamics and Refugee Integration Strategies</b> <b>4.2. Technological Innovation for DRR</b> <b>4.3. Perception, Trust, and Recovery in Complex Disaster Contexts</b> <b>4.4. Economic Resilience and Postdisaster Reconstruction</b>
12:30-13:30	Lunch break
	<b>Parallel sessions 5.1 – 5.3</b>
13:30-15:00	<b>5.1. Volunteering and Civic Engagement</b> <b>5.2. Health, Preparedness, and Community Resilience</b> <b>5.3. Preparedness Frameworks and Capacities</b> <b>Roundtable discussion</b> (Robert Larruina): The Power from Below: Grassroots Organising in Times of Polycrisis <b>Workshop</b> (Holly Faulkner): Multi-Criteria Decision-Making as a Decision-Support Tool for Building Disaster Resilience: Role-Play Exercise in Roskilde Fjord, Denmark
15:00-15:30	Coffee break
	<b>Parallel sessions 6.1 – 6.2</b>
15:30-17:00	<b>6.1. Community Knowledge and Informal Systems in Disaster Resilience</b> <b>6.2. Communication Systems and Trust</b> <b>Roundtable discussion</b> (Farid Karimi): Multilevel Governance for Decarbonisation in Times of Crises <b>Simulation</b> (Bart Blokland): Scenario-Based Exercise: Interdisciplinary Response During a Multi-hazard Crisis
<b>April 30<sup>th</sup></b>	
	<b>Parallel sessions 7.1 – 7.4</b>
9:00-10:30	<b>7.1. Societal Resilience and Crisis Preparedness</b> <b>7.2. Foresight and Risk Governance</b> <b>7.3. Vulnerability in Displaced and At-Risk Populations</b> <b>7.4. Democratic Resilience and Politics</b> <b>Workshop (Computer class)</b> (Francesca Sabatini): SYNERGIES ATLAS – The Platform for Empowering Participation in Disaster Risk Reduction and Management (20 places)
	<b>Parallel sessions 8.1 – 8.2</b>
10:45-12:15	<b>8.1. Strategic Foresight for DRR</b> <b>8.2. Education, Participation, and Societal Resilience</b> <b>Roundtable discussion</b> (Toni Collins): Regulating for Resilience: Developing Governance Frameworks for Early Action <b>Simulation</b> (Audronė Telešienė): Scenario-Based Simulation of Cascading Crises in Complex Risk Environment
12:15-12:45	Coffee break
	<b>Keynote III</b>
12:45-13:45	<b>Dr. Ieva Gajauskaitė</b> , Head of Division within the Total Defence and Crisis Management Group at the Ministry of National Defence, Lithuania <b>Resilience by Design during Polycrisis Era: Lithuania's Next Steps Toward a Total Defence Posture and Comprehensive Crisis Management</b>
13:45-14:00	Closing session

# Abstracts

## Keynote presentations

### Assessing the Cascading Impacts of Natural Hazards on Critical National Infrastructure (CNI)



*Dr. Chris White (University of Strathclyde, UK)*

The level of the impacts caused by climate extremes can be determined by the physical interconnections between different phenomena and how these impacts then compound across spatial and temporal scales and cascade through our built infrastructure systems and networks. Our climate is warming rapidly, meaning these interconnected and cascading events and the risks they pose are projected to increase in both severity and frequency. Current approaches to predicting, assessing and managing interconnected cascading risks typically ignore these interactions, in part or in full. As a result, the possible magnitude of their impacts and true nature of risk can be significantly underestimated. The IPCC's latest assessment report identified these 'complex hazards and risks' as the largest gap in climate adaptation knowledge. This presentation will explore some of the latest approaches towards identifying, assessing and predicting interconnected compounding events and their cascading impacts. It will draw on findings from ongoing Scottish, UK and international activities and initiatives focused on these complex interconnections, and explore how systems thinking is being implemented, including in the next UK climate change risk assessment due in 2026 (CCRA4). We will then explore the cross-sectoral cascading impacts of extreme weather events on Critical National Infrastructure (CNI) as a case study to evidence the interconnected vulnerabilities across energy, water, transport and telecommunications. Using Storm Éowyn from 2025, cross-sectoral disruptions and impacts to Scotland's CNI are explored through a co-designed workshop and survey. We will identify key dependencies on electricity and telecommunications infrastructure, providing vital evidence to inform future preparedness strategies for climate-resilient CNI. Examples of recent assessment advances, the development of new multi-hazard scenarios that consider physically-plausible worst case combinations of events to help manage complex hazards and risks, and the move towards multi-hazard early warning systems (MHEWS) that incorporate systems thinking and interconnected risks.

## From Early Warnings to Action: How Scenario-Based Simulation Exercises Strengthen Drought Preparedness



*Dr. Fabia Hüsler (Federal Office for the Environment FOEN, Switzerland)*

Switzerland's newly established drought monitoring and early-warning system forms the cornerstone of proactive drought management, shifting the focus from reactive crisis response to anticipatory action. By providing timely and accurate information and forecasts on drought development, it enables decision-makers to implement measures that reduce impacts. Yet, a persistent challenge remains: translating early warnings and information into efficient and coordinated action. An effective method for addressing this challenge is the use of exercises that simulate escalating drought scenarios. They bridge the gap between formal knowledge and real-world experience by allowing organizations to test early warning systems, plans, roles, and decision-making in a realistic but low-risk environment. Such simulations reveal strengths and weaknesses in existing structures, foster institutional learning, and enhance cooperation across local, regional, and national levels. Experiences from such exercises in Switzerland show that they provide essential insights for improving both strategic and operational readiness. The keynote will present the new drought monitoring and early warning system, the drought exercise set-up as well as concrete lessons learned from recent Swiss exercises. Based on that, practical recommendations to enhance drought preparedness nationally and internationally will be outlined.

## Resilience by Design during Polycrisis Era: Lithuania's Next Steps Toward a Total Defence Posture and Comprehensive Crisis Management



*Dr. Ieva Gajauskaitė (Ministry of National Defence, Lithuania)*

The contemporary security environment is increasingly shaped not only by conventional military risks, but also by intensifying hybrid threats that simultaneously target the state and society. Like other frontline democracies, Lithuania faces mounting hybrid threats in the form of cyberattacks, disinformation campaigns, hostile influence operations, instrumentalized migration, disruption of essential services, critical infrastructure sabotage, economic pressure, and persistent attempts to exploit social polarization and institutional vulnerabilities. Such threats are deliberately calibrated to remain below the threshold of open warfare while gradually eroding governance capacity, public trust, and social cohesion. In the broader context of the polycrisis era, in which natural and human-made risks related to security, energy, health, technology, the environment, and the cognitive domain increasingly intersect, resilience can no longer be understood as merely a reactive or sector-specific function. Rather, resilience in peacetime must be embedded by design into national security architecture, crisis governance, and societal preparedness in order to strengthen the capacity of both the state and society to withstand military and non-military threats in wartime.

Against this backdrop, Lithuania's evolving total defence posture reflects an effort to adapt to an increasingly aggressive and polycrisis security environment by integrating multiple dimensions of resilience. The objective is not only to safeguard statehood, but also to mitigate the impact of a broad spectrum of threats that directly affect the well-being of society. In strengthening its resilience, Lithuania has increasingly embraced both a whole-of-government and a whole-of-society approach. This is manifested in the development of a more integrated comprehensive crisis management model, a coordinated framework for civilian and military preparedness, and the active involvement of society in crisis management through the promotion of individual responsibility, non-governmental engagement, and volunteerism. Within the broader framework of total defence, Lithuania is also advancing a civil defence concept, preparing an action plan to counter disinformation, conducting national mobilization exercises, and expanding public training in resilience to hybrid threats and civic resistance. The range of strategic decisions, policy measures, and action plans underpinning this resilience-by-design approach is extensive.

A wide array of actors contributes to the development of total defence and comprehensive crisis management in Lithuania, including state institutions, municipalities, local communities, non-governmental organizations, and individual civic initiatives. Yet Lithuania is constructing this system not under conditions of stability and enduring peace, but amid persistent and growing pressure. These

challenges are amplified not only by shifts in the security environment and broader geopolitical turbulence, but also by rapid technological transformation. For this very reason, Lithuania's experience is significant: resilience by design is being built not as an abstract ideal, but as a practical response to continuous uncertainty and strategic exposure. Although much remains fragmented, incomplete, and still to be institutionalized, the cumulative effect of everyday resilience measures is already contributing to the emergence of a more resilient state and a more resilient society. Resilience in the polycrisis era can be deliberately cultivated, expanded, and sustained step by step.

## 1.1. Climate Adaptation and Flood Risk

### Central-European Countries' Resilience to Common Shocks: The Case of Multiple Floods

Marco Modica (*Gran Sasso Science Institute*), Giulio Breglia (*Gran Sasso Science Institute*), Davide Dimarcoberardino (*Università di Macerata*)

This paper investigates the economic resilience of Central-European regions to large-scale hydrogeological shocks, focusing on the major transnational floods of 2013 and 2016. These events, affecting substantial portions of the Danube and Elbe River basins, provide a unique setting to examine how regional economies respond to common shocks under heterogeneous institutional and geographical conditions. Building on the literature on regional resilience and border-region dynamics, we explore whether NUTS-3 territories located along national borders exhibit different medium-term recovery patterns relative to interior regions. Using a panel of nearly 16,000 regional-year observations from Eurostat, EM-DAT, and HANZE, we estimate a triple difference-in-differences model that isolates the interaction between flood exposure, post-event dynamics, and border status, while controlling for NUTS-2 fixed effects and common macro trends. Results show that the 2013 floods had a negative and significant impact on GDP growth, whereas the 2016 event produced no clear adverse effect.

Across both episodes, border regions display a modest but positive resilience premium, which becomes statistically significant when the bordering territory is also affected by the flood. Additional restricted-sample DiD checks confirm this finding. The analysis underscores the importance of cross-border governance and institutional coordination in shaping regional economic recovery from transnational disasters.

**Keywords:** floods, heterogenous effects, bordering.

### Flood After Flood: Mapping Social Norm Evolution in At-Risk Communities: the case-study of Bagnacavallo (Ravenna, Italy)

Alexandra D'Angelo (*Institute for Cognitive Sciences and Technologies (ISTC) - National Council of Research (CNR)*), Laura Marcon (*Institute for Cognitive Sciences and Technologies (ISTC) - CNR*), Giulia Andrighetto (*Institute for Cognitive Sciences and Technologies (ISTC) - CNR*), Marcello Petitta (*University of Roma Tre*), Sara Gil Gallen (*Institute for Cognitive Sciences and Technologies (ISTC) - National Council of Research (CNR)*), Eva Vriens (*Institute for Cognitive Sciences and Technologies (ISTC) - National Council of Research (CNR)*)

Since 2023, the Italian region of Emilia-Romagna has experienced a series of catastrophic flooding events that exemplify the dynamics of recurrent and cascading crises. In May 2023 alone, two severe floods occurring just few days apart (1–2 May and 16–17 May) led to the overflow of 23 rivers and triggered more than 400 landslides, affecting 123 municipalities. These events resulted in 17 fatalities and left approximately 10,000 people without habitable dwellings. Flooding recurred in September 2024, when the Lamone River breached its levees once again, destroying several homes. Additional localized flash floods followed in October–November 2024 and March 2025.

This study is part of a broader research project – Norms@Risk – which explores the role of social norms in promoting cooperation to address collective risks related to natural and environmental emergencies. We conducted three focus groups and one survey in Bagnacavallo, a small town in the province of

Ravenna that was repeatedly and severely affected by the flooding events. Beyond material losses, recurrent flooding also generated lasting psychological impacts, including heightened uncertainty, persistent fear, and the gradual adaptation of daily routines to what residents increasingly perceive as a new “normality”.

In this context, our study examines the extent to which repeated disasters reshape not only the physical landscape but also social behaviours and collective attitudes. Specifically, we investigate: (a) levels of risk perception and their evolution over time; (b) dynamics of cooperation and conflict within the affected community and how these dynamics change during and after the time of emergency; and (c) the degree to which climate change is recognized as a driver of increasingly frequent and intense extreme events.

Overall, results suggest that recurrent disasters function not only as acute shocks but as long-term social stressors, reshaping collective behaviour, perceptions of risk and vulnerability, and complex social dynamics marked by the entanglement of cooperation, conflict, and institutional distrust.

**Keywords:** floods, risk perception, collective behaviours, Italy.

### **Educating for Flood Resilience: Co-Developing Effective and Inclusive School-Based Approaches with Children, Young People, and Educators**

*Rebeca Cruz (Loughborough University)*

In a world where the effects of climate-related flooding are increasing in frequency and intensity, and where flooding-related deaths exceed those of all other disasters, it is crucial to explore new ways to raise society's flood awareness and preparedness. Yet, despite being perceived as among the most vulnerable groups to climate-related disasters, children and young people (CYP) are often excluded from flood education and disaster risk reduction (DRR) processes (Peek, 2008; Duffner et al., 2025). Their inclusion and education can both empower them to keep themselves safe and help them build societal resilience through intergenerational exchanges with the adult communities around them.

By centring the diverse experiences and perspectives of children, young people, and educators, this participatory action-research project asks: What does effective and inclusive school-based flood education consist of? What knowledge, skills, and attitudes must education systems foster to ensure CYP can keep themselves physically, psychologically and emotionally safe from flooding, and what do educators need to develop such attributes, instilling critical awareness and behavioural change? Finally, what do CYP themselves need to be able to discuss and share key knowledge with their families to help them understand and prepare for flood-related risks?

Drawing on preliminary findings from co-production processes – including qualitative interviews and creative workshops – with CYP, educators, civil servants, England’s Environment Agency staff, DRR practitioners and academics in the UK, the presentation will provide insights into these questions. It will highlight the opportunities and challenges in developing inclusive, capability-based flood education approaches and outline early directions to improve how education systems prepare CYP for a future of increasing flood risk.

**Keywords:** flood education, children and young people (CYP), inclusion, disaster risk reduction DRR, co-production.

## 1.2. Community Resilience in Practice

### Creating Democratic Resilience through Heritage and Nature Volunteering

*Thomas Bryer (University of Central Florida)*

Capacity to respond to and recover from cascading crises relies on the strength of a society's or community's democratic foundations. This article identifies a process whereby democratic resilience can be enabled, cultivated, and activated. Lessons are based on an 18-month embedded research project in the National Park Service of the United States. The research focused on the motivation and impact of volunteers serving in heritage and nature parks; one of the areas of impact was on democracy. Volunteers who come from across demographic groups in the population report their ability to calm tensions, engage in civil discourse, create empathy, and develop a sense among visitors that the country is one country, thus deemphasizing and showing an alternative to the politics of demonization that threaten the society's overall resilience and capacity to respond to and recover from crises. Data are drawn from interviews with 205 park service volunteers and staff across 42 park locations in the United States, which represent approximately 10% of all National Park Service sites. They include heritage and historical sites, cultural sites, and wilderness preservation sites. The article also includes discussion of recently enacted rules and regulations that restrict the ability of volunteers and staff to achieve democratic impact through their interactions with visitors to parks. Overall, the article identifies one powerful source of democratic resilience and suggests how other societies outside the United States can learn from the example.

**Keywords:** democratic resilience, heritage volunteering, environmental volunteering.

### Societal Psychological Resilience Following the COVID-19 Pandemic in the Netherlands: Average Scores and Associated Factors

*Imme Rahmon (National Institute for Public Health and the Environment), Elske Marra (National Institute for Public Health and the Environment, Bilthoven), Mark Bosmans (Nivel, Utrecht), Michel Dückers (University of Groningen)*

**Background:** Building a resilient society post- COVID-19 pandemic is a key priority. However, its relationship with psychological resilience – the ability to recover from such adversity – remains unknown.

**Methods:** We used data from a COVID-19 disaster health survey among Dutch youth (12-25 years, N = 5,411) and adults (26+ years, N = 7,001) in December 2024, in which psychological resilience was assessed with the Brief Resilience Scale (BRS). Average BRS scores were presented as mean (youth) and median (adults) scores. Multivariable linear (youth) and generalized linear (adults) regression analyses were performed to study risk factors for lower BRS scores.

**Results:** For youth, the mean BRS score was  $3.23 \pm 0.74$ , while for adults the median BRS score was 3.5 [3.0-4.0]. Being a woman or non-binary, little artistic interest, nervousness, lower self-perceived health, distrust in the future, poor psychological well-being, frequent stress (from school/work or tasks), suicidal thoughts, loneliness, and frequent irritability and fatigue were significantly linked to lower psychological resilience in both youth and adults. Additional significant factors for youth included low educational level, a tendency toward laziness, and stress due to others' opinions, while for adults these

were younger age (29-35 years), a reserved personality, and frequent memory or concentration problems. COVID-19-related losses and other stressors were not related to psychological resilience.

Conclusion: One and a half years after the COVID-19 pandemic, youth showed lower psychological resilience than adults. The results are consistent with a review of studies conducted before the COVID-19 pandemic that also used the BRS. The univariable effect of COVID-19-related factors lowering BRS scores was mitigated by specific demographics, introverted or passive personality traits, and health and well-being indicators in multivariable models. Post-pandemic, resilience-building programs should focus on these intrinsic factors rather than contextual stressors linked to the pandemic to better support vulnerable groups.

**Keywords:** societal resilience, psychological, COVID-19 pandemic, Brief Resilience Scale, risk factor analysis.

### **Families as Peacebuilders: Dialogue, Trust, and Belonging**

*Tetiana Vasylykevych (NGO Open Nations), Svitlana Zaluzhna (NGO Open Nations), Iryna Pashkevych (NGO Open Nations)*

In contexts affected by war and forced displacement, rebuilding trust is not only a political or institutional task – it begins within families and local communities. This presentation explores a family-centred peacebuilding approach that positions families as active agents of social cohesion, dialogue, and long-term resilience.

Drawing on practical experience from community-based initiatives implemented in Lithuania, Ukraine, and Norway, we examine how structured intercultural dialogue, shared storytelling, and family-oriented educational programs can restore a sense of belonging in fragmented societies. Particular attention is given to migration contexts, where families navigate trauma, identity reconstruction, and integration simultaneously.

The presentation introduces a practice-based model that integrates humane pedagogy, intergenerational dialogue, and community participation. Through real-world case examples – including family camps and dialogue platforms – we demonstrate how safe relational spaces foster empathy, reduce polarisation and strengthen democratic resilience at the grassroots level.

Balancing conceptual framing with applied insights, this contribution offers practical tools for researchers, practitioners, and policymakers interested in sustainable peacebuilding approaches rooted in family systems. It argues that investing in families as relational ecosystems can generate long-term social trust and contribute meaningfully to post-conflict recovery and integration processes.

**Keywords:** peace building, social cohesion, sense of belonging, long - term resilience.

### **1.3. Governance for Resilient Futures**

#### **Beyond Fragility: (Re)Humanising Disaster Risk Governance in South Sudan and Somalia**

*Katie Peters (University of Cambridge)*

Achieving sustainability in conflict-affected contexts requires parallel progress in disaster resilience and peacebuilding. Yet despite facing some of the world's most acute climate and disaster risks, communities living amid protracted conflict remain served by disaster risk governance (DRG) systems

that are under-resourced, externally driven, and frequently misaligned with lived vulnerabilities. This misalignment is sustained in part through persistent “failed” and “fragile” state discourses, which continue to shape international policy and practice despite extensive critique.

This paper applies a critical, decolonial lens to examine how disasters are mobilised as evidence of state failure, normalising particular expectations of state performance and, by extension, of DRG. These framings are not merely rhetorical: they carry material consequences, shaping financing modalities, institutional design, and the routine bypassing of state actors in the name of efficiency or risk management. Drawing on empirical insights from elite interviews conducted using a conference-based method at multi-sited intergovernmental forums, the paper explores how labels of fragility are experienced, negotiated, and contested by individuals working within DRG institutions in South Sudan and Somalia.

Rather than rejecting the state outright or reproducing state-centric assumptions, the paper advances a (re)humanising approach to DRG analysis. This perspective recentres the lived experiences, relational labour, and constrained agency of civil servants and officials operating within highly politicised and resource-scarce environments. It shows how fragility narratives often obscure everyday practices of governance, adaptation, and care that sustain disaster response and risk reduction under conditions of conflict.

By foregrounding human experience within institutional processes, the paper contributes to broader decolonial efforts to move beyond extractive policy logics and technocratic resilience frameworks. It argues that more grounded, relational, and context-sensitive approaches to DRG are essential for advancing sustainability and peace in conflict-affected settings too often written off as beyond repair.

**Keywords:** disaster risk governance, conflict, failed state.

## **Building Societal Resilience through Eco-Social Policies: Carbon Taxation Scenarios in Lithuania**

*Ulijona Kaklauskaitė (Vilnius University)*

Climate change increasingly interacts with social, economic, and geopolitical pressures, creating cascading risks that test how well welfare states can support resilient societies. In the Baltic region, where environmental vulnerabilities intersect with wider uncertainties, questions about how social protection systems can contribute to both climate mitigation and social justice become especially urgent. This paper examines how the Lithuanian welfare state is being reshaped under conditions of climate risk and explores whether eco-social policy can balance ecological goals with fairness. Carbon taxation is used as a central case because it directly exposes how climate policies distribute costs and benefits across different social groups.

The study employs the EUROMOD microsimulation model, utilizing Lithuanian household data, and evaluates several carbon tax scenarios through the lens of a “quadruple d”. This approach assesses ecological impact, distributional fairness, political acceptability, and the capacity to mobilise resources for green investment – four elements that are crucial for building societal resilience. Moving beyond theoretical debate, the analysis considers how fiscal instruments function within a context of interlinked and escalating risks.

The findings indicate that a uniform carbon tax without revenue redistribution is regressive, placing a disproportionate burden on low-income households. Such an approach risks eroding social cohesion

and political legitimacy – two factors essential for resilience. When revenues are returned to the population through progressive transfers or social dividends, the regressive effect is reduced or even reversed. These designs appear more equitable, more publicly acceptable, and enable the state to direct resources.

**Keywords:** climate risk society, welfare state, eco-social policy, carbon taxation, Lithuania.

### **Community Resilience for Disaster Risk Reduction: Perspectives from NGO Workers in New Orleans**

*Kim-Anh Anastasia Chau (University College London)*

In the aftermath of Hurricane Katrina, the concept of community resilience has been increasingly used to guide disaster management at the international, national, and local levels. However, the term remains ill-defined, lacks a common conceptualisation, and suffers measurement issues. In addition, there is little understanding of how local actors understand and perceive the resilience of their own community. This presentation will present the findings from a study focused on New Orleans, weaving together the literature and interviews with workers at non-governmental organisations on their understanding and perception of community resilience. In doing so, this paper presents a place-based framework to community resilience which centres around five elements: preparedness, leadership, resources, community, and spirituality. This presentation will end with the limitations of the concept and reframe the place of community resilience in the wider disaster risk reduction strategy.

**Keywords:** community resilience, New Orleans, Katrina, NGO.

### **Workshop on Approaches for Engaging Younger Generations in Disaster Resilience**

*Nathan Clark (Vrije University Amsterdam), Kati Orru (University of Tartu), Sten Hansson (University of Tartu), Cristina Casareale (Save the Children Italy), Kees Boersma (Vrije Universiteit Amsterdam)*

This workshop aims to explore studies, innovative ideas, and experiences around educational approaches and training programmes for strengthening awareness, preparedness, response and coping capacities to hazard risks and impacts, including crucial bridges across DRR and CCA, among younger generations. Particular attention is given to vulnerable and diverse youth populations, applying an intersectional lens to understand how educational approaches consider age, gender, socio-economic status, digital access, and other factors which may shape behaviours towards resilience actions. The workshop will also explore “potentials and perils” around the integration of digital tools and environments for learning, that is opportunities and benefits of digital approaches and innovations for engaging youth, alongside emerging risks and unintended consequences. Finally, the workshop will examine upscaling pathways (and potential ethical issues) around the integration of youth-generated knowledge, data, and actions into crisis management processes and governance (e.g., civil protection frameworks).

The workshop invites both researchers and practitioners to participate in interactive discussions around several key questions including What do we already know about engaging youth in DRR/CCA? What are current practices in e.g., formal vs informal education, vulnerable or marginalised youth engagement, digital tools: empowerment vs exclusion, youth participation vs tokenism? What is

missing from current knowledge or practice? And many more important questions. We invite you to join the workshop to share your ideas, experiences, case studies, etc., to the discussions.

**Keywords:** DRR, CCA, preparedness, education, youth, engagement, resilience.

*Parallel sessions 2.1.-2.3 | Workshop 2 | Co-creation session*

## **2.1. Trust and Resilience in Crisis**

### **Transformation of Social Trust and Resilience in Local Communities in Crises**

*Yaroslava Hlushchenko (National Technical University of Ukraine), Igor Sikorsky (Kyiv Polytechnic University), Olena Korohodova (National Technical University of Ukraine), Natalya Chernenko (National Technical University of Ukraine)*

In the framework of a Polish-Ukrainian international project dedicated to assessing the capacity of local communities to withstand and respond to crisis situations, an empirical study was conducted using a survey method among representatives of territorial communities of the Bucha District, Kyiv Region and of the Poznań County. The questionnaire, developed by Polish researchers and adapted by Ukrainian scholars to local conditions, was a multi-dimensional instrument covering: community characteristics and social ties; resilience, preparedness, and crisis response; resources and infrastructure; leadership and management; communication and information; demography and mobility; safety perceptions; and respondents' socio-demographic characteristics.

A key analytical focus of the study is a comparative assessment of perceptions before the full-scale invasion of the Russian Federation against Ukraine (prior to February 24, 2022) and at the present stage. The results reveal a significant transformation in respondents' evaluations of preparedness across different actors, including households, social networks, local self-government bodies, state institutions, emergency and security services, non-governmental organizations, and volunteer initiatives.

Prior to the full-scale invasion, perceptions were characterized by a high level of uncertainty and limited institutional trust, particularly toward governance structures. In contrast, the post-invasion period demonstrates a substantial decline in neutral or undecided responses and a shift toward more polarized but experience-based assessments. Trust has increased notably in emergency services, volunteer organizations, and, to a lesser extent, local self-government bodies, reflecting their visible and practical role in crisis response. At the same time, evaluations of state institutions remain differentiated.

Overall, the findings indicate that the full-scale war has acted as a catalyst for restructuring social trust and redefining the roles of formal and informal actors in crisis governance. The study underscores the growing relevance of community-level resilience and horizontal social ties in conditions of prolonged systemic stress.

**Keywords:** local communities, crisis response, resilience, social trust.

## **Reducing Communication-Related Vulnerability to Disasters: A Framework for Capacity Development**

*Sten Hansson (University of Tartu), Kati Orru (University of Tartu)*

Social vulnerability to disasters is often exacerbated by failures or shortcomings in risk and crisis communication. The framework of ‘communication-related vulnerability to disasters’ (Hansson et al., 2020) suggests that people may become more vulnerable if they encounter problems with accessing, understanding, or acting upon information about hazards. Communication researchers, policy makers, and emergency responders need to devise concrete plans for reducing these obstacles and for building communication capacity as a part of broader systemic disaster preparedness capacity development.

Efforts to strengthen disaster risk communication capacities tend to rely on generalized principles, operational standards, or compilations of ‘best practices’, typically derived from scholarly analyses of practitioners’ reflections on previous disaster responses (Seeger & Schwarz, 2024). This approach is known in disaster studies as the ‘all-hazards’ approach as it is based on an assumption that different disasters share common features and can thus be addressed by uniform preparedness strategies. However, recent research suggests that this approach to disaster planning does not support the consideration of the unique features of each hazard scenario (Bodas et al., 2020; Peleg et al., 2021).

In this paper, we address this shortcoming by outlining a scenario-based framework for the development of communication capacity of disaster management institutions. Drawing on recent theorisations of the dynamics of disaster vulnerability (Orru et al., 2023), the framework combines audience research and engagement and scenario-based vulnerability analysis exercises to provide input to evidence-based changes in organisational practices that reinforce preparedness and communication capabilities. The identified development tasks help to address the needs of people in vulnerable situations, take into account situational complications that may emerge in a particular disaster scenario, and guide the filling of capacity gaps in disaster management, communication, and social support structures.

**Keywords:** risk communication, vulnerability, preparedness, capacity development.

## **Mental Distress among People with Hearing Loss during Armed Conflict**

*Carolina Tannenbaum-Baruchi (Ben-Gurion University of the Negev), Barak Kandell (Statistical Department, The Academic College Tel Aviv – Yaffo), Nadav Davidovich (Bar Ilan University), Stav Shapira (Ben-Gurion University of the Negev)*

**Background:** The WHO estimates that over 430 million people globally live with hearing loss, a number expected to surpass 700 million by 2050. In conflict settings, people with hearing loss face increased risks due to barriers in accessing critical information, alerts, and services, which may increase uncertainty and distress. Understanding the mental health impacts on this population during emergencies is crucial for developing inclusive public health responses.

**Methods:** A cross-sectional study was conducted from October to November 2023, following the October 7 attacks and subsequent war in Israel. An accessible Qualtrics-based survey was distributed among people with hearing loss. Psychological distress was assessed using nine items adapted from the Brief Symptom Inventory (BSI), encompassing anxiety symptoms (irritability, tension, nervousness) and depression symptoms (loneliness, sadness, loss of interest, hopelessness, fearfulness).

Participants rated symptoms on a 1–5 Likert scale, with one item modified to reflect wartime context ("Fear of going to public places due to the war").

Results: Among 167 participants analysed (52.1% deaf, 43.7% hard-of-hearing), repeated-measures ANOVA revealed significant within-subject variability across distress symptoms ( $F(6.54, 857.04) = 9.16$ ,  $p < .001$ ). "Feeling tense" emerged as the highest-rated symptom, significantly exceeding most others ( $d = 0.23$ – $0.31$ ), while "feeling fearful" was the lowest-rated. Women reported significantly higher composite distress than men ( $M = 3.11$  vs.  $2.68$ ;  $d = 0.86$ ,  $p = .019$ ). Notably, hearing status (deaf vs. hard-of-hearing) and age showed no significant associations with distress levels, indicating psychological burden affects the entire hearing disability community uniformly.

Conclusions: People with hearing disability experience elevated psychological distress during conflict, with tension being the predominant symptom. Crisis response systems must prioritize accessible communication channels and equitable mental health services that address the needs of this community across all severity levels of hearing loss.

**Keywords:** psychological distress, armed conflict, mental health accessibility, deaf and hard-of-hearing individuals.

### **From Community Action to Early Warning: Participatory Preparedness for Cascading Risks**

*Ramona Velea (Institute of International Sociology of Gorizia), Riccardo Laterza (Institute of International Sociology of Gorizia), Francesca Sabatini (Institute of International Sociology of Gorizia), Alice Rossi, Riccardo Laterza (Institute of International Sociology of Gorizia)*

As disaster risk management increasingly confronts systemic and cascading risks, preparedness cannot rely solely on technical solutions and predictive models. It requires participatory pathways capable of connecting risk knowledge, institutional capacities and societal action. This paper presents a participatory methodological framework that positions civic engagement as a key enabler of preparedness and societal resilience and examines its application across different stages of the DRM cycle.

The framework builds on participatory action research, citizen science and resilience governance scholarship. Methodologically, it combines structured stakeholder mapping, assessment of risk perception and engagement readiness, co-production of knowledge and differentiated participatory pathways tailored to community characteristics. A central contribution of the framework is its capacity to translate risk perception into preparedness action by establishing local participatory structures – such as citizen–scientist networks and stakeholder core groups – that foster trust, learning and sustained collaboration between citizens, civil society, emergency services and public authorities.

The framework is illustrated through two complementary applications. The EU H2020 FirEUrisk project demonstrates how participatory pathways can support preparedness and risk reduction in wildfire contexts, framed as paradigmatic systemic and cascading hazards. Through community profiling and differentiated engagement strategies, FirEUrisk enabled the co-design of preparedness measures, the activation of citizen–scientist networks, and improved local risk communication. The UPCM KAPP CRISAFE project applies similar participatory principles to multi-hazard cascading risks, where participation functions as a critical enabler for the uptake, legitimacy and effective use of early warning systems. In CRISAFE, structured stakeholder engagement and co-produced awareness strategies bridge the gap between complex technical tools and societal use.

Together, these experiences show that adaptive and differentiated civic engagement strengthens preparedness outcomes, enhances the usability of early warning systems, and improves resilience in the face of cascading risks. The paper argues for integrating participatory governance mechanisms as an operational foundation of preparedness-oriented DRM.

**Keywords:** co-production, engagement strategies, stakeholder mapping, assessment of risk perception, engagement readiness.

## 2.2. Technological Innovation for Disaster Reduction

### AI in Weather Warning: An Argumentative Delphi Study on Expert Hopes and Concerns

*Thomas Kox (Weizenbaum Institute)*

Artificial intelligence (AI) is being integrated into disaster risk reduction more and more, including in early warning systems (EWS) for weather hazards. Although AI offers the potential for faster data processing and improved forecast accuracy, concerns remain regarding automation bias, reduced human oversight and accountability, and the erosion of professional judgement. Despite rapid technological advances, the views of the weather warning community are not well represented in current research. To address this issue, an argumentative Delphi study was conducted with experts from the 2024 WMO HIWeather Final Conference. Participants assessed the impact of AI on thirteen key aspects of weather warnings, including quality, interpretability, accountability and social bias, and shared their hopes and concerns. Overall, participants expressed cautious optimism. They expect AI to improve the quality of warnings, which could have a positive impact on broader dimensions of warning efficacy, public trust, and institutional responsibility. However, concerns were also raised about over-reliance on AI, the potential erosion of human involvement, and the challenges involved in maintaining a single authoritative voice in warning communication. Rather than viewing AI as a replacement for human decision-making, it is considered a decision support tool that enhances professional expertise. Tailored warnings and multilingual communication were identified as promising areas for AI application, although issues of data bias and accessibility remain. Thus, ethical implementation is vital to ensure inclusiveness and alignment with global disaster risk reduction goals. Finally, the introduction of AI affects the 'professional core' of weather warning as an occupation, prompting experts to redefine their evolving roles and core competencies in the face of technological advancements.

**Keywords:** human-AI collaboration, Delphi, risk communication, weather forecasting, warning systems.

### Producing Integrated Science Advice in Disease X Simulation Exercises

*Charlotte Waltz (Erasmus University Rotterdam), Bart Blokland (Erasmus University Rotterdam), Femke Overbosch (Pandemic and Disaster Preparedness Center), Jeannette de Boer (Pandemic and Disaster Preparedness Center), Tomris Cesuroglu (Pandemic and Disaster Preparedness Center), Anja Schreijer (Pandemic and Disaster Preparedness Center)*

Multi- and interdisciplinary science advice is widely recognised as essential for complex public health crises, but less is known about how the epistemic and boundary work of integration is enacted by advisors in practice, and how these changes across outbreak phases. This paper examines how

integrated science advice is produced, drawing on simulation exercises conducted in the Netherlands that modelled advisory processes during a fictional ebolavirus outbreak.

The exercises involved approximately twenty experts from biomedical, social, behavioural, and economic disciplines, initially organised within separate advisory structures and later reconfigured into mixed groups tasked with producing integrated advice. The scenario unfolded across three outbreak phases designed to foreground shifting uncertainties, time pressures, and policy demands. We conducted a reflexive thematic analysis of discussion notes, observations, and advisory outputs.

Our analysis suggests that the feasibility of integrated science advice is shaped by pre-existing institutional structures and advisory architectures. Knowledge integration emerged as an active process of epistemic translation, requiring negotiation of assumptions, epistemologies, and methodologies rather than the aggregation of disciplinary inputs. These processes made normative assumptions more visible, necessitating explicit mediation of priorities often implicit in domain-bounded advice.

The form and value of knowledge integration varied across outbreak phases. Early-stage uncertainty, acute escalation, and prolonged crisis management foregrounded different advisory needs, revealing integration as a dynamic and situational process rather than a fixed ideal. Rather than aiming for full integration at all times, our findings suggest that effective science advice combines selective integration with coordinated parallel production of knowledge, aligned with policy timelines and logics. Preparedness for future outbreaks may therefore depend on designing advisory systems capable of flexibly brokering between integrated and parallel forms of knowledge under changing conditions of uncertainty and urgency.

**Keywords:** science advice, pandemic preparedness, knowledge integration.

## **A Spatial Analysis of Socio-economic Social Vulnerability to Technological Risks: The Case of Lithuania**

*Paulina Budrytė (Kaunas University of Technology)*

Social vulnerability plays a decisive role in shaping how societies experience and respond to technological risks. This paper focuses on the socio-economic dimension of the Social Vulnerability Index (SVI) as a framework for analysing vulnerability to technological risks in Lithuania. Building on established SVI methodology, the study employs a spatial analytical approach to examine key socio-economic indicators, including income levels, employment status, educational attainment, and household characteristics, and their relationship with selected technological risk factors.

Using bivariate spatial analysis and local measures of spatial association, the paper explores how socio-economic vulnerability and technological risks co-locate and interact across space, revealing territorially differentiated patterns of vulnerability. The Lithuanian case illustrates how regional socio-economic inequalities and settlement structures condition socially uneven exposure and adaptive capacity in relation to critical technological systems such as energy, industrial, and digital infrastructures. By foregrounding the spatial distribution of socio-economic vulnerability, the analysis demonstrates that technological risks are embedded within existing social and territorial structures rather than uniformly distributed phenomena. The paper contributes to resilience research by highlighting the value of spatially explicit social vulnerability assessment for risk governance and resilience planning in small and mid-sized European states.

This presentation is based on the project „Socio-spatial determinants of societal vulnerability and resilience to crises and strengthening the crisis response potential of communities“ (SERENITY), funded by the Research council of Lithuania, no. Nr. S-VIS-23-21

**Keywords:** Social Vulnerability Index, technological risks, spatial analysis, Lithuania.

### **Uncertain Skills, Invisible Voices: The Personal Barriers to Socio-Technical Change**

*Joaquin Zenteno Hopp (Vestlandsforskning), Thomas Myksvoll (NORCE), Daniel Furberg (Vestlandsforskning)*

This article examines barriers and drivers of inclusion in working life to understand the tensions emerging at the intersection of green and digital transitions. It investigates how systems, businesses, and organizations address what workers do, feel, and think, clarifying what meaningful inclusion entails, particularly regarding skills and capabilities. Inclusion is framed not merely as bringing new actors into initiatives or increasing diversity of ideas, but also as ensuring that those already involved have the conditions to participate fully, with their perspectives and values genuinely recognized. The analysis draws on 40 individual and group interviews, a systematic review of webpages and digital documents from 50 initiatives in Western Norway, and a survey with statistical analysis of relevant open data sources. Findings show that the personal dimension of inclusion receives limited attention, with most initiatives prioritizing economic and technological gains, leaving uncertainties around skills and competencies insufficiently addressed. This neglect reflects a local culture where personal concerns are viewed as private or the state's responsibility rather than that of employing organizations, and workers' resulting frustration emerges as a barrier to active engagement in the transitions. The article concludes that such uncertainty warrants further investigation, both in terms of how it is shaped by innovation systems and how workers respond to it.

**Keywords:** inclusion, green transition, digital transition, worker's values, uncertainty.

### **2.3. Urban and Local Resilience in Times of Polycrisis**

#### **Building Up Resilience: The Key Role of Local Administrations in Disaster Management. Research Results from Germany**

*Nicolas Bock (Disaster Research Unit (DRU), Freie Universität Berlin), Peter Windsheimer-Kolla (Disaster Research Unit (DRU), Freie Universität Berlin)*

In the recent years, the German emergency and disaster management system has been tested by multiple crisis events. Whilst the discourse on crisis management frequently accentuates actors such as first responder organizations and overarching national strategies for disaster management, it often overlooks the pivotal role of local administrations in their capacity as emergency management actors. The local administration apparatus is a key component in disaster preparation, response and recovery. Within the federalized German disaster management and civil protection system, local administrations are tasked with addressing the needs of their respective populations, while currently implementing concepts and demands from state or federal administrations, for example civil defence planning and heat wave protection. It is imperative that they consolidate disparate perceptions of risks and threats based on their geographical, political and demographical circumstances, as well as the demands, needs and capabilities of their population with varying political concepts and strategies to cultivate

communal resilience. Furthermore, it is imperative for organizations to cultivate resilience within their own administrative structures to ensure reliable and resilient operational capabilities in the event of a crisis. The Disaster Research Unit is currently analysing the contexts of local government action in crises and disasters, as well as the various perspectives on communal resilience at the local level. It is the objective of our contribution to present key findings regarding resilience strategies, networks, and demands in both urban, suburban and rural communities and their local administrations. In addition, lessons learned from recent events, such as blackouts in parts of suburban Berlin, will be taken into account.

**Keywords:** local administrations, community resilience, resilience strategies, disaster needs.

## **Residential Communities in Cascading Polycrises: Enhancing Resilience in Multi-Flat Housing Environments**

*Raul Savimaa (Estonian Academy of Security Sciences), Jaanika Puusalu (Estonian Academy of Security Sciences) Emilia Muuga (Estonian Academy of Security Sciences)*

In recent years, European societies have faced increasing disruptions to vital services, including electricity, water, and telecommunications. Crisis management and response practices typically focus on single events and top-down response mechanisms. Growing interdependence of critical services, however, results in polycrises and cascading effects that may increase the emergence of multiple, interlinked disruptions.

To date, limited attention has been paid to preparedness and resilience at the level of residential communities, particularly in multi-flat housing environments where interdependencies are especially pronounced, and residents have limited opportunities to gather personal supplies or use autonomous solutions. The current paper addresses this research gap in Europe by examining how residents of multi-flat houses and local community organisations can enhance preparedness and resilience under conditions of cascading polycrises.

The study applies an integrated conceptual framework combining societal resilience and comprehensive national defence perspectives. It emphasises the role of bottom-up preparedness measures, supported by municipalities, in complementing crisis management, especially in long-term crises such as a state of emergency or armed conflict.

Empirical insights are drawn from qualitative community-based cases in the Baltic region, such as the Harku and Muuga communities. The analysis highlights practical measures to strengthen local preparedness.

The main contribution of the research lies in the application of an integrated conceptual and methodological framework at the residential and community scales. It argues that strengthening community-level preparedness in multi-flat housing environments is essential to mitigate cascading effects, sustain basic living conditions during crises, and enhance overall societal resilience. Given structural similarities in housing, the findings are relevant for the Baltic region more broadly.

**Keywords:** resilience, polycrisis, cascading effects, communities, vital services.

## **Multiple Crises and Their Dual Effects on Lithuania's Medium-Sized Cities: Challenges and Opportunities**

*Gintarė Pociūtė-Sereikienė (Institute of Sociology at the Lithuanian Centre for Social Sciences), Rūta Ubarevičienė (Institute of Sociology at the Lithuanian Centre for Social Sciences), Donatas Burneika (Institute of Sociology at the Lithuanian Centre for Social Sciences)*

Over the past three decades, Lithuania has experienced a series of crises and transformative processes that have shaped the development trajectories of its cities. Most Lithuanian cities have faced sustained population decline accompanied by economic, social, and infrastructural challenges. The period since 2020 has been particularly turbulent, characterised by the overlapping effects of several major crises, including the COVID-19 pandemic, Brexit, the ‘hybrid war’ along the Belarusian border, the Russian invasion of Ukraine and the subsequent refugee influx, a housing crisis, and the onset of economic recession. Despite their scale and intensity, the combined and interconnected effects of these crises on the future development of Lithuanian cities remain insufficiently examined. This presentation seeks to address this gap by analysing how multiple, simultaneous crises have affected three medium-sized, post-industrial, long-term shrinking Lithuanian cities - Šiauliai, Panevėžys, and Alytus - which function as important regional centres. Although these cities have traditionally played a significant role within Lithuania’s polycentric settlement system, they have long struggled to attract residents, investment, and economic activity. Since 2020, however, demographic trends in Lithuania have undergone notable changes. While crises typically produce adverse effects - such as disruptions to economic stability, safety, public health, and housing affordability - medium-sized regional centres have, in some respects, gained a relative advantage compared to larger metropolitan regions. Applying the polycrisis framework, the study explores the interconnected and cumulative impacts of multiple crises on urban development, with a particular focus on demographic dynamics. The analysis examines changes in international in-migration and internal migration patterns during the polycrisis period, providing insights into how medium-sized cities are repositioned within Lithuania’s evolving urban system.

**Keywords:** medium-sized cities, urban shrinkage, polycrisis, multiple crises, Lithuania.

## **Factors and Pathways for Enhancing Decision- Making in Post-Disaster Reconstruction and Resilience Building**

*Eefje Hendriks (University of Twente), Nathan Clark (Vrije Universiteit Amsterdam), Kees Boersma (Vrije Universiteit Amsterdam), Robert Sakic Trogrlic (International Institute for Applied Systems Analysis), Sue Webb (Care International), Marleen de Ruiter (Vrije Universiteit Amsterdam), Marjolaine Wolf (TRUSTEQ)*

Societies are increasingly impacted by natural hazards, requiring adaptation and resilience building. Especially in low-income countries, houses that cannot withstand natural hazard impacts are a growing threat. Current reconstruction assistance is often ineffective or insufficient to enhance resilience, overlooking the complexity of household decision-making. The growing complexity of our societies and the increasing presence of cascading, compounding and multi-hazard risks, demand for a holistic understanding of household decision-making in the reconstruction. This study provides a holistic understanding of essential decision-making factors and frameworks in post disaster reconstruction to enhance resilience and provide the basis for conceptualization and measuring resilience across different hazard types. The study engages international and national experts, working in different fields including disaster risk reduction of the built environment, humanitarian shelter and settlement

practice, risk governance, and social studies. Three collaborative expert workshops were used to identify factors, prioritize factors, and identify connections between factors and pathways for effective assistance. In one of the workshops, special attention is given to multi-hazard conditions in Nepal. Findings stress the importance of hazard context and experience for identification, prioritization and linking of factors. Nevertheless, the importance of some factors is recognized across participants, such as the role of individual risk perceptions and capacities, considerations for local norms, and the role of governance in the decision-making processes. The study provides insights into the complexities and holistic considerations necessary for supporting effective decision making in disaster reconstruction processes at the household level. The outcomes identify crucial relationships between factors and pathways for effective reconstruction assistance mechanisms.

**Keywords:** decision-making, interdisciplinary, factors, disaster resilience, reconstruction assistance.

### **Workshop: Community Resilience in Polycrisis: Transdisciplinary Approaches to Strengthening Crisis and Disaster Management**

*Verena Flörchinger (Berlin School of Economics and Law), Laura Aßmann (Alice Salomon Hochschule Berlin – University of Applied Sciences), Paul Gosemann (Gesundheitsamt Frankfurt am Main), Malena García Lombardi (Berlin School of Economics and Law), Vincenz Leuschner (Berlin School of Economics and Law)*

Crises and disasters increasingly intersect, giving rise to complex polycrises that pose significant challenges to state institutions and society at large. Combined with persistent resource constraints in the public sector, these dynamics place considerable pressure on public administration. Research highlights the central role of civil society in crisis contexts, as these actors, through engagement, self-organisation, and adaptive practices, foster collective efficacy and contribute substantially to effective crisis management (cf. Quarantelli, 1994). Community resilience serves both as an analytical concept and a practical framework, offering valuable means to enhance understanding of crises and to support adaptive coping strategies.

Within our research project, we examine how community resilience can be strengthened through network-oriented approaches to psychosocial crisis management. The workshop includes a brief theoretical input drawing on Norris et al. (2008), and presents insights from contrastive case studies on natural hazards, a terrorist attack, and forced displacement. The core of the workshop is an interactive exchange: an initial icebreaker maps the disciplinary and professional backgrounds of participating academics, practitioners, and policymakers. Group discussions address key questions from multiple perspectives. Together with participants, we explore how community resilience is conceptualized across disciplines, policy, and practice; which theoretical approaches inform these understandings; and which practices have proven effective in real-world crises. Building on these discussions, the workshop aims to identify research gaps, foster connections, and encourage collaboration, contributing to collective reflection and advancing societal resilience.

**Keywords:** community resilience, transdisciplinarity, psychosocial crisis management, disaster management.

## **Co-creation session: Co-Producing Risk Using Digitally Mediated Conversation Analysis and Discursive Psychology**

*Andrew Powell (Centre for Peace and Security)*

How do people collectively perceive, interpret and act upon risk in real time? Research on risk perception and risk communication has traditionally focused on cognition, attitudes and message design. Yet in digitally mediated environments, risk perception increasingly emerges through interaction rather than information exposure. This special session proposes an interactive, practice-based exploration of risk communication using digitally mediated Conversation Analysis (CA) and Discursive Psychology (DP) methods, drawing directly on empirical approaches developed in my PhD research in disaster studies.

Rather than treating risk communication as message transmission, the session reframes it as communicative action: the moment-by-moment practices through which uncertainty is negotiated, authority is claimed or resisted, emotions are managed, and collective preparedness either forms or stalls. These interactional processes are increasingly central not only to disaster risk reduction but also to wider human security challenges, including misinformation, crisis governance and social cohesion.

The inter-active session will combine live participatory experimentation inputs with short analytical outputs. Participants will be invited to join a temporary WhatsApp group during the session and respond to a brief simulated crisis scenario involving ambiguous risk information (10min). Their messages will form a brief real-time interactional dataset. Selected extracts will then be examined collaboratively to demonstrate how communicative practices shape risk perception as it unfolds (10min).

Using CA and DP concepts such as footing, stake management, category entitlement and joint project formation, participants will explore how particular interactional moves support verification, containment and coordination, while others amplify anxiety, delay action or generate polarisation (10 min). The session emphasises methodological reflexivity, ethical considerations and practical translation for disaster research and risk communication practice.

By combining digital interaction, empirical micro-analysis and participatory reflection, this session offers an innovative format for understanding risk perception not as an internal mental state, but as a socially organised accomplishment. It provides participants with transferable analytical tools for studying and strengthening communicative resilience across disaster and human security contexts.

**Keywords:** co-production, risk, communication.

[Parallel sessions 3.1.-3.2 | Roundtable discussion 1 | Simulation 1](#)

### **3.1. Diversity, Equity and Disability-Inclusive DRM**

#### **Identifying Barriers to Inclusive Community Engagement for Flood Resilience**

*Samjhana Karki (Independent), Kaira Zoe Canete (Erasmus University), Rupesh Shrestha (Catholic Relief Services), Eefje Hendriks (University of Twente)*

Current disaster risk management (DRM) practices in developing and low-income countries are often top-down and insufficiently inclusive, frequently overlooking the specific needs of marginalized

populations. This study explores the key barriers that limit inclusive community engagement during the flood preparedness phase in Lumbini Province, Nepal.

Using a mixed-methods approach, data were collected through 271 household surveys. Four FGDs were conducted with the Ward DRRM Committee, senior citizens, and women's, men's, and youth groups. Five key informant interviews were held with rural municipal officials, a Muslim woman representative, and a local community leader. Additionally, three in-depth interviews were conducted with individuals with distinct vulnerabilities.

Findings reveal that despite municipal-level efforts to promote Gender Equality, Disability, and Social Inclusion (GEDSI), the participation of marginalized groups particularly women, under privileged castes, persons with disabilities, and senior citizens remains minimal. Language barriers, inaccessible meeting venues, and the disproportionate care responsibilities of women further restrict their participation. Access to flood-related information and post-disaster support is often mediated through personal and political networks, reinforcing existing social hierarchies and contributing to low levels of trust in local governance institutions. Household survey results indicate that the criteria for joining Disaster Risk Reduction (DRR) committees are insufficiently inclusive, limiting the involvement of marginalized individuals. Consequently, their perspectives and challenges are inadequately reflected in emergency protocols, disaster risk reduction plans, and relocation strategies.

The study highlights that inclusion in disaster preparedness is more frequently promised than truly implemented. There is an urgent need to draw lessons from local realities to enhance GEDSI in disaster preparedness. These insights provide valuable guidance for policymakers and practitioners seeking to build inclusive and sustainable flood resilience in Nepal and in similar rural, hazard-prone contexts worldwide.

**Keywords:** community engagement, flood resilience, Disaster Risk Reduction (DRR), gender equality, Disability and Social Inclusion (GEDSI), marginalized groups.

### **Career Inclusion of Persons with Disabilities in Times of Cascading Crises**

*Rasa Rudaitienė (Mykolas Romeris University)*

Contemporary societies face growing uncertainty due to multiple overlapping crises such as wars, economic instability, pandemics, and environmental disruptions. These interconnected crises threaten individuals' ability to maintain autonomy, participation, and long-term security. Socially vulnerable groups, including persons with disabilities, are especially at risk.

This study explores how careers for persons with disabilities relate to societal resilience. Careers are seen not just as job outcomes, but as ongoing processes that promote independence, agency, and social involvement. During crises, disruptions to work, accessibility, and support systems make careers more unpredictable for persons with disabilities and raise the risk of long-term exclusion.

The analysis applies a conceptual and bibliometric methodology based on existing research. Using VOS viewer, the study maps dominant research directions and thematic clusters at the intersection of disability, careers, and labour market uncertainty. This approach helps to identify how current research links disability to issues of agency, autonomy, and long-term career sustainability in the context of contemporary crises.

Accessible work environments, flexible career systems, and inclusive organisational practices are repeatedly associated with greater individual agency and autonomy. Such structures reduce dependency and support sustained participation in work and careers during prolonged periods of uncertainty. By linking bibliometric patterns with current crisis contexts, the analysis highlights how disability-related career research increasingly frames inclusion as a key component of societal resilience.

**Keywords:** disability, careers, societal resilience, career inclusion, labour market uncertainty.

### **Climate Stress, Peer Support, and Vulnerabilities among Migrant Truck Drivers**

*Szymon Parzniewski (Dalhousie University), Haorui Wu (Dalhousie University)*

Cascading crises expose and intensify pre-existing vulnerabilities, particularly among migrant workers positioned within essential yet precarious sectors. This paper examines the experiences of Ukrainian long-haul truck drivers in Atlantic Canada to understand how climate-related disruptions interact with occupational pressures and migration-related constraints to produce layered forms of vulnerability. Increasingly frequent extreme weather events, including winter storms, flooding, and heatwaves, create cascading impacts on transport work, affecting road safety, delivery schedules, income stability, and physical and mental well-being. Drawing on semi-structured qualitative interviews, the study explores how climate stressors amplify structural and situational vulnerabilities among migrant drivers, including unfamiliarity with local weather patterns, regulatory and employer pressures to maintain deliveries, limited access to formal support systems, and social isolation linked to long-haul work. These interconnected risks illustrate how climate events function not as isolated shocks but as triggers within broader socio-technical systems, producing cumulative and unequal consequences. The findings highlight informal workplace peer support as a critical coping and adaptive mechanism within these cascading crises. Peer networks enable drivers to share real-time risk information, practical safety strategies, and emotional support, partially offsetting vulnerabilities that remain insufficiently addressed by formal occupational health, safety, and disaster preparedness frameworks. However, reliance on informal support also underscores systemic gaps in institutional responses to climate-exposed migrant labour.

**Keywords:** climate change, climate stress, peer support, migrant truck drivers.

### **Boosting Psychological Resilience and Wellbeing in War-Affected Universities: Experience of the Erasmus+ Project BURN**

*Iryna Zadorozhna (Ternopil Volodymyr Hnatiuk National Pedagogical University), Yuliia Kostyuk (Ternopil Volodymyr Hnatiuk National Pedagogical University)*

The full-scale war in Ukraine represents a profound cascading crisis, combining armed conflict with long-term psychological, social, and institutional disruption. Higher education institutions (HEIs) have been particularly affected, as they simultaneously serve as learning environments, workplaces, and community anchors for populations exposed to chronic stress, trauma, displacement, and uncertainty. This presentation shares insights from implementing the Erasmus+ KA2 project BURN – Boosting University Psychological Resilience and Wellbeing in (Post-)War Ukrainian Nation (101129379 – BURN – ERASMUS-EDU-2023-CBHE) as a concrete measure for strengthening societal resilience through higher education.

The ongoing BURN project aims to mitigate the mental health consequences of war for Ukrainian university students and staff by professionalising crisis psychology within HEIs, enhancing institutional psychological services, and fostering resilience and mindfulness at both individual and organisational levels. Key interventions include the introduction of new university-level courses in crisis and trauma psychology, capacity-building for university psychological service providers, and the establishment of Centres for Psychological Resilience and Wellbeing in Ukrainian universities, including institutions temporarily relocated due to the war.

Drawing on a multi-country partnership between Ukrainian, Estonian, German and Latvian universities, the project adopts a systemic approach that links mental health support, institutional preparedness, and community outreach. By extending its activities to local activists, volunteers, social workers, and educators, BURN strengthens the role of universities as hubs of resilience within war-affected communities.

As institutionalised psychological support in higher education constitutes a critical yet underexplored factor of societal resilience in times of cascading crises, the BURN project offers transferable insights for crisis-prone regions seeking to integrate mental health, education, and civic resilience into long-term recovery and preparedness strategies.

**Keywords:** psychological resilience, higher education, war-affected communities, centre for psychological resilience and wellbeing.

### **3.2. Conflict and Complex Emergencies**

#### **Responding to Mass Casualty Incidents: A Ten-Year Retrospective Following the Pulse Nightclub Shooting in Orlando, Florida, USA**

*Staci Zavattaro (University of Central Florida), Thomas Bryer (University of Central Florida)*

Figuring out how to wash blood off city streets. Making sure trash is picked up in neighbourhoods blocked off to everyone but residents. Translating death notices to Spanish and English and back again even though you are not trained in translation. Redacting information from 911 calls after listening to them again and again, hearing screaming and gunshots on a loop. Reliving the trauma when you are asked by other municipal leaders to come speak about how your city responded to what was then the worst mass fatality shooting incident in the United States. In 2016, a gunman walked into the Pulse nightclub in Orlando, Florida and murdered 49 individuals. City of Orlando officials were the first to respond, though the scope of the incident cascaded a collaborative response from other local agencies, federal law enforcement, and community support after the tragedy. Drawing on interview data from our research immediately after the event, our paper is a retrospective look back at 10 years after the event to see what the main lessons learned were then, and how mass fatality response in the U.S. has evolved if at all. Lessons for municipalities across continents are shared.

**Keywords:** mass casualty event, municipal response, collaborative response, community engagement.

## **Building Resilience in Lviv Oblast against Cascading Crises: Lessons from the 2025 Floods**

*Natalia Zachosova (Bohdan Khmelnytsky National University of Cherkasy), Kamran Khan (Zaporozhye State Technical University), Tetiana Koroi (Vytautas Magnus University)*

In July 2025, Lviv oblast experienced unprecedented flooding, exposing the region's vulnerability to cascading crises. The prime cause of floods was tree cutting in Carpathian mountainous forests and the overflow of flood water from the banks of the Shchyrka and Zubra rivers due to heavy rains. These floods disrupted transportation, public services, and local livelihoods, highlighting the urgent need for comprehensive resilience strategies. Understanding the drivers and impacts of such crises is critical for informing future mitigation and preparedness efforts.

This study relies exclusively on secondary qualitative data, including government reports, scientific studies, media coverage, and NGO assessments of the 2025 floods. A thematic analysis was employed to synthesize information regarding flood causes, impacts, and response measures. The analysis focused on identifying both structural and non-structural interventions that contributed to Lviv's resilience or exposed gaps in preparedness.

Findings indicate that river bank floods can be controlled through structural measures, such as dykes along river banks and flood walls near densely populated areas. Simultaneously, non-structural interventions, including reforestation in the Carpathian Mountains, emerged as essential long-term solutions to reduce flood intensity and enhance watershed stability. Analysis of emergency responses revealed weaknesses in early warning systems, inter-agency coordination, and community preparedness, which intensified social and economic impacts of the floods.

The study highlights the necessity of integrated flood resilience strategies. While structural measures offer immediate protection in urban and rural centres, upstream interventions, like reforestation, address the root causes of flooding. Strengthening governance, disaster planning, and public awareness is critical to mitigate cascading crises in line with United Nations Office for Disaster Risk Reduction recommendations.

Building resilience in Lviv oblast requires a dual approach combining engineering solutions and ecosystem-based interventions. Lessons from the 2025 floods underscore the importance of proactive, multi-scalar strategies to manage cascading crises and safeguard vulnerable populations effectively.

**Keywords:** cascading crises, urban resilience, river bank floods, structural measures, reforestation in Carpathian Mountains.

## **Polycrises in International Law: Meaningful Concept or Meaningless Buzzword**

*Christy Shucksmith-Wesley (University of Nottingham), Scarlett McArdle (University of Nottingham)*

This paper examines the concept of crisis in international law and explores whether the emerging notion of polycrises offers conceptual and practical utility within legal frameworks. The paper firstly engages with legal and institutional developments over the past 100 years which have seen the International Federation of the Red Cross (formerly League of Red Cross Societies) and the United Nations develop powers to support people living through crises. International law has developed crisis-specific treaties, frameworks, and institutions addressing (for instance) armed conflicts, disasters, and health emergencies. There has been little innovation or meaningful consideration as to the interaction

between different crises, with no innovation in the legal space around cascading and compounding crisis, also referred to as polycrises.

Critically, the lack of meaningful cross-pollination and interaction between regimes (Breau et al., 2016) has been ever more exposed in recent years, not least through the experience of the COVID-19 pandemic. An underlying global health crisis exposed the legal and organisational siloes addressing crises with numerous examples of an inability to fully address cascading, compounding, or even coinciding crises. The legal framework is stunted in its ability to understand, respond to, and engage recovery from intersectional crises.

With this in mind, the paper secondly highlights a key conceptual challenge: the siloed nature of legal systems, which complicates responses to interconnected global challenges. Does such a system preclude the development of a legal concept of polycrises?

Finally, the paper evaluates whether polycrises would be a useful construct for advancing international legal developments – such as the PPED – by examining its definition, boundaries, and potential normative value.

**Keywords:** international law, polycrises, pandemic, United Nations, International Federation of the Red Cross.

### **Roundtable discussion: Underrepresented Topics in Disaster Education: Disciplines that Global Disaster Curricula Often Leave Out. / Underrepresented Topics in Disaster Education: A Project**

*Lauren Traczykowski (Aston University), Douglas Cubie (University College Cork), Sophie Hatchwell (University of Birmingham), Ilan Kelman (UCL)*

The UK Alliance for Disaster Research (UKADR) recently hosted a webinar series on Underrepresented Topics in Disaster Education. This free series accounted for those areas of disaster research currently being removed from curricula globally and/or which have been underrepresented in higher education teaching (disaster ethics, disaster law and older persons, disability, gender, vulnerability and equity, and visual culture). The audience for this webinar series included students, academics and practitioners from the UK and from around the world. This was particularly valuable to those individuals who do not have access to these topics in their own environments. The hope is, eventually, for this to be turned into an accredited programme where those currently deprived of certain aspects of disaster education can learn more and, with that, improve the quality of disaster risk reduction and response in their locations.

After a successful webinar series in Autumn 2025, participants called for an expansion of this project – e.g., through micro-credentials, networking, longer sessions, a workshop. Via a ‘Roundtable Discussion’ at NEEDS 2026, we will move this project forward and encourage broader engagement. Through targeted presentations and discussion, we hope to gain participant insight into the micro-credentialing/certification available for such a project, establish a robust network and networking opportunities on underrepresented topics, increase the topics taught and gather willing speakers, and identify/gauge interest in the type of future sessions that should be offered. Hence, the roundtable will act as a launch pad for the next phase of this project to fully represent currently underrepresented topics in disaster education.

**Keywords:** disaster education, underrepresented topics, ethics, gender, vulnerability and equity.

## **Simulation: Disaster Preparedness Capacity Development: A Scenario-Based Exercise for Social Vulnerability Reduction**

*Kati Orru (University of Tartu), Sten Hansson (University of Tartu), Kristi Nero (University of Tartu)*

We invite conference participants to join a disaster simulation exercise focusing on the scenario-based analysis of social vulnerability and preparedness capacity development needs. Drawing upon recent theorisations of disaster vulnerability, communication, and preparedness (Hansson et al., 2020; Orru et al., 2025), we discuss gaps in ‘all-hazards’ disaster preparedness approaches and demonstrate how disaster preparedness planning can systematically draw upon social vulnerability triage. We will present a multi-hazard disaster scenario and participants will work collaboratively to identify:

1. the intersecting and cascading hazards and their cumulative effects on different groups of people affected in that scenario,
2. the type and urgency of assistance the affected groups may need to cope with the impact of the hazards in that scenario,
3. institutions and community actors responsible for assisting and the capacities and limitations of these actors to deliver assistance,
4. capacity gaps and development needs in disaster preparedness, response, and recovery,
5. the ways for assessing and monitoring preparedness capacity development.

Participants will learn how a thorough analysis of social vulnerabilities emerging in disaster scenarios (e.g., earthquake, flood, wildfire) can uncover the most acute gaps in existing preparedness measures, disaster governance, critical infrastructure and services, communication, and engagement.

The exercise is designed to encourage interdisciplinary dialogue and to bridge research, policy, and practice perspectives. No prior experience with disaster simulation is required. All materials will be provided. We warmly welcome your participation and contribution to this collaborative learning activity.

**Keywords:** preparedness capacity development, scenario analysis, vulnerability assessment.

### [Parallel sessions 4.1.-4.4](#)

#### **4.1. Displacement Dynamics and Refugee Integration Strategies**

##### **Design and Praxis of an Arts-Based Workshop to Explore Refugees’ Experiences of Disasters in the UK**

*Mhari Gordon (University College London)*

Creative and arts-based methodologies have increasingly been used in disaster and migration research as part of wider efforts to decolonize knowledge production, challenging conventional positivist approaches that can marginalize participant voices. These methods emphasize participatory and flexible engagement, which can enable more inclusive and reflexive forms of knowledge creation, particularly with vulnerable populations. Asylum seekers and refugees are often disproportionately affected by disasters due to structural barriers to information, services, and resources; potentially making them vulnerable in daily life and during disasters. With the aim of exploring refugees’ experiences of disasters in the UK, a participatory multi-arts-based workshop was co-designed and co-led with a refugee capacity-building programme in London. The workshop focused on events such as

the COVID-19 Pandemic and 2024 Summer Riots. The workshop design enabled participants to choose their preferred artistic medium, interpret the topic freely, and opt into different forms of data generation. This open-enquiry approach highlights the value of arts-based methods for centring lived experience and offers a transferable methodological contribution for disaster research involving sensitive topics and populations with lived experience of trauma.

**Keywords:** arts-based research, disasters, displacement, refugees, participation.

### **Emergency Response Beyond Borders: Transnational Immigrant Capacities in Disaster Contexts**

*Szymon Parzniewski (Dalhousie University), Haorui Wu (Dalhousie University)*

Emergency response is often conceptualized as a locally or nationally bounded process, yet immigrant communities frequently mobilize resources, knowledge, and support through transnational social ties. The COVID-19 pandemic illustrated how immigrants activated cross-border networks, prior disaster experience, and culturally embedded practices to supplement formal disaster and emergency management (DEM) systems. Despite this, dominant resilience frameworks continue to underrecognize the role of transnational social processes in shaping preparedness, response, and recovery. This paper draws on an ongoing mixed-methods study in the Halifax Regional Municipality (HRM), a rapidly diversifying urban centre exposed to recurrent natural, technological, and health-related hazards. The analysis focuses on survey data from immigrant residents examining perceived risk exposure, sources of emergency information and assistance, prior disaster experience in Canada and abroad, household preparedness practices, and the structure of social support networks. The survey captures how immigrants navigate emergencies through multiple channels, including family and friends, neighbours, religious and cultural organizations, community groups, and public institutions, as well as varying levels of trust in formal emergency actors. Preliminary findings suggest that transnational disaster experience shapes risk perception, preparedness behaviours, and help-seeking strategies. Immigrants often occupy dual roles as both recipients and providers of assistance, drawing on dense social and cross-border ties to maintain access to information, material support, and emotional care during disruptions.

**Keywords:** inclusive emergency response, disaster, transnationalism.

### **Involuntary (Im)mobilities: Linking Children's Wellbeing to Drivers of Displacement and Parent Migration**

*Manya Oriel Kagan (International Institute of Applied Systems Analysis), Lisa Thalheimer, Oriol Kagan (International Institute of Applied Systems Analysis)*

Extreme weather events and conflicts are becoming increasingly common and affect populations worldwide, threatening the livelihoods and ability of parents to sustain their children with basic goods, education, and health services. Furthermore, there is proliferation of both, and in contexts of compound crises of conflict and climate-related crises, children experience cascading challenges to education and development. In many such cases, there are trapped populations – families are unable or unwilling to relocate – and parents leave their households in search of employment opportunities elsewhere. While research shows that remittances are an essential source of income for the left behind children (LBC) and their families, evidence on whether remittances help improve the lives and wellbeing of LBC is mixed (e.g., Cebotari & Belisuma 2021, Qiu et al., 2023, Tesfaw & Minaye 2022).

In this study, we aim to answer two questions: Is parent migration an appropriate ("good") adaptation strategy to cascading crises? Does it improve resilience or increase vulnerability to conflict, heat stress and flood events in LBC? Does parental migration improve children's wellbeing, health, and education when compared to non-migrating families? Utilizing a Difference-in-Differences (DID) model before and after heat stress and flood events, we assess LBC wellbeing, education, and health using harmonized DLS data (Harmonized Demographic and Health Survey data) from 1990 to 2021 for 75 LMIC. Comparing LBC outcomes before and after documented polycrises among disadvantaged families in which one parent has migrated to those in which neither parent has migrated allows us to learn about the utility of parent migration as a coping strategy. In this presentation, I will talk about compound crises and how it influences (im)mobility of families and children and then show preliminary results of our analysis.

**Keywords:** children, resilience, migration as adaptation, vulnerabilities, wellbeing.

## **Secondary Risks Faced by Displaced Ukrainian Women and Children in Prolonged Crisis**

### **Contexts**

*Augustė Nalivaikė (Kaunas University of Technology)*

Contemporary crises increasingly unfold as cascading processes, where initial disruptions generate secondary and tertiary risks that extend far beyond the immediate emergency. For displaced populations, these layered crises often produce conditions in which vulnerability deepens over time. This presentation offers a practice-based, prevention-oriented analysis of vulnerability pathways affecting Ukrainian refugee women and children in the context of prolonged displacement.

Drawing on frameworks of cascading crises, gender-based violence prevention, and child protection, the presentation examines how war-related displacement intersects with economic precarity, language barriers, and digital environments to increase exposure to secondary harms. Particular attention is given to risks such as human trafficking, coercive or survival-based prostitution, online grooming, and manipulative messaging targeting children. Rather than presenting individual case studies, the analysis focuses on risk environments and mechanisms through which uncertainty, misinformation, and power asymmetries are exploited.

The presentation highlights the central role of communication and information literacy in shaping vulnerability and resilience. In contexts where trust in institutions is fragile and access to reliable information is uneven, misleading narratives and fear-based messages can significantly exacerbate harm. Conversely, trauma-informed, gender-sensitive communication and education emerge as critical protective factors.

The presentation argues that societal resilience in displacement contexts depends not only on meeting immediate material needs, but also on strengthening preventive infrastructures – particularly education, trusted communication channels, and community-based support systems. By foregrounding vulnerability as a dynamic and cumulative process, the presentation contributes to broader discussions on resilience-building in times of cascading crises and offers insights relevant to policymakers, educators, and civil society actors working with displaced populations.

**Keywords:** Ukrainian refugees, secondary risks, displacement, prolonged crisis, vulnerabilities.

## 4.2. Technological Innovation for DRR

### Mapping Resilience Gaps in Cascading Crises: Climate Misinformation Platforms as Socio-Technical Infrastructures

*Monika Mačiulienė (Kaunas University of Technology)*

Climate misinformation has been identified as a persistent factor that undermines societal resilience by distorting risk perception, delaying collective response, and weakening trust in institutions, particularly during extreme events and periods of uncertainty (UNDP Climate Promise, 2025). This research examines how digital platforms and tools designed to address climate misinformation shape resilience outcomes within such interconnected crisis dynamics. The analysis draws on a systematic mapping of 104 platforms and tools addressing climate misinformation and climate communication, including scientific dashboards, policy trackers, fact-checking initiatives, watchdog projects, and educational tools. Platforms are assessed across five dimensions relevant to resilience: functional focus, actors and audiences, geographic scope, transparency, and sustainability.

The findings indicate a structural imbalance in the global ecosystem. Most platforms prioritise global, data-driven representations of climate risks and impacts, while comparatively few are oriented toward engaging directly with misinformation narratives during unfolding crises. This technocratic orientation supports long-term monitoring and preparedness but can be less effective in time-critical situations. Recent research on climate misinformation highlights a shift from outright denial toward contestation of solutions and policy responses, intensifying the risk of secondary crises such as policy resistance and social polarization (Nicolosi, 2025). The strong geographic concentration of platforms in the Global North, combined with limited attention to local contexts and languages, further constrains their capacity to support resilience.

From a cascading crisis perspective, climate misinformation emerges not only as a communication challenge but as a resilience gap embedded within socio-technical infrastructures. When data, warnings, and explanations fail to align with lived experience, misinformation can accelerate feedback loops of distrust, governance failure, and social disruption. Strengthening societal resilience therefore requires rethinking misinformation platforms as components of crisis preparedness and response systems, integrating spatially explicit information, contextual narratives, and audience-sensitive communication to support anticipatory governance and adaptive capacity in cascading climate-related crises.

**Keywords:** climate communication, misinformation, resilience.

### Communication Technology for Critical Societal Functions: A Case Study

*Leif Sundberg (Umeå University), Martina Granholm (Mid Sweden University), Christine Große (Luleå University of Technology), Erik Borglund (Mid Sweden University)*

Technologies that facilitate robust and effective communication are essential during crises. Here, the unique context of crisis communication presents additional challenges beyond common issues related to design and adoption. In this project, we follow the development of a large-scale communication infrastructure, RAKEL G2, used by actors in the Swedish context with a responsibility for crisis management (e.g., police, local and regional governments). RAKEL has over 100 000 users across 600

organizations and provides mission critical services such as group communication, text, and position sharing. The new system is not only a technological upgrade but also involves the development of additional mission support services. Based on interviews, studies of documentation, and observations of field exercises, our aim is to gain a deeper understanding of the challenges associated with developing communication technology for crisis communication, and their possible resolution. Identified challenges range from design to financial and coordination issues. We also aim to make theoretical contributions to what constitutes robust and resilient digital technology, that may be transferred to additional contexts. Furthermore, the project also presents opportunities to study the next generation of technology for crisis communication, including the interplay between this technology and processual changes, and deep dives into the challenges associated with developing systems capable of catering the needs of diverse actors. By doing so, the project contributes to literature devoted to new technology and applications for crisis management (Granholtm et al., 2022; Schwarz et al., 2016), as well as research on digital resilience (Boh et al., 2023).

**Keywords:** technology, digitalization, communication, crisis management.

## **Will Places Survive Disasters? Learning from Recovery Policies through AI-Based Tools for Regional Planning**

*Giulio Breglia (Gran Sasso Science Institute), Federico Fantechi (University of Palermo)*

Natural hazards are increasing in frequency and magnitude, and while prevention and risk reduction phases are increasingly supported by global policy frameworks, the post-disaster phase still presents several challenges for coherent and transferable policy design. Recovery processes are often fragmented, strongly context-dependent, and influenced by institutional capacity, socio-economic conditions, and local reconstruction cultures, making comparison and learning difficult across territories.

This paper aims to provide a data-driven tool for national and local policymakers that learns from previous recovery plans, explicitly taking into account different reconstruction cultures worldwide and their territorial outcomes. Rather than proposing a single optimal recovery model, the approach is grounded in past experiences and seeks to support scenario-based reasoning in the early stages of post-disaster planning.

Our methodology relies on three main stages. First, disasters are categorized in terms of their impacts on human societies, based on past events and observed recovery trajectories. Second, a worldwide text-mining analysis is performed on post-disaster recovery plans produced by both governmental and non-governmental actors, focusing on their effects on regions and other sub-national administrative territories, with particular emphasis on recovery timing and sequencing of interventions. Finally, these results are implemented in an interactive tool that combines regional resilience indicators with hypothetical budget categories and expenditure timing, providing insights into potential impacts across different economic and social dimensions.

The proposed tool is intended to support learning-oriented recovery planning, helping policymakers explore trade-offs, timing effects, and place-based vulnerabilities in post-disaster contexts.

**Keywords:** disasters, policy, regions, machine learning.

## **Do Visual Design Elements in Wildfire Early Warning Messages Improve Comprehension and Protective Action among Non-Native Speakers in Sweden?**

*Chloe Crothers (Lund University)*

Early warning systems (EWS) are a critical adaptation strategy for reducing disaster-related harm; however, their effectiveness depends on whether warnings are understood and acted upon by all populations. Research has shown that dissemination and communication remain the weakest components of EWS, particularly for populations facing language barriers. Non-native speakers are often disadvantaged when warnings are disseminated primarily in the dominant language, increasing vulnerability and reducing the likelihood of timely protective action. Visual design elements have been suggested as a method to support comprehension and reduce cognitive load; however, their effectiveness within wildfire communication and among non-native speakers remains under explored. This study examines whether the inclusion of embedded visual design elements – such as pictorials or icons – in text-based wildfire early warning messages improves comprehension and intended protective action among non-native speakers in Sweden. This is relevant to Sweden since existing systems recognize their limited tailoring to diverse populations, with non-native speakers often relying on informal networks for crisis information.

Guided by the Communication–Human Information Processing (C-HIP) model and cognitive load theory, the study adopts a quantitative within-subjects experimental survey design. Participants are presented with two wildfire early warning message conditions: a text-only message and an otherwise identical message containing embedded visual elements. Comprehension is measured using multiple-choice questions, while intended protective action is assessed using Likert-scale items. The study targets non-native speakers residing in Sweden, including international students and individuals enrolled in Swedish for Immigrants (SFI) programs.

By systematically comparing text-only and visually embedded wildfire warning messages, this study aims to contribute empirical evidence on how visual design can support comprehension and intended protective action among non-native speakers. The findings are expected to inform more inclusive early warning message design and contribute to ongoing discussions on equity, communication, and resilience in early warning systems.

**Keywords:** risk communication, early warning systems, visual design, wildfire risk, protective action.

### **4.3. Perception, Trust, and Recovery in Complex Disaster Contexts**

#### **Perception, Emotion and Behaviour in Cascading, Compounding and Multi-hazard Disasters - An Integrative Review**

*Shivam Sen (University of Groningen), Francesca Giardini (University of Groningen), Mohammad Gharesifard (University of Groningen), Wander Jager; (University of Groningen), Andreas Flache (University of Groningen)*

Globally, the growing interconnectedness of natural, economic, political and social systems both within and beyond national boundaries means that virtually all future disasters will escalate in social cascades whose precise pathways are nearly impossible to predict (Felsenstien et al., 2020, Raymond et al., 2020). Cascading disasters are “extreme events, in which cascading effects increase in progression over time and generate unexpected secondary events of strong impact” (Pescaroli &

Alexander, 2015, p. 65). While compounding disasters have been described as disasters occurring from “a special category of climate extremes, which result from the combination of two or more events, and which are again ‘extreme’ either from a statistical perspective or associated with a specific threshold” (Intergovernmental Panel on Climate Change, 2012). These types of disasters, together with ones originating from multi-hazards, pose severe and unique challenges to prepare against (Pescaroli & Alexander 2018; Kelman, 2018) which, given climate change, is increasingly vital to understand but still underresearched. One particular way events in these disasters differ from simple disasters is in the behaviour of people experiencing these events. Which is mediated by their perceptions and emotions with respect to multiple, compounding or cascading risks, threats or hazards. While previous reviews have synthesised knowledge with regards to behaviours and perceptions with regards to simple disasters, so far, no review exists on behaviour, emotions or perceptions in multiple hazards, cascading or compounding disasters. Thus, this paper aims to fill this gap by reviewing the multi- and interdisciplinary literature on people’s responses with respect to the three types of disasters. This is done with the aim of providing a synthesis of current knowledge on the issue and also to generate insights for the development of an abstract agent-based model of behavioural responses to these types of disasters in an area exposed to both earthquakes and floods.

**Keywords:** cascading disasters, compound disasters, multi-hazard disasters, disaster risk perception, disaster behaviour.

## **Equitable Community Engagement and Participation in Emergency Management: Challenge and Pathways Forward**

*Jungwon Yeo (University of Maryland Baltimore County)*

The research posits that the challenges inherent in the current emergency management systems are rooted in the marginalization of the vulnerable population’s agency and authority. It suggests that these challenges can be surmounted by implementing critical approaches to human-centred emergency management over technological transformation, which would empower a broader range of voices in the policy making and implementation process.

This study analyses preliminary qualitative data from a focus group of 30 stakeholders of emergency management of critical infrastructure in the WUI. The stakeholders include emergency managers, infrastructure managers, local or state government officers, researchers and community representatives.

The study identifies major challenges and pathways forward of community centric approaches to resilient and equitable emergency management of critical infrastructures, which better ensure the inclusion and representation of diverse stakeholder voices. This inclusiveness is anticipated to be the keys to resilient disaster governance systems, particularly bringing equitable protections and supports to structurally marginalised and oppressed communities facing increased risk of disasters and crises.

**Keywords:** community engagement, emergency management, equitable engagement.

## **Recovery Pathways under Constraints: A Longitudinal Livelihood-Based Analysis of Post-Disaster Housing in the Self-Recovering Communities in the Philippines**

*Isaac Besarra (University of Twente), Eefje Hendriks (University of Twente), Marc van den Homberg (University of Twente), Karin Pfeffer (University of Twente)*

Livelihoods often form the foundation for housing and settlement. They are inseparably linked to the social and economic functions of housing and households' mental and physical well-being during post-disaster reconstruction. However, the interplay between housing and livelihood remains poorly understood and has yet to be fully operationalised in the housing sector of humanitarian programming. Drawing on a longitudinal study in self-recovering communities across the Philippines, the study will explore the sustainable livelihood patterns over time, providing insights into how obstacles such as poverty, insecure land tenure, informal employment, and spatial exclusion affect households' rebuilding ability after a disaster. The expected findings aim to collect empirical evidence of long-term housing outcomes of self-recovering communities. The research also fills the evidence gap in understanding how cultural norms, local priorities and decision-making shape recovery trajectories across different contexts. It contributes to the growing body of work shifting towards understanding how humanitarian organisations support self-recovery processes without undermining local agency.

**Keywords:** self-recovery, humanitarian assistance, livelihoods, housing, longitudinal.

## **Segmented Trust and Societal Resilience: How Information Divides Shape Vulnerability in Cascading Crises**

*Gintarė Gulevičiūtė (Mykolas Romeris University)*

Societal resilience in cascading crises depends not only on infrastructure and institutions but also on how different publics interpret risk information, assess credibility, and coordinate action under uncertainty. This research examines how segmented trust in science and information sources shapes vulnerability and adaptive capacity during crises, drawing on nationally representative survey data from Lithuania (N = 1,005).

Audience segmentation based on trust in science, engagement with scientific information, media use patterns, and orientations toward misinformation identifies four distinct groups: Science Enthusiasts, Mainstream Science Supporters, Alternative Source Believers, and Science Disengaged. While aggregate trust in science is relatively high, the findings indicate pronounced differences in how groups evaluate expert guidance, process uncertainty, and respond to warnings. Trust is embedded in media ecologies: some groups rely primarily on institutional sources and align with expert recommendations, supporting coordinated response, while others display selective trust and heavier reliance on social media and alternative channels, increasing exposure to misinformation cascades during emergencies. A further vulnerability emerges among low-engagement publics who encounter science and risk information only incidentally, which can delay awareness and reduce preparedness. Beyond trust, engagement is linked to resilience-relevant dispositions. Higher engagement is associated with stronger intrinsic motivation to learn about science, higher confidence in the media's ability to inform about science, and greater propensity toward nature-friendly behaviour, suggesting that informational engagement is connected to behavioural readiness and longer-term adaptive capacity.

These patterns indicate that cascading crises are amplified when disrupted information flows interact with pre-existing trust divides. Misinformation does not only mislead individuals; it can fragment collective response, weaken compliance with protective measures, and generate secondary social disruptions. The results support resilience planning that treats communication capacity as a core element of preparedness. Differentiated communication approaches are needed to reduce misinformation-driven cascades and strengthen inclusive resilience across diverse publics, consistent with recent calls to move beyond one-way deficit models toward audience-aware engagement and credibility-building.

**Keywords:** societal resilience, information vulnerability, cascading crises.

#### **4.4. Economic Resilience and Postdisaster Reconstruction**

##### **Preparedness Capacity-Development for Social Vulnerability Reduction: Evidence from Disaster Scenarios in Europe**

*Kristi Nero (University of Tartu), Orru Kati (University of Tartu), Sten Hansson (University of Tartu), Matthieu Branlat (SINTEF), Nathan Clark (Vrije University Amsterdam)*

While capacity development in the field of disaster risk management should be evidence-based, institutional capacity building is rarely rooted in a thorough vulnerability analysis. A disaster preparedness capacity development framework by Orru et al. (forthcoming) foresees the analysis of social vulnerabilities emerging in disaster scenarios to uncover the most acute gaps in existing preparedness measures, disaster governance, critical infrastructure and services, communication, and engagement. The aim of this paper is to show how to identify hazard scenarios, people in vulnerable situations, and critical services/assets located in hazard-prone areas to uncover preparedness capacity gaps at different levels of disaster governance. We apply the framework to analyse three disaster scenarios: flood combined with a chemical spill in Rotterdam (Netherlands), earthquake in Malta, and tropical storm in La Reunion (France). The analysis demonstrates that specifying the social and systemic vulnerabilities in specific hazard scenarios reveals capacity areas that need to be developed for mitigating or alleviating these vulnerabilities in specific disaster management systems. To enhance preparedness, scenario-based social vulnerability assessments set a critical foundation for disaster management capacity development.

**Keywords:** preparedness capacity development, scenario analysis, vulnerability assessment.

##### **Sustaining Inter-Organisational Cooperation in Post-Disaster Recovery in Italy**

*Lavinia Damaschin (University of Groningen), Rafael Wittek (University of Groningen), Francesca Giardini (University of Groningen)*

An ineffective or incomplete post-disaster recovery not only reduces the immediate liveability of affected areas, but can also increase the vulnerability of communities. In this sense, recovery is closely linked to social resilience: when a community fails to recover effectively, pre-existing vulnerabilities tend to be reinforced, increasing exposure and susceptibility to future shocks. Conducting an effective recovery is therefore essential to avoiding or reducing future disaster risk.

Recovery is a complex and long-term phase that involves multiple organisations working together under conditions of uncertainty, interdependence, and changing priorities. These characteristics make network forms of governance particularly relevant during recovery, as no single organisation is able to manage the process alone. At the same time, recovery is marked by a gradual transition from extraordinary, emergency-related tasks to more ordinary practices. This transition creates governance challenges, especially in terms of coordination.

For these reasons, this paper analyses how inter-organisational cooperation is structured and sustained during long-term recovery. Empirically, the study draws on qualitative expert interviews with key public actors including municipalities, Special Recovery Units, ministries, and regional seismic authorities involved in post-earthquake recovery in three Italian cases: L'Aquila (2009), Emilia-Romagna (2012), and Central Italy (2016). By analysing administrative complexity, decision-making processes, and the roles of different actors, the paper focuses on the coordination challenges that emerge during the recovery phase. It then analyses how organisations respond to these challenges by developing coordination mechanisms and practical tools. These findings contribute to debates on societal resilience by highlighting governance and coordination as key determinants of resilient recovery.

**Keywords:** post-disaster recovery, inter-organisational networks, resilience, governance, sustainable cooperation.

### **Future Cost of Climate Change for Humanitarian Crises**

*Juha-Pekka Jäpölä (European Commission), Anna Berlin (Netcompany external service provider of European Commission), Charlotte Fabri (University of Antwerp), Arthur Hrast Essenfelder (European Commission (Joint Research Centre)), Sepehr Marzi (European Commission (Joint Research Centre)), Karmen Poljanšek (European Commission (Joint Research Centre)), Steven Van Passel (University of Antwerp), Michele Ronco (European Commission (Joint Research Centre)), Sophie Van Schoubroeck (University of Antwerp)*

Humanitarian crises are the tip of the iceberg in climate change adaptation, yet their future is rarely quantified in human and economic terms. We use machine learning to simulate future estimates of people in need of humanitarian aid and required funding under the business-as-usual scenario (SSP2-RCP4.5) with warming of 2.1–2.4°C by 2100. Humanitarian needs rise to a baseline of 410 million people and USD 64 billion annually by 2050 worldwide, increases of 28% and 30% respectively compared to the current (320 million people and USD 49 billion). A lightly optimistic simulation holds needs near the current, while a medium pessimistic simulation leads to 614 million people and USD 96 billion by 2050, increases of 92% and 96% respectively. Our results show empirical vulnerabilities and an opportunity cost, as resources for crisis response displace funding for adaptation and mitigation. Yet, sustained investment could curb the impacts even with climate inertia.

**Keywords:** climate change, economics, humanitarian aid, multi-risk, people in need, machine learning.

### **Between Suspension and Re-appropriation: Rhetorics and Politics of Reconstruction in Central Italy after the 2016–2017 Earthquakes**

*Enrico Mariani (University of Urbino "Carlo Bo")*

The earthquakes that struck Central Italy between 2016 and 2017 constitute one of the most significant socio-ecological disasters in recent Italian history. The so-called seismic “crater” spans four regions

(Marche, Lazio, Abruzzo, and Umbria) and encompasses more than 140 municipalities, all of which are affected by long-standing processes of political-economic marginalization and depopulation characteristic of European fragile rural areas. Within an emergency framework that has never been fully resolved – further compounded by the COVID-19 pandemic from 2020 onwards – nearly a decade after the seismic events, everyday landscapes remain marked by inaccessible Red Zones, temporary facilities hosting shops and public services, and emergency housing units provided by the Italian Civil Protection system. This paper draws on long-term ethnographic research on dwelling practices in post-disaster contexts, focusing on forms of habitation shaped by processual, uneven, and discontinuous adaptations to emergency urban planning. From a discursive perspective, dwelling emerges as a key analytical lens through which to interpret the post-disaster condition as an entanglement of unresolved issues and overlapping temporalities, concerning both the present and the future of the relationship between local inhabitants and territories that were already politically marginal, economically impoverished, and demographically declining before the disaster – trends that the seismic events have further accelerated. The paper presents selected findings from the ethnography, with particular attention to: (1) the relationship between institutional rhetorics of the reconstruction and the everyday life of a marginal rural area affected by the earthquake; and (2) grassroots initiatives that position themselves in a critical dialogue with official reconstruction policies and narratives. In the face of a highly technicised reconstruction process, the civic practices demand greater transparency, participation, and shared decision-making. They also reveal a persistent tension between strong place attachment and deepening distrust toward institutions – a tension exacerbated in the post-disaster context and one that calls for analytical and political engagement beyond the prevailing emergency-driven framework.

**Keywords:** rural areas, ethnography, rethorics, dwelling, grassroots initiatives.

[Parallel sessions 5.1.-5.3 | Roundtable discussion 2 | Workshop 3](#)

## 5.1. Volunteering and Civic Engagement

### The Role of Volunteers in the 6 February 2023 Kahramanmaras Earthquake

*Burcak Basbug (Middle East Technical University), Nazli Gokalp (METU and Texas A&M), Ali Alper Yonel (Middle East Technical University Statistics), Mehmet Ali Erkan (Middle East Technical University)*

This study investigates the role of volunteers in the field, supporting the earthquake survivors after 6 February 2023 Kahramanmaras earthquake (a.k.a Turkiye-Syria earthquake). Tzu Chi Foundation has its volunteers based in Istanbul. They quickly organised and deployed their volunteers to the earthquake area within the next 24 hours following the earthquake. The volunteers stayed in the area for approximately six weeks. The engagement of the Tzu Chi volunteers with the disaster-affected communities, with the local governments and with other NGOs/INGOs, building trust, sharing emotions and communication, has been surveyed by interviewing the volunteers in June and August 2025. The findings of the interviews have been analysed in MAXQDA via a qualitative approach and SPSS produced a descriptive analysis for the quantitative part of the survey with demographics. The results demonstrate that volunteerism following the 6 February 2023 earthquakes functioned as a multidimensional process. It fostered personal transformation, strengthened social bonds, and enabled collaborative action across diverse actors. Volunteerism emerged not only as a response to

immediate needs but also as a mechanism for rebuilding trust, meaning, and collective resilience in post-disaster contexts. The findings also suggest that post-disaster volunteerism operates as a process shaped by youth participation and cultural alignment. The models demonstrate that these social and cultural dimensions explain substantially more variance in community cohesion than demographic characteristics alone. Rather than functioning solely as a mechanism for aid delivery, volunteerism contributes to the reconstruction of social relationships, civic engagement, shared meaning, and collective resilience in disaster-affected communities.

**Keywords:** volunteers, trust, earthquake, resilience.

### **Civil-Military Cooperation in Cascading Crises**

*Rasa Smaliukienė (General Jonas Žemaitis Military Academy of Lithuania), Vidmantė Giedraitytė (General Jonas Žemaitis Military Academy of Lithuania)*

Resilience in the face of cascading crises requires more than technical solutions. It demands inclusive governance, adaptive coordination, and effective risk communication. The 2021 migration crisis on Lithuania's border with Belarus, recognised by the EU as a hybrid attack, shows how interconnected risks can threaten national security and social stability. This case study examines how Lithuania strengthened its resilience through civil-military cooperation during this politically driven emergency.

Using a qualitative case study approach, the analysis identifies three mechanisms that enhanced adaptive capacity: (i) the establishment of a unified communication channel to maintain situational awareness; (ii) the deployment of liaison officers at strategic and operational levels to accelerate decision-making; and (iii) coordinated public communication to counter disinformation campaigns. Military engagement complemented civilian capabilities in areas requiring specialized expertise, including engineering for border infrastructure, logistics for migrant camp setup, and strategic communication to mitigate hostile narratives.

The case demonstrates characteristics of a cascading crisis: an initial migration flow triggered legal, security, and information challenges, compounded by the concurrent COVID-19 pandemic. These dynamics underscore the need for integrated resilience strategies that combine governance flexibility, cross-sector coordination, and risk communication. Lessons from Lithuania demonstrate how small states can respond to hybrid threats and cascading crises through cross-sectoral collaboration.

**Keywords:** cascading crises, hybrid threats, civil-military cooperation, risk communication.

### **Which Anticipatory Action projects to Scale and How: A Scoping Review**

*Angelina Heil (University College Dublin), Marlon Krippendorf (Freie Universität Berlin), Ronan McDermott (University College Dublin)*

The humanitarian system currently stands at a crossroads: while needs are rising due to intensifying compounding and cascading crises, budgets are shrinking, necessitating a fundamental operational paradigm shift. Anticipatory Action (AA) has emerged as a critical innovation in this context, challenging the traditional reactive model of humanitarian action through pre-planned and pre-funded interventions triggered by parametric early warning systems. Both academic and grey literature indicate that AA programming, compared to conventional humanitarian action, meaningfully enhances local resilience while, at the program level, increasing the efficiency and cost-effectiveness of humanitarian

interventions. Yet, despite the substantive literature, the discourse lacks a structured analytical approach to guide the transition from isolated pilots to systemic scale. This paper addresses this gap by applying the concept of scaling as defined and differentiated by ExpandNet and WHO to a scoping review, performing a relevant deductive content analysis of AA literature. Specifically, the study distinguishes between pathways for horizontal (expansion), vertical (institutionalisation), and functional (diversification) scaling and will illustrate which AA projects have been scaled up and how. Via a systematic screening procedure, relevant academic and grey literature is identified for qualitative and quantitative content analysis.

The findings will offer a novel conceptual lens for stakeholders, moving beyond the normative argument for why AA should be scaled, to providing evidence-based guidance on how specific programs can be scaled effectively.

**Keywords:** anticipatory action, scaling, humanitarian innovation, program management.

### **"Building Resilience from Below": A Civic Engagement Partnership Model in Oforikrom Municipality, Ghana**

*Anthony Appiah (Ghana National Fire Service)*

This presentation presents a ground-up model for building societal resilience through structured civic engagement, as demonstrated in the Oforikrom Municipality, Ghana. Facing persistent fire risks in a dense urban environment encompassing a major university and over 200,000 residents, we moved beyond conventional top-down response by architecting a polycentric partnership network that activates and coordinates existing community assets. The core of the model is the formal integration of local civic structures as co-producers of resilience. Assembly Members and Unit Committees across all 15 electoral areas serve as the critical nexus, embedding fire safety into local governance dialogue. Faith leaders transform churches and mosques into hubs for risk communication, particularly before high-risk festive seasons. Local media and information centres act as force multipliers, ensuring message saturation. This network, partnered with municipal technical departments, creates a resilient social fabric where risk reduction becomes a shared, everyday responsibility. The outcomes demonstrate the potency of investing in social capital. Over two years, this civic partnership led to a 35-40% reduction in domestic fires, a significant rise in voluntary compliance, and stronger trust between the community and official services. The program operates at an annual cost (~GHS 50,000) that is a fraction of disaster response, proving a 1:10 cost-benefit ratio. This case provides definitive evidence that funding and formalizing "resilience from below" is not merely participatory – it is a highly effective and economical strategy for sustainable disaster risk reduction.

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**Keywords:** civic engagement, polycentric governance, Community-Based Disaster Risk Reduction (CBDRR), public-private-community partnership, resilience from below.

## 5.2. Health, Preparedness, and Community Resilience

### **Integration of Broad Health Impacts in EU Disaster Pandemic Preparedness Plans: A Review**

*Mark Bosmans (Netherlands Institute for Health Services Research (Nivel)), Elske Marra (National Institute for Public Health and the Environment (RIVM)), Silke Drieman (Vrije Universiteit Amsterdam), Senne de Winter (Vrije Universiteit Amsterdam), Marjonneke de Vetten (GGZ Noord-Holland Noord), Michel Dückers (University of Groningen)*

In the aftermath of the COVID-19 pandemic, there has been much attention for its broad health impact on the wider population, for instance its impact on youth mental health. Many countries have written or revised pandemic preparedness plans incorporating lessons from the COVID-19 pandemic.

The objective of this study is to provide an overview of the level of integration of broad health considerations in post COVID-19 pandemic preparedness plans of EU countries. We examined integration in two ways: 1) monitoring the impact of the pandemic (and the measures) on broader population health; 2) including these broader population health effects in decision making regarding the implementation of measures.

**Methods:** A systematic literature search was conducted to identify the relevant pandemic policy documents of EU countries. This search was conducted in relevant databases (e.g., Google Scholar and Policy Commons) and on governmental and public health authorities' websites. Inclusion criteria were: national pandemic preparedness plans/strategies or health preparedness plans; from EU countries; published after 2020. Coding was based on the WHO HEPR frameworks domain of community protection.

**Results:** we included 12 preparedness plans from 10 EU countries. Findings indicate that there is a general recognition of the broad health effects of pandemics, as most plans at least mention some aspects of this broader impact when discussing the effects of a potential pandemic. However, the majority of the plans still lack operationalisation of addressing these effects and do not describe how these inform decision-making or how these effects are to be monitored during a future pandemic and monitoring strategies.

**Conclusion:** The analysis shows that most countries have not significantly broadened the focus during a pandemic from mainly epidemiology to include the indirect or prolonged health effects. This signifies that the risk of a repeat of the approach used during the COVID-19 pandemic is high.

**Keywords:** pandemic preparedness, broad health impact, decision-making, monitoring.

### **Community Resilience: Collective Efficacy in Psychosocial Crisis Management**

*Verena Flörchinger (Berlin School of Economics and Law)*

Past disasters highlight the complex challenges societies face in responding to extreme events. The urgency of these challenges is further amplified by the increasing frequency and intensity of extreme climate and weather events. It has become evident that managing such events cannot rely solely on technical or infrastructural measures. Psychosocial dimensions play a critical role in crisis trajectories but remain insufficiently integrated into disaster management and are often addressed primarily at the individual level. The theoretical framework of community resilience, as proposed by Norris et al., offers an extended perspective by conceptualizing community resilience as emerging “from a set of

networked adaptive capacities” (2008). Community resilience thus constitutes a dynamic configuration of interconnected resources that enables communities to respond to crises, adapt to changing circumstances, mitigate harm, and evolve over time.

The study draws on this framework in examining the 2021 flood disaster in Germany, exploring which factors strengthen community resilience and the associated opportunities and challenges for psychosocial crisis management. Based on a literature review, qualitative interviews, and focus group discussions, the analysis investigates how affected communities respond to psychosocial stressors, mobilize resources, and develop short-, medium-, and long-term coping strategies. The findings indicate that informal networks and civil society engagement constitute key resources for psychosocial crisis management. These structures possess significant potential to alleviate acute stress, foster collective efficacy, and promote long-term social transformation. The presentation will highlight the main findings and discuss how psychosocial crisis management can intentionally establish enabling conditions to systematically support collective resilience processes.

**Keywords:** community resilience, psychosocial crisis management, flood, qualitative research.

### **Dynamics of Water Risk: Healthcare Provider Perspectives on Successive Cyclones, Cholera, and Drought in Malawi**

*Shahar Livne (Ben-Gurion University of the Negev), Moses Banda Aron (Health/Abwenzi Pa Za Umoyo, Neno, Malawi), Matamando Mwendera (Partners in Health/Abwenzi Pa Za Umoyo, Neno), Nadav Davidovitch (Bar-Ilan University), Fabien Munyaneza (Partners in Health/Abwenzi Pa Za Umoyo), Anat Rosenthal (University of the Negev)*

**Background:** Global frameworks advocate for a shift from single-hazard to multi-hazard perspectives. However, health research remains predominantly focused on multi-hazards assessment and preparedness and empirical studies on managing compounding risks in the global South remain scarce. Malawi represents a critical case where rapid shifts between water-related disasters create cascading vulnerabilities, requiring fundamental adaptations in healthcare operations.

**Objectives:** This study explores how healthcare providers in southern Malawi perceive the shifting dynamics and pathways of water-related risks during a sequence of multi-hazard events, including cyclones, cholera outbreaks, and drought.

**Methods:** We conducted a qualitative study in 2024 in Neno and Chikwawa Districts following Cyclones Ana (2022) and Freddy (2023), a prolonged cholera outbreak (2022–2024), and a severe drought (2024). Thirty-three in-depth interviews were conducted with healthcare providers across all system levels. Data were analysed using thematic analysis and framework mapping to identify risk pathway interactions.

**Results:** Participants identified three intersecting water-risk pathways: (1) Flooding: Cyclones triggered displacement into overcrowded camps with poor sanitation, crop loss, the destruction of water infrastructure, and reduced healthcare access. (2) Contamination: Water contamination stemming from both cyclones and drought facilitated the deadliest cholera outbreak in Malawi’s history, while economic vulnerabilities hindered infrastructure reconstruction. (3) Scarcity: Drought exacerbated existing food insecurity caused by previous floods. Both cyclones and drought created severe water shortages for consumption and hygiene. Dwindling water levels increased pathogen concentration and the use of unsafe sources, driving further outbreaks of diarrheal and skin diseases.

Conclusions: The escalation of these hazards into disasters was rooted in pre-existing structural vulnerabilities. The rapid succession of events prevented the recovery of water and sanitation infrastructure, compounding risks of malnutrition and disease. Analysing water risks through the perspective of healthcare providers reveals not only the dynamics between hazards but also the shifting nature of disaster vulnerability. These insights highlight the urgent need for resource allocation strategies that prioritize long-term infrastructure recovery to protect health and wellbeing.

**Keywords:** cholera, cyclone, health policy, Malawi.

### **Who Are Warnings For? Refugees and Practitioners' Experiences of UK Warnings during the COVID-19 Pandemic and 2024 Summer Riots**

*Mhari Gordon (University College London)*

This paper examines the current state of warnings in the UK, highlighting their continued reliance on technocentric and hazard-focused approaches that prioritise rapid dissemination over engagement with social context and lived experience. Drawing on experiences from refugees and practitioners of the COVID-19 Pandemic and the 2024 Summer Riots, it demonstrates how the warnings often failed to reflect what people actually need warnings for. The paper argues that warnings need to move beyond a narrow focus on hazards to incorporate vulnerabilities that are produced and sustained through processes of structural marginalisation. This research critically examined the impact of policies on refugees' daily lives, who can experience everyday challenges, including language barriers, digital exclusion, precarious accommodation, and limited trust in authorities, and its impact in shaping both the need for warnings and their capacity to act upon them. A key finding from the research highlights the role of voluntary and community organisations in the contextualisation and dissemination of warnings. These findings may have potential relevance to other marginalised groups and different contexts. Ultimately, if certain groups are excluded from warnings, the preparation for, response to, and recovery from disasters will continue to fail or be limited.

**Keywords:** warnings, refugees, volunteer organisations.

### **5.3. Preparedness Frameworks and Capacities**

#### **Translating the “Whole-of-Society” Approach: Towards a Danish Framework for Societal Resilience**

*Rasmus Dahlberg (Roskilde University)*

Confronted with escalating risks stemming from climate change, complex technological interdependencies, and hybrid threats below the threshold of armed conflict, Denmark is reorganizing its approach to national security and societal resilience. Recent initiatives – including military rearmament, new preparedness legislation, and the establishment of a Ministry for Societal Security and Preparedness – represent important steps in this direction. Yet these developments remain fragmented in the absence of a comprehensive policy framework. Both the European Union and NATO employ a “Whole-of-Society” approach to integrate public, private, and civil-society capabilities in the pursuit of societal security. This paper delineates the concept of “Whole-of-Society” within European and Nordic preparedness policy contexts, assesses its relevance and applicability to Denmark, and

contributes with a conceptual framework to guide policymakers and practitioners in enhancing Denmark's societal resilience.

**Keywords:** whole-of-society, preparedness, total defence, resilience, societal security.

### **Inclusive Disaster Risk Management for People with Physical Disabilities: Barriers and Enablers of Effective Inclusion**

*Ida Joao-Hussar (University of Tartu), Oliver Nahkur (University of Tartu), Kati Orru (University of Tartu)*

People with physical disabilities (PPD) experience heightened vulnerability during disasters due to mobility limitations, barriers in communication, fragmented services, and institutional blind spots. Although international frameworks such as the UNCRPD and the Sendai Framework call for disability inclusive disaster risk management (DRM), practical inclusion remains inconsistent. This article synthesizes evidence from 32 studies in a scoping review to analyse which inclusion activities are used in DRM, how they align with different levels of engagement, and which factors enhance or hinder their effectiveness.

The findings show that inclusion activities fall into five areas: risk and crisis communication, crisis planning, adjustment of services, infrastructure adaptation, and institutional work adjustments. Mapping these activities onto the ladder of disability inclusion – informing, consulting, collaborating, and empowering – reveals that most practices remain at the two lowest levels. Activities that meaningfully reduce vulnerability and strengthen resilience, such as co creation of services or institutional reforms, are rare.

Effectiveness is shaped by multi level factors. Individual factors include PPD knowledge, risk awareness, communication skills, health status, and psychological readiness. Institutional factors – coordination, staff competencies, organisational culture, resources, and regulatory clarity – emerge as the most influential determinants across all inclusion areas. Social contextual factors include family and community support, social attitudes, and social capital, which can either enable participation or deepen exclusion. Situational factors, such as hazard type and urgency, influence whether inclusive adjustments are possible under time pressure.

The review highlights substantial gaps between policy aspirations and practice. To advance disability inclusive DRM, inclusion activities must move beyond basic information provision toward collaborative and empowering approaches that recognise PPD as active agents in crisis preparedness and response. Strengthening regulatory frameworks, institutional capacities, inter agency collaboration, and community based support systems is essential for reducing vulnerability and ensuring that no one is left behind in disaster situations.

**Keywords:** inclusive disaster management, people with physical disabilities, resilience.

### **Health Services as Civil Defence Infrastructure in War and Hybrid Threat Environments**

*John Wells (South East Technological University), Florian Scheibein (South East Technological University)*

Open war and conflict can initiate a cascading crisis such as population displacement, food and water insecurity, mass casualty events and public health collapse. Health services are recognised as

essential components of civil defence in the context of a new European threat environment referenced to hybrid threats, conflicts and war. Since 2014, Europe has experienced sustained hybrid attacks, including cyber operations, disinformation, and attacks on critical healthcare infrastructure such as that which took place in Ireland in 2020. Since 2022, Ukrainian health services have been a significant target in the context of kinetic warfare. Such attacks highlight the strategic importance of health services in both societal resilience and resistance. Referencing the recent EU Prevention, Preparedness and Response Plan for Health Crisis (November 2025), this paper examines the preparedness of health services in Europe to meet the challenges posed by current and future war and hybrid threats in terms of their critical role in civil defence. Drawing on a structured review of recent European research and policy literature, this paper focuses on service protection, operational preparedness, workforce resilience, and interoperability between health services, civil protection structures, and military services. The findings reveal a fragmented preparedness landscape across Europe in which war-related and hybrid threat preparedness are treated as exceptional rather than integrated into risk health planning. Preparing healthcare workers in terms of practice under conditions of ongoing war and conflict and accompanying psychological impacts is weak and uneven. Interoperability planning between healthcare services, other civil agencies and military authorities tends to take place at a strategic level rather than operational practice. Some promising approaches are identified where multidisciplinary simulation and formalised civil–military partnerships have been implemented.

Based on these findings, this paper advocates for the recognition and implementation of a preparedness approach that integrates health services as frontline civil defence actors in planning for war and conflict. Operationalising conflict and hybrid threat scenarios into routine training and strengthening workforce protection are essential to safeguard continuity of care in support of societal resilience and resistance in future war, conflict and hybrid threat environments.

**Keywords:** war, resilience, health services, civil defence, preparedness.

## **From Resilience to Readiness: Integration of Whole-of-Society Approach into Nordic-Baltic Crisis Governance**

*Justina Laurinavičiūtė (Kaunas University of Technology)*

Recent crises that the European Union has faced, including the return of conventional warfare to its neighbourhood, not only challenged the European security architecture but also posed a threat to European integrity and cohesion. In light of these developments, the phenomena of the whole-of-society approach, community resilience and total defence became increasingly relevant in the field of study and academic discourse (Wrange et al., 2024). The diverse origin of the crises requires complex and various response mechanisms. As such, examples can be taken from the last couple of decades, when the COVID-19 pandemic threatened the health care sectors; the war in Ukraine has cascaded into multiple, smaller crises impacting the energy, environmental and societal sectors; or the ever-growing issue of climate change, which impacts all aspects of human society. In this study I aim to discuss and analyse the incorporation of civil society into national defence in the Baltic and Nordic countries. Nordic countries have a one-of-a-kind whole-of-society approach towards national defence, an elaborate development of civil preparedness and a general strong trust in society and public engagement (Migliorati, 2024). In light of the increased exposure to various threats, some of which are directly related to the aggressive demeanour of the Russian Federation, a comparative study could

assist in the better understanding of the resilience building and the incorporation of different societal stakeholders in the security architecture. The study incorporates various theories such as the resilience theory, societal security and security culture theory, total defence theory and is based on document and policy analysis and case-specific studies. This study contributes to a broader understanding of the civilian aspect of defence and crisis management.

**Keywords:** whole-of-society, total defence, Baltic-Nordic, polycrises.

### **Roundtable discussion: The Power from Below: Grassroots Organising in Times of Polycrisis**

*Robert Larruina (Vrije Universiteit Amsterdam), Emmeline Roeloffs (Vrije Universiteit Amsterdam), Kees Boersma (Vrije Universiteit Amsterdam), Sonia Matera (Deep Blue)*

The term polycrisis highlights how today's global and local challenges, climate change, the erosion of democratic institutions, and economic and social inequalities do not simply coexist; they are interrelated and mutually reinforce one another. Their interaction generates complex and unpredictable dynamics that affect all levels of society. In these conditions, grassroots initiatives, organisations, and forms of collective mobilisation (hereafter: grassroots organising) play a crucial role as sources of democratic capacity, social innovation, hopeful imaginaries, and societal resilience.

They emerge at the community level and are driven by citizens rather than formalised institutions. They mobilise civic engagement and bottom-up social action, providing spaces for collective mobilisation, resistance, and the articulation of alternative futures – particularly for actors often positioned at the margins of policy and practice but who hold valuable knowledge, experiences, and ideas. By placing individuals and communities at the centre of social change, grassroots organising foregrounds perspectives that are frequently overlooked in institutional decision-making.

A key strength of grassroots organising lies in its ability to operate beyond the temporal constraints of policy cycles, typically four or five years, and beyond short-term or technocratic crisis responses. This flexibility allows grassroots actors to experiment with alternative approaches and develop practices that may later become the norm. At the same time, these bottom-up dynamics raise important questions about their interaction with more traditional, and often necessary, top-down crisis governance.

By mobilising locally grounded knowledge systems and practices, grassroots initiatives can operate within, adapt to, or be adopted by dominant governance frameworks, and propose alternative perspectives on crisis response. This panel explores the role of grassroots organising in advancing crisis prevention and response.

We welcome contributions from conceptual, methodological, and empirical perspectives, and particularly encourage submissions that foreground lived experience, community-based practices, and critical reflections on power, knowledge production, and decolonial approaches.

**Keywords:** grassroots, hopeful imaginaries, civic engagement, societal resilience.

## **Workshop: Multi-Criteria Decision-Making as a Decision-Support Tool for Building Disaster Resilience: Role-Play Exercise in Roskilde Fjord, Denmark**

*Holly Faulkner (University College Cork), Kaija Jumppanen Andersen (Technical University of Denmark), Natascha Ng (Stockholm Environment Institute), Samuel Juhel (ETH Zurich), Lydia Cumiskey (University College Cork)*

A core part of building societal resilience to disasters is through pre-disaster decision-making. However, making decisions around implementing measures for both disaster risk management (DRM) and climate change adaptation (CCA) is complex and requires balancing different interests and priorities across stakeholders including citizens.

The DIRECTED project is advancing Multi-Criteria Decision-Making (MCDM) as a decision-support tool for building resilience and exploring the impacts of different measures that can be introduced pre-disaster. The tool has been explored in the Roskilde Fjord area in the Capital Region of Denmark by working closely with stakeholders (both from emergency response agencies and municipalities) within their Real-World Lab. The Roskilde Fjord was significantly impacted by Storm Bodil/Xaver in 2013, and subsequently there has been a focus on preparing for future flooding and extreme weather events. The MCDM application supports stakeholders' reflections on implemented, planned and potential DRM and CCA measures, assists them to identify objectives and rank different criteria including cost, public acceptance, environmental, and social benefit. This is a shift away from purely cost-benefit analysis towards value-led decisions, recognising the complexity of addressing DRM and CCA measures. This will be an interactive workshop where participants are introduced to the MCDM approach and engage in a role-play exercise based around DRM and CCA in the city of Frederikssund in the Roskilde Fjord area. Participants will learn the steps of the MCDM process through the Danish scenario, consider objectives from different perspectives and engage in reflective discussions around decision-making in their context. There are no tech requirements or max number.

**Keywords:** multi-criteria, decision-making, role-play disaster, resilience.

[Parallel sessions 6.1.-6.2](#) | [Roundtable discussion 3](#) | [Simulation 2](#)

### **6.1. Community Knowledge and Informal Systems in Disaster Resilience**

#### **COVID-19: Challenges Faced by Formal and Informal Waste Collectors in the Global South**

*Nishara Fernando (University of Colombo)*

Countries in the Global South are often vulnerable to man-made shocks such as wars and economic downturns, alongside natural hazards like floods and tsunamis. The COVID-19 pandemic further exacerbated these challenges, acting as a biological disaster that severely impacted people's lives in these regions. Multiple macro-level shocks created various stresses and risks that combined with the inherent vulnerabilities of marginalised groups, including minority ethnic and caste populations, as well as those affected by gender inequality. This situation forces socially vulnerable groups to remain trapped in a cycle of intergenerational poverty. Unfortunately, these groups often receive little attention; they are difficult to identify, and even when identified, there are typically no effective programs in place to help them escape this cycle. Sri Lanka exemplifies this issue, having endured 30 years of civil war, the 2004 tsunami, the COVID-19 pandemic, and a subsequent economic collapse, among other

challenges. Against this backdrop, this study investigates the challenges faced by formal and informal waste collectors before, during, and after COVID-19. The research includes fieldwork conducted in two local councils in Colombo, Sri Lanka, from 2018 to 2025, gathering both primary and secondary data from relevant stakeholders, including the waste collectors themselves.

The findings indicate that total waste production decreased due to lockdowns and reduced commercial activity; however, medical waste increased significantly. The widespread use of masks, gloves, and single-use plastic sanitiser bottles further strained municipal waste systems. The informal waste sector was completely restricted from operating during this period, leading to decreased recycling rates and overall inefficiencies in waste processing.

One of the primary issues identified was a shortage of waste workers due to COVID-19 infections, which resulted in fewer collection days and led to an accumulation of waste in households. This situation persisted as garbage was left uncollected for extended periods. Another major concern was the improper disposal of medical waste, with many households unintentionally mixing infectious waste with regular waste, thereby exposing waste workers to infections. Additionally, the limited role of Public Health Inspectors (PHIs) in waste management was highlighted as a significant concern, along with a rise in illegal dumping and open burning of waste.

**Keywords:** COVID-19, waste, informal workers, Global South.

### **Guidelines for the Development of a Flood-Resistant Building Code for Nepal**

*Eefje Hendriks (University of Twente), Rabin Chaulagain (National Disaster Risk Reduction and Management Authority), Rupesh Shrestha (Catholic Relief Services), Alberto Martinetti (University of Twente)*

Despite frequent recurrence of destructive floods in the south of Nepal, no flood-resilient building code has been established. This study provides state-of-the-art recommendations for the development of a flood-resilient housing building code for Nepal, seeking consensus in the building codes from Pakistan, Sri Lanka and India with comparable construction practices and geographical locations. Scientific and grey literature is studied to verify the scientific foundation of guidelines in the building codes and identify additional guidelines. Identified guidelines for flood-resistant housing and disagreements are qualitatively and quantitatively evaluated on their suitability and significance for Nepal by an expert panel with extensive experience in the design and construction of flood resilient housing in Pakistan, India and Nepal. Findings indicate clear consensus on the vulnerability indicators leading to a flood vulnerability assessment matrix. Further research is needed to integrate vernacular designs. This study presents a list of recommendations to guide future development of the flood resistant building code for Nepal.

**Keywords:** building code, flood, Nepal, housing, resilience.

### **Local Knowledge, Unequal Resilience, and Disaster Risk Governance in Flood-Prone Nigerian Communities**

*Dorcas Olawuyi (University of Hamburg), Adeniyi Gbadegesin (University of Ibadan), Dickson Ajayi (University of Ibadan), Peter Oyedele (University of Ibadan), Ibrahim Amuda (Nigeria Red Cross Society)*

Across the Global South, disaster risk reduction is often framed through technical policies that overlook socially embedded forms of resilience. This paper examines how Indigenous Environmental Knowledge

(IEK) enables community-led adaptation to recurrent flooding in Nigeria, drawing on evidence from 36 focus group discussions (n = 362) conducted across nine communities within the Yorùbá, Nupe, and Igbo ethnolinguistic regions. Participants included women, youth, elders, and persons with disabilities, allowing for a critical analysis of how resilience and vulnerability vary across marginalised groups. Findings show that resilience operates across three interlinked domains: practical engineering improvisations; collective governance through àjòṣe, kinship obligations, town-crier networks, and age-grade mobilisation; and spiritual and ethical practices that frame floods as ancestral, environmental, or divine phenomena. IEK also supports hybrid early-warning systems, where ecological signals are increasingly combined with radio and phone alerts, demonstrating anticipatory action rooted in lived experience. The analysis reveals that risk is unevenly distributed, with vulnerability differing between urban, semi-urban, and rural contexts, as well as among social groups. While women emphasise food, children, and caregiving, persons with disabilities rely heavily on kinship-based evacuation support. Despite recurring losses, communities reject relocation due to identity, livelihoods, and ancestral ties. The study argues that IEK acts as a culturally legitimate disaster governance system and calls for risk frameworks that integrate local knowledge with inclusive, anticipatory resilience strategies.

**Keywords:** Indigenous Environmental Knowledge, community resilience, culture, anticipatory action.

### **Shifting Modes of Networked Crisis Governance: Cross-Sector Coordination in the Nordic COVID-19 Response**

*Andreas Hagedorn Krogh (Roskilde University), Svante Aasbjerg Thygesen (Roskilde University), Kerstin Eriksson, Olof Oscarsson (Lund University; Mid Sweden University), Ann-Torill Tørrisplass, Christian Lo (Nord University)*

The COVID-19 pandemic posed a critical stress test for the Nordic crisis management model, which is anchored in the responsibility principle whereby sectoral authorities retain their sectoral responsibility during crises. While this principle promotes continuity, expertise, and sectoral ownership, it has also been criticized for producing fragmentation, weak shared situational awareness, and delayed action in transboundary crises. Against calls for wholesale centralization, this study examines how Sweden, Norway, and Denmark adapted their crisis governance arrangements during COVID-19 to reconcile decentralized responsibility with the need for coherent coordination.

Drawing on a comparative qualitative analysis of official reports, policy documents, and interviews, the study applies network governance theory to trace how coordination mechanisms evolved across different phases of the pandemic. Using Provan and Kenis's typology of network governance forms, the analysis shows that the three countries followed distinct yet dynamic trajectories of crisis governance. Sweden relied primarily on participant-governed, trust-based coordination among autonomous agencies; Norway activated a lead-organization model centred on health authorities; and Denmark temporarily established highly centralized, NAO-like coordination structures. Importantly, these arrangements were not static but shifted over time in response to changing uncertainty, urgency, and political pressures.

The study advances crisis governance theory by introducing the concept of temporal hybridity: the capacity of governance systems to move between decentralized and centralized coordination modes as crises evolve. It further reinterprets the Nordic responsibility principle as an adaptive institutional logic that enables flexible reconfiguration without institutional rupture. Empirically and theoretically,

the findings contribute to debates on societal resilience by showing how networked crisis governance can balance flexibility, legitimacy, and coherence in prolonged and cascading crises.

**Keywords:** crisis governance, network governance, cross-sector coordination, Nordic crisis management, responsibility principle.

## 6.2. Communication Systems and Trust

### The Role of Trust in Shaping Public Perceptions of Crisis Preparedness and Recovery

*Jurgita Jurkevičienė (Kaunas University of Technology)*

Trust is widely recognized as an important determinant of public responses to crises, shaping perceptions of preparedness and expectations for recovery. This presentation investigates the impact of institutional and societal trust on public assessments of crisis preparedness and recovery in Lithuania. The analysis utilises data from a nationally representative public opinion survey conducted as part of the Lithuanian Research Council-funded project RECONNECT (Contract No. S-VIS-23-14). Statistical analysis demonstrates that higher levels of trust in national institutions' ability to respond effectively to emergencies are significantly associated with more favourable perceptions of overall national crisis preparedness and recovery capacity, including responses to natural disasters, pandemics, and economic crises. Conversely, aspects of societal trust, such as perceptions of resilience to misinformation, do not exhibit a statistically significant effect on these evaluations. These findings underscore the central role of institutional trust in enhancing public confidence during crises and emphasise its significance for effective crisis governance and communication.

**Keywords:** institutional trust, public perception, crisis preparedness, crisis recovery, survey data.

### Speaking Risk into Action

*Andrew Powell (Centre for Peace and Security)*

How do people collectively make sense of uncertainty and translate that sense into action or inaction? In an era of platformed communication, the same message can stabilise a community or accelerate insecurity. Understanding why some communicative practices support collective protection while others generate panic, polarisation and manipulation is now a core challenge for peace, security and resilience in Europe.

Traditional work on risk perception and risk communication often treats cognitive biases and message accuracy as central determinants of public response. Yet in rapidly mediated environments, where information is generated, shared and transformed in networked spaces, threat and risk evaluation itself emerges through interactional practices. This paper reframes risk communication not as the transmission of messages to isolated recipients but as a set of situated communicative practices that co-produce meaning, emotion and action.

Drawing on extensive empirical analysis from my PhD research on everyday hazard preparedness communication (via Whatsapp), and grounded in an integrated theoretical framework combining practice theory, Vygotsky's notion of mediated action, and a relational account of affective responses under uncertainty, I show that risk perception is constructed in real time through routine talk, negotiation of authority, verification practices and emotional regulation. Specifically, when

communities engage in practices oriented toward verification, mutual clarification and shared responsibility, uncertainty tends toward containment and coordinated preparedness. By contrast, communicative practices dominated by splitting, projection and affective escalation produce polarisation, suspicion and resistance to protective action.

Extending these insights to contemporary human security challenges, the paper highlights how mediated risk communication in digital environments intersects with hybrid threats, misinformation dynamics and social cohesion. Rather than combating misinformation through correction alone, the analysis foregrounds how strengthening everyday communicative practices can enhance collective capacity to navigate uncertainty, sustain trust and support protective action.

This work offers both conceptual reframing, and practical recommendations, for risk communication research and practice in an era defined by mass communication technologies and complex, convergent threats.

**Keywords:** risk, perception, communication.

### **Shaping Public Behavior in Crises: The Role of Municipal Risk Communication Across Emergency Scenarios**

*Stav Shapira (Ben-Gurion University of the Negev), Moran Bodas (Tel Aviv University), Omar Wattad (Tel Aviv University)*

**Background:** Emergency events present significant challenges for both the public and authorities, particularly in the context of decision-making under uncertainty. This study examined the impact of municipal informational messaging on public behavioural intentions during emergency scenarios and evaluated its effectiveness in preventing undesirable actions.

**Method:** A cross-sectional experiment was conducted with 1,509 participants in Israel. Participants were exposed to hypothetical emergency scenarios (forest fire, flooding, extreme weather, hazardous materials, and civil unrest) with or without accompanying municipal messages. Questionnaires measured behavioural intentions (self-help, information seeking, preparedness, rumour dissemination, and convergence to the event scene), as well as risk perception, self-efficacy, conformity, and emergency preparedness.

**Findings:** Municipal messages significantly reduced counterproductive behavioural intentions: mean scores were lower among participants exposed to guidance ( $M=1.62$ ,  $SD=0.76$ ) than among those exposed to rumours alone ( $M=1.72$ ,  $SD = 0.75$ ;  $p=0.009$ ). No significant differences were found between groups in self-help ( $M=3.64$  vs.  $3.66$ ;  $p=0.682$ ) or knowledge-seeking and preparedness behaviour ( $M=3.47$  vs.  $3.40$ ;  $p=0.093$ ). Scenario type strongly shaped behavioural patterns, with wildfires eliciting the highest levels of both self-help and counterproductive intentions. Characteristics such as gender, age, and conformity, significantly predicted behaviour in multivariate models.

**Conclusions:** Findings highlight the need for scenario- and population-tailored risk communication. Municipal messages effectively curb harmful behaviours, but require complementary strategies to build trust and strengthen self-efficacy.

**Keywords:** risk communication, informational messaging, emergency behaviour, municipal authorities.

## **Research Project EQuIP: Experiences in Psychosocial Crisis Management from Three Major European Cities**

*Paul Goesmann (Gesundheitsamt Frankfurt am Main)*

### **BACKGROUND**

Large-scale incidents pose complex challenges for public authorities and emergency services, including the mental health and psychosocial support (MHPSS) and the psychosocial crisis management (PSM). Recent crises, such as the July 2021 floods in Germany, underline that alongside professional emergency services, affected civilians, volunteers, and local groups play crucial roles in crisis response. However, cooperation between state and civil actors presents additional challenges. In an era of increasingly frequent and overlapping crises (polycrisis), state-civil collaboration in psychosocial crisis management is gaining importance. The EQuIP research project examines how community resilience and the capacity of state and civil actors can be sustainably strengthened across different crisis situations.

### **METHOD**

From October 2024 to September 2027, the project will develop an action framework for state-civil society cooperation in PSM and a blended-learning training concept. During the first phase, semi-structured key informant interviews were conducted with psychosocial crisis management experts from Barcelona, Nice, and Prague – cities that managed major incidents in recent years. Interviews took place in July 2025 via video conference and on-site, followed by narrative analysis.

### **RESULTS**

Expert interviews revealed remarkable convergence regarding central themes and challenges in PSM. A key aspect is the political dimension of crisis events and political actors' influence on psychosocial care structures. Experts noted that integrating local groups into crisis management systems can be instrumentalized by political stakeholders, potentially impairing effective involvement. Nevertheless, they emphasized the necessity of proactive networking, particularly connecting long-term mental health services with acute crisis care. Establishing memorials post-crisis proved challenging in all three cities. Good practices included utilizing existing public buildings and personnel for psychosocial support during crises.

### **DISCUSSION**

The EQuIP project addresses current PSM challenges: improving state-civil cooperation and strengthening civil society for complex crisis situations. The action framework will integrate these lessons and propose solutions for identified challenges.

**Keywords:** mental health and psychosocial support (MHPSS), psychosocial crisis management, civic engagement.

## **Debiasing Training Reduces Confirmation Bias in National Risk Analysts**

*Bas Heerma van Voss (Dutch Central Bank), Haewon Yoon (Southern Illinois University), Irene Scopelliti (University of London), Rowena Zweet (Radboud University), Ira Helsloot (Radboud University), Carey Morewedge (Boston University)*

State risk forecasts are crucial for allocating resources to address international and domestic threats such as war, pandemics, and climate change. These risk forecasts largely rely on human judgment, which is often susceptible to cognitive biases. We conducted an experiment involving the majority of national risk analysts in a European country and a matched sample of master's students to compare their susceptibility to confirmation bias and bias blind spot in judgments related and unrelated to national risk. Additionally, we evaluated the effectiveness of a one-shot debiasing training intervention across both samples. We find that analysts exhibit less confirmation bias than students within and outside risk-related judgments. Crucially, a one-shot debiasing training session reduced confirmation bias in both analyst and student groups. These findings suggest that cost-effective debiasing interventions can improve expert judgment in national risk forecasting and provide evidence that experience and expertise reduce cognitive bias more broadly than previously recognized.

**Keywords:** foresight, risk perception, cognitive bias, national risk analysis.

### **Roundtable discussion: Multilevel Governance for Decarbonisation in Times of Crises**

*Farid Karimi (University of Jyväskylä), Aistė Balžekienė (Kaunas University of Technology), Mišík Matúš (Comenius University Bratislava), Joaquin Zenteno Hopp (Western Norway Research Institute), Vineta Kleinberga (Rīga Stradiņš University), Paul Arteaga (LUT University)*

The European Union's twin transition presents complex challenges that are transforming society, the economy, and infrastructure across all levels of governance. Although the EU is firmly committed to achieving carbon neutrality by 2050, recent global crises, such as the COVID-19 pandemic and ongoing geopolitical tensions, particularly the Russian invasion of Ukraine, have intensified the complexity of this transition. These developments highlight the critical need for cross-border cooperation and well-coordinated strategies across multiple governance levels.

Recently, the EU adopted the Preparedness Union Strategy (European Commission, 2025), which emphasises collective preparedness and the ability to respond to crises quickly and effectively. The involvement of different-level stakeholders at local, national and cross-national levels is essential for the collective preparedness.

The panel will discuss the gaps in the current multi-level governance (MLG), both in theory and practice, strategies to enhance regional and intra-regional collaboration and resilience and the role of bottom-up initiatives and social innovations in implementing the twin transition in the EU across the various levels in the politically turbulent era. For instance, the panel discusses how social innovation is contributing to the development of what is referred to as 'social symbiosis'. This is an approach through which workers operating at different levels of governance engage in new forms of interaction to exchange skills and knowledge, with the aim of advancing the green and digital transitions.

The panellists include:

- Dr Farid Karimi, University of Jyväskylä, Finland, moderator
- Prof Aistė Balžekienė, Kaunas University of Technology, Lithuania, discussant
- Asso. Prof Mišík Matúš, Comenius University Bratislava, Slovakia, discussant
- Dr Joaquin Zenteno Hopp, Western Norway Research Institute, Norway, discussant
- Vineta Kleinberga, Rīga Stradiņš University, Latvia, discussant
- Paul Arteaga, LUT University, Finland, discussant

The panel is based on the EU Horizon Europe project ‘EU Decarbonisation in Times of Crises: Exploring Social Innovations and Enhancing an Equitable Twin Transition’(DeCrises).

**Keywords:** multi-level governance, EU, twin transition, digital transition, green transition.

### **Simulation: Scenario-Based Exercise: Interdisciplinary Response During a Multi-hazard Crisis**

*Bart Blokland (Pandemic and Disaster Preparedness Center), Emily Scott (Pandemic and Disaster Preparedness Center), Charlotte Waltz (Pandemic and Disaster Preparedness Center)*

The emergence and changing geographic distribution of zoonotic and vector-borne infectious diseases are increasingly linked to climate-related hazards, such as floods, creating multi-hazard crises which disrupt ecosystems, increase the risk of spill over events, and strain public health systems. This amplification of both short- and long-term risks and impacts requires an interdisciplinary and cross-sectoral response.

The Pandemic and Disaster Preparedness Center (PDPC) has extensive expertise in designing and organizing scenario-based exercises with a particular focus on interdisciplinary collaboration. These scenario-based exercises function both as effective tools for skills- and network-building in pandemic preparedness and as boundary objects that facilitate knowledge integration across disciplines.

During the exercise, participants are confronted with a multi-hazard scenario including a major flood followed by a Japanese encephalitis outbreak. Within two rounds the participants are 1) tasked with creating a multi-hazard risk assessment and 2) allocating a limited number of resources based on a prioritization of their identified risks. The exercise concludes with a reflection and evaluation session, discussing the experiences of the participants and stimulating the learning and skill-building process of the workshop.

The objectives of the simulation are threefold:

1. To train participants in identifying and integrating diverse disciplinary perspectives into coherent and balanced advice.
2. To strengthen skills in interdisciplinary teamwork, critical thinking, and decision-making under uncertainty.
3. To explore the values and trade-offs underlying multi-hazard response, ensuring that advice is evidence-based, and socially and ethically informed.

**Keywords:** scenario-based exercise, Interdisciplinary collaboration, risk assessment, multi-hazard crises response.

[Parallel sessions 7.1.-7.4 | Workshop 4](#)

## **7.1. Societal Resilience and Crisis Preparedness**

### **Lay – Expert Perception of Societal Resilience and Crisis Preparedness in Lithuania**

*Aistė Balžekienė (Kaunas University of Technology)*

Societal resilience has become a central concept across many countries and communities following complex, cascading crises in recent years. After the Russian invasion of Ukraine in 2022, the Baltic

states have experienced the cascading effects on energy prices, followed by the highest inflation in Europe and accompanied by the crisis of illegal migration from the Eastern border. In Lithuania, concerns about societal resilience have increased during these turbulences, leading to intensified implementation of precautionary strategies at national and municipal levels. Societal resilience is significantly shaped by the public trust in institutions, empowering local leaders, strengthening public awareness and practical preparedness.

This presentation will discuss the factors shaping perceptions of societal resilience and crisis preparedness in Lithuania, based on empirical data from public and expert surveys.

The research is using a mixed method approach based on: (1) a representative public opinion survey, conducted in Lithuania in October 2024, with 1003 respondents. (2) Online expert survey of national, municipal and community level, including 110 experts, conducted in November – December 2025. Experts were asked to comment on and recommend actions needed to strengthen societal resilience based on the results from the population survey.

Survey results indicate that one of the biggest problems is low public trust in institutions and their capacities to manage crises effectively. Practical civil preparedness is rather low; more attention is needed for crisis exercises and risk communication. This study also identifies gaps in lay-expert perception of societal resilience and reflects on the role of different stakeholders in civil preparedness.

This presentation is based on the project „Socio-spatial determinants of societal vulnerability and resilience to crises and strengthening the crisis response potential of communities“ (SERENITY), funded by the Research council of Lithuania, no. Nr. S-VIS-23-21

**Keywords:** societal resilience, crises preparedness, risk perception.

### **Measuring Individual Crisis Preparedness and Societal Resilience in the Baltic Sea Region: Evidence from the 2025 Baltic Individual Crisis Preparedness Barometer**

*Ieva Birka (University of Latvia)*

The talk will present findings from the 2025 wave of the Baltic Individual Crisis Preparedness Barometer, an ongoing comparative research initiative hosted by the University of Latvia that examines societal resilience through the lens of individual preparedness.

The presentation will use data (n=1,000 each) from Helsinki, Tallinn, Riga, Vilnius, and selected German cities, offering one of the first systematic, city-level comparisons of individual threat perception and crisis readiness in the Baltic Sea Region.

Analysis addresses three interrelated dimensions. First, it examines overall self-sufficiency capacity, measured as individuals' ability to sustain themselves independently for at least 72 hours during crises. This indicator captures practical preparedness, including awareness of action (sirens, shelters, etc), reserves of water and food, medication, cash, and allows comparison across urban contexts with different risk environments.

Second, use the data to identifying which threats individuals perceive as most salient – ranging from military and hybrid threats to infrastructure failures, climate-related risks, and cyber disruptions. Particular attention is paid to how threat perception varies across cities.

Third, highlight structural and social vulnerabilities, with a focused analysis of Russian-speaking populations in Riga and Tallinn, as well as persistent gender gaps in awareness and preparedness.

These findings reveal uneven access to information, trust asymmetries, and differing preparedness behaviours that have direct implications for inclusive resilience policies.

The findings offer concrete, evidence-based insights for policymakers, municipalities, and international organizations seeking to design targeted preparedness and risk communication strategies.

**Keywords:** individual crisis preparedness, urban resilience, risk perception and risk communication.

## **Preparedness and Participatory Governance: Embedding Civic Engagement in Disaster Risk Management**

*Daniele Del Bianco (Institute of International Sociology of Gorizia), Ramona Velea (Institute of International Sociology of Gorizia), Francesca Sabatini (Institute of International Sociology of Gorizia), Alice Rossi, Riccardo Laterza (Institute of International Sociology of Gorizia)*

In contexts increasingly characterised by polycrises and cascading risks, disaster risk management (DRM) and preparedness require approaches that move beyond technocratic planning towards mainstreamed forms of participatory governance. This paper proposes a participatory methodological framework that conceptualises civic engagement not as a supplementary consultation mechanism, but as a structural component of preparedness and societal resilience. The framework is grounded in resilience theory and participatory governance scholarship and builds on Council of Europe, aligned approaches, notably the Resilience Building Strategies (ReBuS) framework and related civil participation toolkits and guidelines.

Methodologically, the framework integrates structured stakeholder mapping, participatory vulnerability and resilience assessment, co-production of risk knowledge, and iterative validation processes across the disaster management cycle, with a particular focus on prevention and preparedness. Its core innovation lies in the formalisation of local participatory structures, such as resilience teams or councils, that operate as stable interfaces between public authorities, emergency services, civil society and citizens. These structures support continuity, mutual learning and accountability, enabling the translation of local knowledge and risk perception into actionable and legitimate preparedness measures.

The framework is illustrated through two applied cases at different scales. The EU H2020 RESILOC project demonstrates how Local Resilience Teams supported participatory assessment, scenario-based preparedness and the co-development of local resilience strategies across diverse contexts. The CiVà project in Lucca (Italy) shows how participatory methodologies can be embedded within statutory civil protection planning through the establishment of a permanent local resilience council, leading to tangible improvements in preparedness measures, risk communication and community ownership.

Together, these cases demonstrate that structurally integrated civic engagement enhances the relevance, legitimacy and sustainability of preparedness planning, strengthens adaptive capacity, and supports societal resilience in the face of complex and cascading risks. The paper argues that embedding participatory governance mechanisms within formal DRM systems is a prerequisite for durable preparedness.

**Keywords:** civic engagement, participatory governance, societal resilience, local resilience teams.

## **Elevating Women’s Participation across the Disaster Management Cycle: Bridging Implementation and Policy in South Asia**

*Margareta Wahlstrom (GLOW Red), Anjana Dayal de Prewitt (GLOW Red)*

Women play indispensable roles across all phases of disaster preparedness, response, and recovery, at community and frontline levels where disasters are most acutely experienced. In disaster-prone regions such as South Asia, women are central to implementation-level disaster risk reduction (DRR) activities, including early warning dissemination, community preparedness, service delivery, and recovery support. Across the United Nations system, NGOs, and state-led disaster management institutions, evidence consistently shows that these contributions enhance inclusive and effective outcomes. Yet women remain markedly underrepresented in policy-making spaces that shape disaster risk governance.

This paper examines the gap between women’s operational participation and their influence over disaster-related decision-making in India, Bangladesh, and Sri Lanka – three countries that share high disaster exposure but differ in governance structures, legal frameworks, and institutional arrangements. Despite strong normative commitments under the Sendai Framework for Disaster Risk Reduction (2015–2030) and national gender equality policies, women’s leadership in disaster governance remains weakly institutionalized.

The study includes three research questions:

1. How do DRR policies and legal frameworks in India, Bangladesh, and Sri Lanka address gender equality and inclusion in disaster governance?
2. To what extent are these commitments reflected in operational practice across UN, NGOs, and state disaster management institutions?
3. What structural factors enable or constrain women’s transition from implementation roles into policy-making positions?

Using a comparative qualitative approach, the paper analyses national DRR policies, operational guidance, and legislation across the three countries, complemented by targeted “reality checks” examining how formal commitments translate into practice. The findings reveal recurring policy–practice gaps shaped by institutional cultures, leadership pipelines, and accountability mechanisms.

The paper concludes with a comparison with the EU context and concise set of culturally appropriate actionable recommendations aimed at strengthening coherence between policy and practice and advancing women’s leadership across UN, NGO, and state-led DRR systems in South Asia. Elevating women’s participation across the full disaster management cycle is advanced as both a matter of equity and a strategic imperative for disaster resilience.

**Keywords:** women’s participation, disaster risk reduction, South Asia, governance, policy–practice gap, societal resilience.

## 7.2. Foresight and Risk Governance

### **“It won’t affect us”: Perspectives from the Private and Public Sectors on High Impact, Low Probability (HILP) Events**

*Mhari Gordon (University College London), Gianluca Pescaroli (University College London), Femke Mulder (University College London)*

High Impact, Low Probability (HILP) events have previously been framed as ‘outlier’ events, or even as ‘unexpected’ or ‘unknown’ events, due to their rare or unprecedented occurrences. As such, HILPs have been typically thought to be difficult to conceptualise and to take preventative actions or plan responses to. HILPs have had catastrophic impact on societies, in particular due to increasing complexity and cascading effects; therefore, impacts cross-cutting different actors, sectors, and geographical borders. With the aim to critically investigate if and how HILPs could be better prepared for and responded to, 41 semi-structured interviews were carried out with senior risk and resilience managers across different countries and sectors, under the EU HORIZON AGILE project (AGnostic risk management for high Impact Low probability Events). Our findings examine common points of failure between different types of HILPs, such as limitations in coordination and communications efforts as well as attitudes of “it won’t affect us”, and insights into differing and overlapping perspectives from the public sector and private sector (including regulated industries), touching on topics such as risk appetite, responsibility, and size of organisations. These provide unique findings for understanding HILPs and their management across different actors and systems. This has significant implications for further improving the likes of stress-testing exercises, risk assessments, and awareness of HILPs, which is of particular importance as complexity and interconnectedness of disasters are expected to increase.

**Keywords:** HILPs, private sector, public sector, stress-tests, risk assessments.

### **Strategic Foresight in Disaster Risk Management: Practices across Europe**

*Ingeliis Siimsen (University of Tartu), Kati Orru (University of Tartu), Sten Hansson (University of Tartu), Tommi Asikainen (European Commission Joint Research Centre)*

Strategic foresight – a systematic approach to exploring potential future states and anticipating change – can inform decision-making in disaster risk mitigation and preparedness. Our study aims to create an understanding of the uses of strategic foresight by exploring the existing practices and lessons learned across different European disaster risk management systems. We have done this by conducting semi-structured expert interviews with representatives from six European countries, holding an international webinar with risk assessment and foresight experts, and carrying out desk research on official reports and documents concerning strategic foresight and disaster risk. The interviewees included representatives of ministries or government agencies responsible for disaster risk management and civil protection in Finland, Ireland, Denmark, Norway, Luxembourg, and Romania.

Our results indicate that strategic foresight exercises in disaster risk management are largely embedded into existing risk assessment practices. Some of the more common methods used in such exercises are scenario-building and horizon scanning. The shift towards more forward-looking approaches, such as strategic foresight, has been influenced by the growing need to address emerging risks with no historic precedent. The implementation of strategic foresight methods in risk assessment

is facilitated by cooperation between different stakeholders and an openness to new approaches. On the other hand, such processes are resource-intensive, which can impede their implementation.

**Keywords:** disaster risk management, strategic foresight, risk assessment.

### **Deliberative Panels as an Arena for Engagement: A Case Study of a Possible Small Modular Reactor Project in Finland**

*Matti Kojo (LUT University), Maare Käis (LUT University), Heppu-Eemeli Honkanen (LUT University), Niina Kiviluoma (LUT University)*

In recent years, municipal council initiatives to explore small modular reactors (SMRs) have been launched in several Finnish cities. Although SMR technology is still in the development stage, SMRs have been deemed as an effective means of reducing carbon dioxide emissions from district heating. For an SMR to be techno-economically viable, the plant should be located near the existing district heating network, which raises questions regarding residents' attitudes toward the facility and the related planning and decision-making processes.

We analyse two deliberative panels and the discussions within them as an example of engagement in a potential SMR project. The target audience for the first panel consisted of policy and decision-makers, while the second panel was aimed at representatives of residents' associations, environmental organizations and other similar groups. The panels were organised in February 2026 in Espoo as part of the CO-SUSTAIN research project.

The SMR discussion has taken several turns in the City of Espoo. In December 2017, a council initiative proposed exploring SMRs for carbon-neutral district heating. Although the City Council rejected the motion in 2018 citing safety and waste concerns, SMR studies were later integrated into the city development programmes. However, the city strategy of 2025 omitted SMRs. The City of Espoo aims at achieving carbon neutrality by 2030.

The aim of the CO-SUSTAIN project is to enhance capacity to address complex long-term challenges, mobilise and engage citizens, and craft policies that address climate imperatives in a manner supported by citizens.

**Keywords:** deliberative panel, engagement, small modular reactor.

### **The Prevention Cycle: State Investments in Preventing System Risks over Time**

*Bas Heerma van Voss (De Nederlandsche Bank/Radboud University)*

An understudied challenge in risk governance is understanding how states invest in preventing systemic risks – threats to vital societal systems – over the long term. This research introduces the concept of a “prevention cycle” to conceptualize the waxing and waning of preventive investments over time. Major disasters or crises serve as focusing events that open windows for substantial preventive measures, triggering surges in risk-reduction policies and funding. As public attention recedes and memories of the crisis fade, however, these preventive efforts often diminish, leading to a recurrent cycle of heightened investment followed by decline rather than a sustained commitment to risk mitigation.

Drawing on insights from disaster studies, policy process theory, and cross-domain analysis, the study demonstrates that state prevention efforts consistently follow this boom-and-bust trajectory across diverse domains. Empirical case studies – ranging from counterterrorism after 9/11 to nuclear safety

post-Fukushima and flood protection following Hurricane Katrina – reveal a common pattern of rapid policy escalation in the wake of catastrophe, followed by gradual reversion to lower investment levels. This theoretical framework provides a new lens on state behaviour in managing systemic risks, explaining why even well-intentioned risk reduction initiatives often lose momentum over time. The findings carry broad implications for risk governance and disaster management: recognizing the prevalence of prevention cycles underscores the need to institutionalize more persistent preparedness and preventative investment beyond the immediate aftermath of crises. By bridging perspectives from emergency management, disaster risk reduction, and governance, this work offers an interdisciplinary foundation for designing policies that break out of reactive cycles and build sustained resilience for future generations.

**Keywords:** public policy, preparedness, risk policy, investment, disasters.

### **7.3. Vulnerability in Displaced and At-Risk Populations**

#### **Bounce Back or Breakdown? Assessing Territorial Vulnerability to Repeated Floods across European NUTS-3 Regions**

*Davide Di Marcoberardino (University of Macerata), Mariagrazia D'Angeli (University of Roma Tre)*

Climate-related disasters are attracting increasing global concern due to their severe impacts on communities, infrastructure and economies. The latest IPCC reports confirm that human-induced climate change has intensified the frequency and severity of such extreme events. At the same time, population growth and economic development further increase vulnerability, while mitigation efforts remain insufficient. This study investigates the effects of repeated climate-related hazards on socio-economic vulnerability at the local level, focusing on NUTS-3 regions across European countries. Using the Joint Research Centre's (JRC) socio-economic vulnerability indicator and HANZE floods data, this study evaluates the relationship between multiple disaster occurrences and socio-economic vulnerability. Our findings indicate that while the first flood event is linked to increased overall vulnerability across all sub-dimensions, the third flood is associated with a decline in overall, economic and environmental vulnerability. The social dimension displays particularly high sensitivity, with no significant effects observed after the third event. Moreover, shorter intervals between floods reveal stronger effects and no signs of adaptation.

**Keywords:** repeated disasters, floods, vulnerability, NUTS-3 regions, climate change.

#### **EU Disaster Strategy in Conflict: The Syrian Earthquake as an Extreme Case Study**

*Hasan Ogredik (University of Exeter)*

This research examines the European Union's (EU) disaster response strategy in conflict-affected environments through the extreme case of the 2023 Syrian earthquake. Positioned within the framework of societal resilience and cascading crises, the study aims to empirically identify how the EU manages disasters at the intersection of armed conflict and large-scale natural hazards, and to provide policy-relevant insights for disaster governance in sensitive contexts where no established operational roadmap currently exists. The literature offers limited empirically grounded guidance on disaster strategies in conflict-affected environments, making this case particularly relevant.

Using an extreme single-case study design centred on the earthquake that occurred in Syria in 2023 during the ongoing civil war, the research draws on semi-structured interviews with Union Civil Protection Mechanism (UCPM) responders and partner organisations (n = 12), complemented by documentary and digital analysis of Directorate-General for European Civil Protection and Humanitarian Aid Operations (DG ECHO) communications and operational records. This qualitative approach allows for an in-depth analysis of disaster governance under conditions of diplomatic disconnection and overlapping crises.

The findings show that the Syrian earthquake functioned as a cascading crisis, exacerbating pre-existing vulnerabilities linked to conflict, governance constraints, and limited access. The case generates empirical evidence of a three-stage EU disaster strategy in sensitive contexts: (1) coordination is conducted remotely, (2) operational implementation is delegated to domestic and local partners, and (3) operations remain civilian, with military assets used only for logistics. This model allows the EU to maintain operational effectiveness while navigating political and security constraints.

This study contributes an analytical model for understanding disaster response strategies in contexts of polycrisis, offering a practical roadmap for policymakers and disaster managers operating in conflict-affected environments. It advances debates on societal resilience, cascading crises, and EU disaster governance under geopolitical stress.

**Keywords:** EU disaster strategy, conflict-affected environments, cascading crises, societal resilience, Syrian earthquake, disaster governance, complex emergencies.

### **Building Resilience to Cascading Crises: Disaster Preparedness and Health Equity Among Refugee Populations in the Gulf Region**

*Ming Xie (University of Maryland Baltimore County), Jungwon Yeo (University of Maryland Baltimore County)*

Cascading disasters – such as hurricanes, flooding, and extreme heat – pose disproportionate risks to marginalized populations, including refugees, whose systemic vulnerabilities compound disaster impacts. In the Gulf region, refugee communities face intertwined challenges of restrictive immigration policies, language barriers, socioeconomic instability, and limited integration into healthcare and emergency management systems. These factors heighten health disparities and hinder effective preparedness, response, and recovery, illustrating how societal vulnerabilities amplify the effects of cascading crises. This study investigates how climate-related disasters intersect with structural inequities to affect refugee health outcomes and disaster resilience in Florida and Texas. Employing a community-based participatory research (CBPR) approach, the project engages refugees, local health agencies, emergency management organizations, and non-profit service providers to co-design interventions that strengthen preparedness and response capacities. Key research objectives include: (1) evaluating the role of risk communication and culturally tailored health education in promoting disaster preparedness behaviours, (2) identifying policy and systemic barriers to equitable emergency healthcare access, and (3) assessing the effectiveness of community-led disaster preparedness training in mitigating vulnerabilities during cascading crises. The research findings reveal critical gaps in emergency response frameworks, including insufficient multilingual resources, limited collaboration between refugee service organizations and public agencies, and inadequate support for households with high health and social vulnerability. Community-driven workshops and educational interventions empower refugees to actively participate in disaster planning, bridging systemic gaps and enhancing

societal resilience. By integrating marginalized communities into disaster planning, this research highlights how targeted, inclusive strategies can reduce health disparities and strengthen community-level resilience to cascading crises. The project provides actionable insights for policymakers, practitioners, and emergency management agencies seeking to enhance societal resilience in disaster-prone regions and demonstrates a model for embedding equity into disaster preparedness and response.

**Keywords:** cascading disasters, societal resilience, disaster preparedness, health equity, refugee communities.

### **Blackout in a Berlin Neighborhood: Voices of Those Affected**

*Sara T. Merkes (Academy of the Disaster Research Unit), Katja Schulze (Academy of the Disaster Research Unit), Theresa Zimmermann (Disaster Research Unit, Freie Universitaet Berlin)*

In early January 2026, around 45,000 households in southwest Berlin faced temperatures below freezing and a sudden loss of electricity. An attack on the electricity infrastructure early in the morning on the first Saturday of the new year caused a five-day blackout. A quick-response survey was conducted to explore how people coped with the situation, including their challenges, perceptions, and lessons learned for preparedness. A mixed-methods questionnaire was administered using an opportunistic sampling approach to capture the experiences of affected residents. The instrument combines closed-ended scales with open-ended questions to capture both quantifiable impacts and nuanced personal narratives. The questionnaire systematically assesses multiple dimensions of the blackout experience, including the extent and duration of the service disruption, initial perceptions and concerns during the event, preparedness levels and coping capacities, access to information and quality of information through various channels, self-efficacy and behavioural adaptations during the crisis, support needs and mutual aid activities, and post-event learning and preparedness actions. This methodological approach enables quantitative analysis of patterns across affected populations while preserving the rich qualitative insights necessary for understanding individual and community resilience dynamics.

This was the second outage in Berlin in a few months. In September 2025 - this time, during warm temperatures - there was an attack-related outage in south-eastern Berlin that lasted about 60 hours. Based on our research results, we discuss implications for experience-based disaster risk education and resilience building in the context of Germany.

**Keywords:** blackout experiences, citizen resilience, disaster risk education, Berlin - Germany.

## **7.4. Democratic Resilience and Politics**

### **Democratic Resilience and Protest Movement: Challenges to Authoritarian Regimes**

*Aleksandra Dragojlov (Kaunas University of Technology), Ognjen Karadžić (University of Belgrade)*

In an increasingly polarised world with government corruption and oppression prevalent, Serbia presents a litmus test for the EU both in terms of its neighbourhood and enlargement policy as well as the resilience and strength of protest movements in facilitating societal upheaval. The student-led protest movement in Serbia can be traced back to 2015 but has gained momentum and prominence

following the collapse of the train station canopy in the major city of Novi Sad on 1 November 2024, killing 16 people. There had been no accountability and zero arrests while President Aleksandar Vučić continues to use an arsenal of authoritarian measures to stifle the movement – including police brutality while the media serves to attack protestors. Yet, this has only increased democratic resilience rather than suppressing it. We seek to explore under what circumstances protest movements contribute to successfully challenging incumbents in competitive authoritarian regimes, offering unique examples from Serbia, which makes the country a salient case to study. The examples we look at are the hunger strikes by Dijana Hrka – a mother of one of the victims of the accident, and Milomir Jaćimović whose taxi business has been destroyed as a consequence of aiding students. We also examine the reactionary measures taken by the regime to crack down on the protest movement and seek to explore whether the democratic resilience shown in Serbia can lead to meaningful regime change and what conditions need to be in place in order to do so.

**Keywords:** protest movement, police brutality, Serbia, civil society, EU.

### **The Datafication of Official Statistics in the Baltics: Implications for Quality Public Information and Statistical Sovereignty**

*Rodrigo Santaella Goncalves (LUT University)*

This paper examines how the integration of big data and artificial intelligence (AI) into official statistics is transforming the production of public information in the Baltic Sea region, and with what consequences for democratic accountability. Focusing on Estonia and Finland – two highly digitised states operating under the same EU regulatory framework yet pursuing notably different strategies of AI adoption (more open and experimental in Estonia; more cautious in Finland) – the study situates statistical modernisation within the post-2022 “securitisation” of European policy, where digitalisation is increasingly framed as resilience, deterrence, and geopolitical competitiveness. We argue that this context accelerates the datafication of official statistics while intensifying tensions between efficiency, transparency, security, and sovereignty. We develop and employ the concept of statistical sovereignty as democratic control over the production and circulation of official statistics within a national jurisdiction, including open access to public data and the protection of fundamental rights. Two mechanisms are investigated empirically. First, growing reliance on foreign-owned cloud infrastructures and algorithmic tools deepens digital dependence and facilitates the commodification/enclosure of public data, potentially narrowing state autonomy and increasing exposure to surveillance, disruption and cybersecurity risks. Second, the turn toward AI-driven analytics introduces epistemological shifts in statistical reasoning: from transparent, sampling-based frequentist logics toward inductive and often opaque model-based practices, complicating auditability and public oversight.

Methodologically, the paper adopts a comparative, multi-level design combining (i) document analysis of EU and national statistical and data governance frameworks, and (ii) semi-structured interviews with public and private actors in Finland, Estonia and the EU statistical field. By bridging critical data/AI studies, securitisation research, and the sociology of quantification, the paper clarifies how data-driven state transformation reshapes National Statistical Offices and what is at stake for the integrity of public information in contemporary democracies.

**Keywords:** statistical sovereignty, datafication, official statistics.

## **Why Is There a Need for Data Policy for Times of Crisis Facilitated by Open Science (DPTC)?**

*Burcak Basbug (ISC CODATA), Virginia Murray (ISC CODATA IDPC), Rania Sabo (UNESCO), Simon Hodson (ISC CODATA)*

Data and relevant data policies are very crucial to define what needs to be done before, during and after any disaster, crises and emergency situations. Hazard types and frequencies change drastically. Stakeholders need accurate, timely, reliable and quality data to be able to serve to the needs of the affected communities. Science does not stop during crisis times. Academia must work and operate hand by hand with the local governments, first responders, national governments and communities in actual need for good data. The need for strong data policies and the need for open science, where it is as open as necessary and as closed as possible, brought together a team of experts from UNESCO and ISC CODATA, who believe in the need of the Data Policy for Times of Crisis Facilitated by Open Science (DPTC). In this talk, we will present the three main documents developed by the team: ‘the factsheet’, ‘the checklist’ and ‘the guidance for implementation’ documents serve in the junction of open science, good governance, infrastructure and communities to build resilient nations and communities.

**Keywords:** data, policy, data policy, open science, crisis management.

## **Journalists' Social Responsibility in Communicating Threats of War: Public Resilience and Simulated Risk?**

*Lina Rimšaitė (Kaunas University of Technology)*

In today’s society there are emerging numbers of various crises and threats, such as pandemics, hybrid attacks, military threats, where the communication becomes an essential requirement for the societal resilience. From the sociological perspective, resilience is understood as a dynamic social process, based on structural resources, institutions and collective capabilities. In this presentation social resilience is conceptualised through three interrelated abilities: coping with shocks, adapting to changing conditions, and transforming when existing arrangements become unsustainable.

The aim of the study is to critically evaluate how the concept of social responsibility among journalists changes in the communication during war threats, while the digitisation and commercialisation are breaking down and changing traditional professional boundaries. Even though the classic paradigm of social responsibility is based on the truth telling, objectivity, autonomy and “watchdog” function, the contemporary media environment increasingly depends on algorithmic visibility, audience engagement metrics, and competition for attention. Based on Jean Baudrillard's theory of simulacra and hyperreality, it is assumed that nowadays threat communication may shift from informing to creating emotionally powerful representations that shape risk perception and may undermine trust in institutions.

The analysis is based on two contexts: the Vietnam War, where journalistic autonomy is prominent, and Israel's military conflicts, where practices are restricted by formal censorship and self-censorship. The conclusion is that in order to strengthen public resilience, it is necessary to move from vertical accountability (journalists → society) to a collaborative model that encompasses platforms, institutions, audiences, and algorithmic structures.

**Keywords:** societal resilience, threat communication, war journalism, social responsibility.

## **Workshop: SYNERGIES ATLAS – The Platform for Empowering Participation in Disaster Risk Reduction and Management**

*Daniele Del Bianco (Institute of International Sociology of Gorizia), Ricardo Laterza (Institute of International Sociology of Gorizia), Francesca Sabatini (Institute of International Sociology of Gorizia)*

The session will present an interactive, hands-on demonstration of SYNERGIES ATLAS (developed within Synergies HEU project), a collaborative and user-centred web-platform designed to promote civic engagement in DRRM. The ATLAS aims to strengthen community resilience considering a wide spectrum of hazards, including cascading risks. The session is conceived as a practical learning experience in which participants will test and explore the platform themselves during a demonstration.

The ATLAS promotes a shift from traditional top-down approaches toward participatory, empowering, and shared decision-making processes in disaster risk governance. The platform hosts a curated collection of tested and replicable solutions, as well as real-world cases of civic engagement in DRRM. It goes beyond a simple repository, offering an integrated ecosystem that supports communities, practitioners, researchers, and policymakers in assessing and strengthening engagement, strategic capacity-building and action planning in DRRM.

The ATLAS is built on three main components, each designed to enable users to assess engagement in DRRM in their context, carry out strategic planning, and showcase their best practices within the platform's community. A first component is the Self-Assessment Tool (SAT), which enables users to evaluate their own DRRM practices, identify strengths, gaps, and priorities. Results are visualised through thematic indicators and are used to match relevant best practices. Building on these outputs, the Strategy Builder helps users translate priorities into actionable steps, either guided by SAT results or developed independently. The Contribution feature enables participants to foster collective knowledge by adding their own best practices to the platform.

The session will begin with a short introduction to the platform, followed by an interactive demo in which participants log in and explore its three main components, and will conclude with an open discussion to gather end-user feedback.

The session is limited to 15 participants and it requires access to a computer lab with internet connectivity and a projector. The platform is fully web-based, requiring no software installation.

**Keywords:** societal resilience, repository of engagement practices, user-centered web-platform, self-assessment tool, DRRM.

[Parallel sessions 8.1.-8.2](#) | [Roundtable discussion 4](#) | [Simulation 3](#)

### **8.1. Strategic Foresight for DRR**

#### **Preparing for the Next Crisis: A Multi-Level Approach to Understand Pandemic Preparedness**

*Teng Li (University of Groningen), Francesca Giardini (University of Groningen)*

The COVID-19 pandemic exposed critical gaps in societal preparedness and highlighted the limited understanding of how populations, especially vulnerable groups, navigate health crises. Drawing on Protection Motivation Theory (PMT), this study examines the interplay between vulnerability and compliance in heterogeneous populations during a health crisis. Individual characteristics can only

partially account for different choices in preparedness and compliance with health regulations, which are often the result of social influence. In this study, we combine public health theory, empirical data, and a computational approach to understand the dynamics of compliance with health regulations during a pandemic. We developed an agent-based model (ABM) informed by a participatory modelling workshop and calibrated using empirical data collected through surveys and in-depth interviews in Germany, Italy and Romania. The model simulates opinion formation and compliance dynamics across vulnerable and non-vulnerable groups, integrating heterogeneity in individual characteristics, like health literacy, trust, and risk perception.

Preliminary results show that social influence needs to be balanced by institutional communication, otherwise opinions tend to converge toward the initial majority stance, with vulnerable groups drifting toward non-compliance. At the same time, institutional communication needs to be balanced: comparative analyses indicate that fear-based policy produces a sharp short-term rise in compliance, but ultimately leads to declining and lower long-term compliance. On the other hand, trust-building strategies support more sustained compliance but may also generate societal polarization and decrease cohesion. These findings underscore the importance of understanding how individual heterogeneity and social influence can give rise to complex dynamics in which short-term benefits can be at odds with longer-term societal cohesion.

**Keywords:** vulnerable groups, norm compliance, health crisis preparedness, agent-based modelling.

## **Emergent Urban Resilience under Polycrisis: Conceptual and Methodological Lessons from Wartime Ukraine**

*Annegret Haase (Helmholtz Centre for Environmental Research – UFZ), Elena Batunova (RWTH Aachen), Dagmar Haase (Humboldt University Berlin), Kostyantyn Mezentsev (Taras Shevchenko National University of Kyiv), Myroslava Soldak (National Academy of Science of Ukraine)*

Urban resilience has become a key concept for analysing societal responses to polycrises and cascading crises. However, contexts of war and prolonged disruption reveal the limitations of resilience frameworks that depend on stable institutions and comprehensive data. This paper reports findings from 1.5 years of collaborative research conducted by a German–Ukrainian team, investigating how emergent urban resilience develops in Ukrainian cities during wartime disruption and how these processes can be conceptually understood and studied under crisis conditions.

Based on a synthesis of published research, collaborative engagement with Ukrainian scholars, and selected empirical observations from war-affected cities, this paper conceptualizes emergent urban resilience (EUR) as spontaneous and adaptive practices that enable urban life to persist under extreme stress. These practices manifest unevenly across urban domains such as infrastructure, governance, economic livelihoods, and everyday social relations, as well as across different phases of crisis, thereby sustaining essential urban functions when formal systems are disrupted or overburdened. Because EUR is informal, uneven, and often short-lived, it is challenging to capture empirically; evidence is fragmented, unstable, and quickly becomes outdated, while many adaptive practices leave only partial traces. To address the tension between conceptual significance and empirical elusiveness, the paper adopts a structural and temporal perspective to clarify key epistemic constraints, interpretive risks, and ethical considerations in researching resilience within crisis-affected contexts.

Although empirically grounded in Ukraine, this case is treated as an epistemic stress test for resilience research. For the Baltic States, which face heightened security concerns and complex risk environments, the Ukrainian experience provides transferable analytical and methodological insights into how resilience may emerge and transform under pressure. This contribution advances discussions on societal resilience in cascading crises by connecting conceptual understanding of emergent resilience with considerations of responsible research practices.

**Keywords:** emergent urban resilience, polycrisis, Ukraine, cities, lessons learnt.

### **Engagement of Spontaneous Volunteers in Crisis Management in Selected European Countries: Policies, Practice, and Lessons Learned from Previous Crises**

*Oliver Nahkur (University of Tartu), Kati Orru (University of Tartu), Emmeline Roeloffs (Free University Amsterdam), Loren van der Ploeg (Free University Amsterdam), Jacqueline Floch (SINTEF), Sonia Matera (Deep Blue Srl), Matthieu Branlat (AINTEF), Cristina Casareale (Save the Children Italia ETS), Antonio Opromolla (Università degli Studi dell'Aquila)*

Recently, most countries have experienced several crises, in which spontaneous volunteers have significantly contributed to the resolution thereof alongside official crisis management institutions. In our study, we sought answers to the following research questions: (1) what are the regulations and institutional arrangements for engaging spontaneous volunteers; (2) what methods and tools are used to involve them; and (3) what are the lessons learned from recent crises in engaging and cooperating with them? To answer these questions, we collected data from document analysis and expert interviews between October 2024 and December 2025 in Estonia, Netherlands, Italy, Malta and France, including overseas departments and regions such as La Réunion. In this paper, we will give overview about the regulations and institutional arrangements, methods and tools, and lessons learned in these countries.

**Keywords:** spontaneous volunteer, crisis management, volunteerism.

### **Media Narratives and Legitimacy Construction During Syria's Transitional Governance**

*Dominyka Vainoriūtė (Kaunas University of Technology)*

The legitimacy of transitional governments is one of the most debated topics in contemporary crises, as it can significantly influence diplomatic aid, recognition. Media coverage can further shape societal expectations of stability and security. Syria continues to be one of the deadliest conflicts of the 21st century. The power dynamics in the country shifted by the end of 2024, when the Sunni Islamist militant group Hay'at Tahrir al-Sham, led by Ahmed al-Sharaa, overthrew the decades-long Bashar al-Assad regime. This 'surprise offensive' attracted international attention, while media narratives shifted from the group's extremist past towards discourses of legitimacy positioning its leadership as Syria's main power. The research focuses on the legitimacy crisis in Syria's transitional governance and the media construction of legitimacy during cascading political crises. It aims to analyse how international media creates and frames narratives across different phases of Syria's political transition. The study is grounded in theories of normative and discursive legitimacy, framing, and agenda-setting. The empirical part applies the Narrative Policy Framework to analyse BBC News and Al Jazeera articles. The analysis identifies four stages of Syria's political transition: Deadlock, Violent Trigger, Initial, and Post-Settlement Transition. The findings suggest that primary attempts to frame legitimacy in Syria emerged

even before the official establishment of the new government. Media narratives gradually shifted from delegitimizing Assad and associating HTS with terrorism in Deadlock to attempts to legitimize the group in later stages. Further analysis shows that BBC News frames the legitimacy of new Syrian authorities as a conditional and reversible process, whereas Al Jazeera frames legitimacy as a process that progresses together with governance developments. Overall, the findings demonstrate close alignment between media narratives and international political discourse, highlighting the strong role of the media as risk communicators shaping public expectations, governance stability, and societal resilience during cascading crises.

**Keywords:** Syria, Syrian transitional government, legitimacy crisis, media narratives.

## **8.2. Education, Participation, and Societal Resilience**

### **Disaster Preparedness Education of Children: A Comparative Framework**

*Sten Hansson (University of Tartu), Kati Orru (University of Tartu), Oliver Nahkur (University of Tartu), Matthieu Branlat (SINTEF), Nathan Clark (Vrije University Amsterdam)*

Researchers and policy makers are looking for novel ways to reduce social vulnerability to disasters by devising educational programmes that provide individuals and organisations with the knowledge and skills to effectively prepare for and cope with the impact of hazards (Canlas, 2023; Guo et al., 2025). Disaster education of children is of particular importance, because children represent up to 50% of fatalities linked to natural hazards (Parham et al., 2021) and their physical and mental health are more likely to be affected by disasters compared to adults (Amri et al., 2018).

Drawing upon recent theorisations of disaster vulnerability, communication, and preparedness (Hansson et al., 2020; Orru et al., 2025), we propose a framework for comparing preparedness education programmes for children. We apply the framework by comparing seven educational programmes based on qualitative case studies carried out in five countries: Japan, Italy, the Netherlands, Estonia, and Réunion Island.

In the analysed programmes, significant differences emerge along several analytical dimensions, such as the reasons for developing the programme, the intended outcomes, the types of hazard events addressed, the frequency of programme activities (regular vs one-off), level of institutionalisation (voluntary participation vs formal curriculum integration), the educational methods applied, and the stakeholders involved. The results provide a groundwork for future comparative studies and evidence-based policy making in disaster education and vulnerability reduction.

**Keywords:** disaster education, preparedness, vulnerability, risk communication, engagement.

### **Community Participation in Stress-Testing Scenarios**

*Mhari Gordon (University College London), Gianluca Pescaroli (University College London)*

Community participation during stress-testing approaches offers new opportunities for strengthening disaster preparedness. Community residents are often the first to respond during disasters yet can be excluded from disaster preparedness efforts and training. This presentation will demonstrate a participatory workshop methodology, which is being co-developed with local partners, and will be used primarily with residents of Tanjung Bena, Bali, Indonesia. The scenario will focus on warnings and

evacuation response to validate the community asset mapping and evacuating modelling from earlier works of the project. The stress-test, table-top exercise uses a high-engaging card deck game to identify single and common points of failure within social relationships and physical infrastructure resilience. This is of particular importance as ‘soft components’ such as information (multi-directional flows of information), organisational procedures, and engagement and co-ordination across actors and sectors are critical during crises and may expose underlying gaps if not recognised beforehand and addressed during a crisis. This leads to ‘outside the box’ thinking, which has proven to be essential for dealing with disasters which may be unprecedented as well as highlighting different capacities and limitations during events with multi-hazard occurrences. This community-level, stress-test methodology provides an opportunity to further engage individuals and communities in disaster preparedness using an effective yet simple approach.

**Keywords:** community participation, scenarios, stress-tests, resilience.

### **Informed and Resilient? Scientific Literacy and Perceived Societal Resilience in Citizen Science**

*Ineta Simonaitė (Kaunas University of Technology)*

Societal resilience has become a central concept in contemporary debates on crisis management, democratic governance and citizen engagement. In addition, citizen science is seen not only as a research methodology, but also as a civic practice that empowers the abilities and knowledge of different citizens. However, it is interesting to examine how citizen science participation and scientific literacy are related to perceived societal resilience, as empirical evidence of this topic remains limited. This research examines if higher levels of scientific literacy and engagement in citizen science are associated with higher perceptions of societal resilience. Using data from a nationally representative survey conducted in Lithuania in 2024, during project RECONNECT, the study conceptualises perceived resilience as the dependent variable and analyses the impact of several citizen science-related indicators, including participation experience, motivation to participate, science-related behaviours, and levels of scientific literacy.

**Keywords:** citizen science, resilience, scientific literacy.

### **Why Women Suffer More During Floods: A Causal Network of Gendered Vulnerability and Impacts**

*Pablo Aznar-Crespo (University of Alicante), María Almendros-López (CIPFP Canastell)*

Floods produce gender-differentiated impacts whose underlying structural drivers remain insufficiently addressed in disaster risk research and practice. This study broadens the existing evidence base through a two-stage approach. First, a systematic review of the literature on gender-differentiated flood impacts was conducted, encompassing 104 scientific and technical sources. From this review, 41 distinct impacts were identified, consolidated, and recoded into six thematic areas. These impacts constitute the empirical foundation for understanding how gender shapes exposure, sensitivity, and recovery capacities in flood contexts. Second, to explain the causal mechanisms behind these documented impacts, a multidisciplinary expert panel was convened to identify and characterize the underlying vulnerability factors. This process resulted in 22 vulnerability factors, which were organized into a directed causal network linking vulnerabilities to the gendered impacts documented in the

literature. Network metrics were applied to assess the relative weight of each vulnerability factor and to identify critical nodes within the system. The analysis reveals a structurally cohesive core dominated by institutional, economic, and care-related vulnerabilities. These upstream factors, such as limited access to decision-making, gendered divisions of unpaid care work, and economic dependency, emerge as key drivers that amplify multiple downstream impacts including restricted mobility, heightened exposure during evacuation, unequal access to aid, and disproportionate psychosocial burdens. Their central position suggests that addressing a small set of structural vulnerabilities could yield multiplier effects across a wide range of gendered outcomes.

**Keywords:** gendered vulnerability, flood impacts, disaster risk reduction, causal network analysis, systematic review.

### **Roundtable discussion. Regulating for Resilience: Developing Governance Frameworks for Early Action**

*Toni Collins (University of Canterbury), Douglas Cubie (University College Cork), Holly Faulkner (University College Cork)*

It is widely accepted that preparing for a hazard is preferred to managing its impact. The UNDRR estimates that every \$1 invested in preparation saves \$4 in response/recovery costs. For this reason, there has been a concerted attempt in the past decade to focus DRR policy on prevention and mitigation rather than response and recovery.

However, this shift towards prevention has tended to miss one important aspect, the critical role of regulatory frameworks and legal tools. These need to be capable of encouraging and allowing preparedness, implementing early warnings, and making rapid response and preventative measures more effective. Without these frameworks societal resilience can be undermined and emergency powers used inappropriately to fill this gap. To avoid this, legal preparation needs to be part of the conversation.

In this panel, members of the International Disaster Emergency and Law (IDEAL) Network will discuss the role of law in ensuring the effective implementation of preventative measures and a swift and effective recovery. The discussion will also touch upon how the proposed International Law Commission's Draft Articles on the Protection of Persons in the Event of Disasters (PPED) and the proposed Disaster Law Treaty that will be based upon them could achieve these goals. Alongside a general discussion of the concept of legal preparedness, the papers will cover a selection of case studies examining the role of law and regulation, delivering early warning, effective business recovery and dispute resolution as well as monitoring these and other international commitments.

This panel thus provides a window into a lesser known, but crucial area of disaster studies, that of disaster law. It will provide an opportunity for practitioners and academics to consider how legal preparedness can play a key role in delivering successful response and recovery outcomes for the communities impacted by disasters.

**Keywords:** preparedness, law, governance, regulatory frameworks, early warning.

### **Simulation: Scenario-Based Simulation of Cascading Crises in Complex Risk Environment**

*Audronė Telešienė (Kaunas University of Technology), Ulrika Varankaitė (Kaunas University of Technology), Rūta Pelikšienė (Kaunas University of Technology)*

Communities located in areas of overlapping geopolitical, social, economic, technological and environmental risks face complex and cascading crisis dynamics that challenge conventional preparedness and response approaches. Border regions, in particular, reveal how socio-spatial vulnerabilities and communication failures can interact and amplify crisis impacts. Understanding these dynamics requires not only analytical tools, but also immersive and participatory methods that allow stakeholders to experience and reflect on cascading risks in real time.

This interactive session introduces a cascading crisis simulation developed within the SERENITY project, using a concrete Lithuanian local case study of Kybartai – a border community situated in the Suwalki Gap, a strategically sensitive area at the eastern border of NATO. Participants will be invited to assume the roles of local residents, municipal actors, or other stakeholders, and to engage in a moderated, scenario-based discussion guided by session facilitators.

The simulation is grounded in detailed descriptions of local spatial and social vulnerabilities and unfolds through a sequence of simulated events, also providing with preparedness communication and crisis communication examples. Through role-based interaction, participants will explore how cascading crises differ from single-hazard emergencies, and how communication and community resilience factors shape local response potential.

In the final part of the session, participants will collectively reflect on lessons learned and co-develop recommendations for strengthening community preparedness and resilience under conditions of cascading crises. For participants, the simulation offers an experiential understanding of crisis dynamics, resilience mechanisms, and communication challenges. For researchers, it provides an opportunity to further validate crisis scenario simulation as a methodological approach and to refine evidence-based recommendations for enhancing local community resilience in high-risk contexts.

This session is based on the project “Socio-spatial determinants of societal vulnerability and resilience to crises and strengthening the crisis response potential of communities” (SERENITY), funded by the Research Council of Lithuania, no. S-VIS-23-21.

**Keywords:** cascading crises, community resilience, socio-spatial vulnerability, crisis simulation, Suwalki Gap.